

A CONCEPTUAL FRAMEWORK OF BUSINESS MODEL INNOVATION BASED ON BUSINESS ECOSYSTEM – A CASE STUDY OF ÜLEMISTE CITY

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Abstract. Globalization has driven organizations to innovate rapidly by impelling lower entry barriers. As a result, organizations adopt new business models that value interconnectedness and complement partnerships. Simultaneously, business ecosystems enable dynamic networks and creative cultures by integrating a variety of innovation stakeholders. The research explores the business model of organizations within the Ülemiste City ecosystem to understand the conceptualization of business models and the factors leading them to create or transform the business models based on ecosystem perspective and a conceptual framework is developed to reinforce the participation and value processes of an organization within the ecosystem. Through semi-structured interviews and thematic analysis, the study revealed that the business model concept is perceived differently by organizations as an abstract idea of the business's inputs, operations, activities, and output. Product or service differentiation, market needs, value creation, and a continuous improvement process were a few factors that influenced a business model transformation. The influence of the ecosystem in the business model pertained to the infrastructure and value-added services offered, with a networking opportunity of partnerships within the community.

Keywords: business models, business ecosystem, innovation, environment, network, value creation

JEL Classification: M1.

Introduction

Organizations are increasingly adopting new and innovative business models to maintain their positions in this dynamic and competitive environment. Previous research and literature highlight critical factors in business models such as value proposition, revenue models, and customer segmentations (Weiller & Neely, 2013). Today's business environment paves the way for dynamic networks by integrating a variety of innovation stakeholders such as private-public organizations, investors and financial institutions, universities and human resources, start-ups, established organizations ranging from small to large firms, municipalities, policy makers, and citizens (Lappalainen et al., 2015).

According to Fasnacht (2020), for the organizations to scale up to open innovation and diversity, agile and disruptive business models are to be adapted, which can sustain the constant ecosystem evolution. Moore (1993) emphasizes the theory of business ecosystem, which is now extensively adopted by communities with high-tech organizations and innovative entrepreneurial ventures. Considering the number of startups being registered

in Estonia alone establishes that technology-driven solutions and services cater to a vast customer base and strives to achieve a competitive advantage in this fast-paced market.

Brillinger et al. (2020) studied existing business models based on literature and the business models being used in organizations can be analyzed to confirm that risks and uncertainty are a major concern for adapting business model innovation. Organizations of different types and sizes implement business models without considering the critical criterion needed to breach the barriers for change management and prepare for disruptive innovation (Gomes et al., 2018).

From the perspective of an organization that fosters business ecosystem, Ülemiste city serves a wide range of businesses with modular yet integral and multilateral interactions. The diversity of organizations posed a significant challenge, such as different types and sizes with a multitude of different components, a standardized approach is implemented by connecting small-medium sized organizations.

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The study explores business models of organizations to understand and correlate the internal and external factors concerning an ecosystem and develops a conceptual framework to reinforce the value processes of an organization and align it with the external networks within the ecosystem. To achieve the purpose of this study, the authors have set forth the following research questions:

- How are business models perceived, conceptualized and used in different organizations?
- What are the factors that lead them to create or transform their business model?
- How ecosystem perspective can guide business model design?

For this study, the authors explored a mix of convenience and purposive sampling techniques and interviewed respondents at the managerial level of 10 small to medium size organizations. Subsequently, the data were analyzed using a thematic approach to achieve the results. The research conducted equally contributes to organizations and ecosystems currently in collaboration or anticipating involvement, as the results exhibit the characteristics of the business ecosystem and potential benefits that are of significant advantage. The paper explores previous research on business models, business ecosystems, and ecosystem-centric business models to outline a framework based on previous research and briefly elaborates on the research methodology, including the description of organizations involved, followed by the discussion of data analysis and results based on the interview transcripts and development of the conceptual framework.

1. Literature review

1.1. Business model definitions

The business model concept is of cornerstone importance to trade and economic activity (Teece, 2010). Business models became popular with the advent of the Internet in the 1990s. Osterwalder et al. (2005) defines business model as a tool that encompasses a group of elements that articulates the value proposition as well as the process and network to conceive financial profitability. Chesbrough and Rosenbloom (2002) defines the concept as a combination of processes aimed at converting innovation into value. Similarly, Slywotzky et al. (2003) define it as a feed for firm activities to incorporate organizational design and strategy. A more recent approach by Teece (2018) defines a business model as “architecture of value creation and its underlying mechanism that a firm employs”. Thus, the nucleus of a business model is the mechanism through which organizations deliver a proposed value to customers and receive value from customers in the shape of profits. However, the academic literature on the concept remains scattered and inconsistent. George and Bock (2011) believe that research on the business model is still in the nascent stage and thus offers an opportunity for scholars to study and explore the concept from a resource and value generation perspective.

1.2. Business ecosystems

The idea of the business ecosystem has originated mainly in the 1990s. According to Moore (1996), a business ecosystem is “an economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world”. Moore (1996) also believed that organizations, stakeholders, manufacturers, and suppliers are the basis of an ecosystem. Although Moore believed that the business ecosystem concept could serve as a replacement to traditional strategic alliances and virtual organizations (Moore, 1996, p. 54), there also exists a lack of analytical tools required to bring the actual value of the concept for practitioners (Adomavicius et al., 2006). Nevertheless, the idea is gaining traction and serves as a starting point for studying interconnections among various enterprises operating around a focal firm or platform (Thomas & Autio, 2012). Recent years have witnessed a surge in the study and application of the ecosystem concept (Adner, 2017; Jacobides et al., 2018). Other scholars such as Hannah and

Eisenhardt (2018) also believe that a business ecosystem is based on a series of complementary and cooperative relationship to attain a win-win situation and achieve common goals. The “concept of business ecosystem” is a potent tool to create and capture value (Tsujiyama et al., 2018). The internet revolution’s ease and benefits positively impact the communication between different stakeholders (Le Gall et al., 2015). The concept of “industry” is fast eroding and getting replaced with an even more inclusive term, “business ecosystem”. As economies grow in value and economic activities become diverse, businesses share their core capabilities to create better customer value (Moore, 1996). Traditional businesses focused on the profitability of a single actor. However, today, the profitability of a single actor now depends on the profitability of other related businesses. It demands a collaborative approach rather than a single competitive approach (Arend, 2013). A 2019 study by the Boston Consulting Group indicates that the term ecosystem occurs 13 times more frequently in its annual reports than it appeared a decade ago. Furthermore, Boston Consulting Group also recognizes the ecosystem as a ‘solution’ to business problems and a way forward to organizing businesses for a better value proposition (Pidun et al., 2019). One of the pioneering aspects of the business ecosystem is its capacity to generate new opportunities for new companies (Anggraeni et al., 2007). Similarly, companies could become more effective in delivering products and services (Townsend, 2006). The business ecosystem concept theoretically incorporates agency and stakeholder theory (Leviäkangas & Öörni, 2020). In agency theory, the existence of an organization is justified if it contributes to the wealth maximization of its shareholders (Squires & Elnahla, 2020). In comparison, stakeholder theory emphasizes the firm’s responsibility toward its stakeholders and society (Freeman et al., 2004).

Based on the previous scholarly work review, this literature defines a business ecosystem as an arrangement

formed by organizations to create and deliver a value proposition that a single organization cannot create alone. To deliver value, organizations need to align their resources around a focal firm that synergizes their efforts towards attaining a set goal.

1.3. Ecosystem-centric business models

Ecosystem-centric business models have many defining characteristics (Lindgren, 2016a) with sustainability and innovation being the prominent ones (Antikainen, 2016). Business models based on ecosystem concepts are self-reliant and sustainable (Lindgren & Bandholm, 2016). Researchers in business ecology have mainly viewed sustainability through the prism of resources, structures, knowledge, and ability (Iansiti & Levien, 2004). They have thus deliberated mainly on resource theory, enterprise culture theory, and innovation, among others (Adner, 2017). However, researchers argue that the business ecosystem sustainability is attained in three steps: exploring boundary barriers, mapping a dynamic model, and synergizing capabilities. The boundary at the enterprise level has been a subject of management science literature for over 40 years and it is believed that the enterprise boundary is of four types: vertical, horizontal, external, and geographic. Vertical boundary refers to barriers in the hierarchy of the organization. Horizontal boundaries are often found between various functional departments, project teams, or product lines. (He et al., 2020). Similarly, external boundaries arise between an organization and members of its external environment, such as suppliers, distributors, customers, or government bodies. Finally, geographic boundaries are common in organizations with global and trans-regional presence. By definition, boundary-spanning roles refer to individuals or groups that support the flow of information between an organization and its external environment. (He et al., 2020; Roy & Sarkar, 2016).

Furthermore, according to Moore (1993), the ecosystem's main objective is to create a community of firms that continuously co-evolve to survive abrupt changes in the market. Therefore, innovation and, more particularly, co-innovation is instrumental for organizations in an ecosystem. Similarly, researchers believe in a solid connection between innovation and ecosystem and regard it as an arrangement through which firms club their offerings into a customer-based solution (de Vasconcelos et al., 2018; Adner, 2006). On an organization level, Geels (2012) suggests that the current system shall accommodate radical and disruptive innovations to adapt to innovative practices. Furthermore, to qualify as an innovation, a business model must be designed to attract new customers and encourage increased spending on behalf of existing ones (Markides, 2006).

1.4. Ecosystem business model framework

Based on the literature review and the observation of multiple business ecosystems, this study presents the

business ecosystem on the idea of innovation and sustainability at the system's nucleus. The framework (Figure 1) of the business ecosystem presented herewith is in four levels of development. Three levels relate to the organization's internal environment, while the fourth level combines elements of the external environment of an organization in an ecosystem.

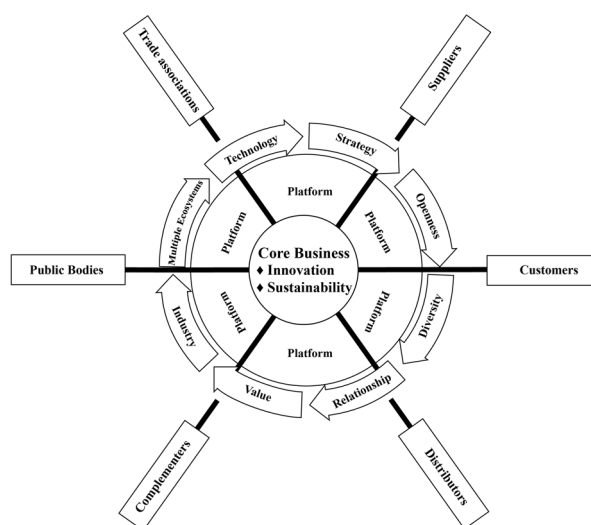


Figure 1. Ecosystem business model framework based on sustainability and innovation (source: authors)

Level 1 – Core concepts. The core concepts of innovation and sustainability form the basis of this framework. According to Moore (1993), an innovation ecosystem refers to companies and entities that share technology and knowledge to develop new products and services. Most start-ups own innovative technologies that are essential enablers of the innovation the ecosystem is endeavouring to form (Lingens et al., 2021). From a business model perspective, sustainability has two features: Sustainability in adopting environment-friendly practices and, secondly, establishing communication across the value chain (Bocken et al., 2014).

Level 2 – Platforms. Platform plays an instrumental role in the global economy, and it represents an essential component of firm value creation that encourages scholars of strategic management (Eisenmann, et al., 2011). This study proposes a platform-based business model that creates value by facilitating the exchange of information between two or more groups (Shaughnessy, 2016). Furthermore, the platform establishes contact and connection between various stakeholders, such as between customers and the organization. Existing literature on platforms reveals two types of platforms, open and close. Open platforms accept the active participation of outside firms in creating value for customers (Eisenmann et al., 2009).

Level 3 – Dimensions. This level relates to the internal environment of an organization. A business ecosystem is built around various dimensions to create value for the enterprise and customers alike (Davidson et al., 2015). Organizations should design their ecosystem

business models keeping in view the eight-core dimensions (Burton, 2017). The orchestrator or core firms play a critical role and serve as vital decision-makers in the ecosystem (Dattée et al., 2018). Each dimension covers an essential aspect of business ecology. An organization's ecosystem strategy, openness, diversity of the system, relationships among participants, and technology serve as the most crucial aspects for decision-making in devising a value-based ecosystem (Burton, 2017).

Level 4 – External environment participants. The players mentioned in this level serve as the backbone of the ecosystem and complement the value of the core firm. According to Nambisan and Baron (2013), the ecosystem environment offers opportunities for organizations by enabling them to tap into novel markets or produce novel products. Furthermore, this also allows firms to access a joined pool of resources and competencies. Ecosystems are less hierarchical than supply chains, yet, on the other side, they need some hierarchy and direction to assure the arrangement of players towards the value proposition (Autio & Thomas, 2020). Connections among players are unquestionably a foundation and deal with money or goods and control (Adner, 2017). In this proposed model, all the internal participants in an organization ecosystem are linked to the external participants. The interconnectedness leads the ecosystem to innovatively serve the customer.

2. Methodology

A study conducted by Kindström (2010) also reveals that universities and researchers tend to collaborate with large firms rather than small to medium-size enterprises. Consequently, executives of large firms have influenced the business model literature over time to a considerable level. This trend is also identified through the research conducted by Osterwalder (2004) or Gassmann et al. (2013). On the other hand, small business management systems and managers are often under-represented in the business model literature. Consequently, the practical side of the business model application is largely dominated by research institutions in big organizations. Furthermore, qualified managers pinning articles about the business model application in the popular business press have many instances. The more ubiquitous literature contains a plethora of ideas from managers beyond those within the academic literature. In comparison, the voices of small to medium enterprise owner-managers concerning business models are only seldom represented in the literature, endeavouring ground for an independent contribution to be made within the purview of the present investigation.

Following a mixed approach of purposive sampling and convenience sampling techniques, the authors identified and conducted semi-structured interviews with 10 potential candidates of different organizations from a population of 280 small-medium organizations within the Ülemiste City between August-November 2021.

Furthermore, organizations at a loss or dormant were also eliminated, as it is hard to predict the sustainability of a static or negative profit organization. These organizations are not sustainable in the long run, as it is evident that their business models have failed to produce desirable results for their stakeholders. Similarly, out of the profitable companies, organizations were filtered out based on the business field or industry and considered traditional contributors to smart cities and ecosystems such as information technology, engineering, energy, and business management organizations.

The organizations were divided as per the Estonian Classification of Economic Activities Categories were clustered into J, C, D, M, Q, N, E (Centre of Registers and Information system, n.d). Valuing safety and privacy concerns by all the organizations, their responses have been labelled anonymously. Contrary to the scholarly work by Osterwalder (2004), the respondents in this study are not provided with a pre-designed framework; hence, the findings of this paper are more inductive in essence.

2.1. Description of Ülemiste City ecosystem

Ülemiste City is an international and diverse environment centered on the notion of building a knowledge-based functioning, growth and living environment. The city is a model for attracting talents and promoting every community member's competitive skill globally. Approximately more than 12,000 people are working, studying and living in the Ülemiste City community. Business and talent services help aspiring businesses improve and grow. Furthermore, more than 20 local and international universities are associated with Ülemiste City, promoting and nurturing talents, improving the work environment, and supporting collaboration between students and organizations. Ülemiste City Radar is a collaboration between Ülemiste City and the Estonian Entrepreneurship University of Applied Sciences, which measures the progress of the growth environment of Ülemiste City. The vital goal of Ülemiste City is to create an atmosphere for the talents to accomplish. For the talents to grow, they need encouraging surroundings that offer essential services, possibilities for personal development and cooperation projects, entertainment, and a green city space to feel good (Ülemiste City, 2021).

3. Data analysis and results

As the nature of the research is evidence-based exploratory analysis, instead of emphasizing and connecting the conceptual framework formulated during the literature review with the interview responses, it is important to focus on the output that emerges from the interview conversations of the respondents. Therefore, themes are derived and identified from the raw content of interview conversations. All the interviews were recorded and transcribed, and the materials which were later coded and analyzed using Nvivo software suite. The codes were

compiled into a draft with reference to the findings of the research questions.

3.1. RQ1: How are business models perceived, conceptualized and used in different organizations?

To understand whether respondents understand the term business model and implements it in their organizations, the authors proposed questions to elaborate their understanding of the term business model as well as to describe their organization's business model. The following themes in (Figure 2) emerged from the content.

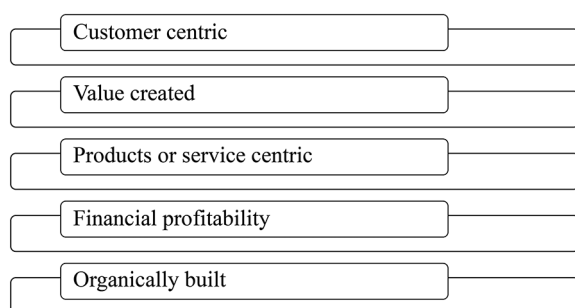


Figure 2. Themes emerged for RQ1 (source: authors)

All the respondents were aware of the term 'business model' even though there has been difficulty expressed by few respondents in explaining or defining, as the term business model itself is a wide topic with different point of views. Most of the respondents considered the business model as the process or activities through which financial profitability or business purpose is achieved. While describing the organization's business model, as there were organizations belonging to different business sectors, different pattern of themes emerged based on their implementation. All the organizations have an organically built business model based on their business ideas and purpose.

Most organizations have service- or product-oriented business models, as they offer subscriptions, packages, or even provide a combination of services and products to add value to the customer. As manufacturing organizations had their business models conceptualized based on the products, certain organizations in the field of information technology also had their business model's application based on the product they offer. Respondents focusing on customer-centric business models considered that the key factor their business revolves around is not only the customers, but the human-centric approach. As an organization that recruits talent, the business focuses on the customer, the value created, and the value captured. A business model was not conceived for their business, as every aspect of their business organically matured to the current business model.

Similar approach is taken by an organization in the energy sector, as the product offered factors in technology innovation and sustainability, it thereby creates value

to the customer as well as the society. The same applies to organizations dealing with recycling and packaging, where the service they offer along with their product aims to create value. The respondents also emphasized the financial profitability of the organization as the business model concept is described to achieve the revenue stream as the goal. Notwithstanding, the description of the term business model was considered with more complexity; respondents highlighted the simplicity of the nature of their business model.

While they described the business model, there were several elements of services or products reiterated, as the conversation encouraged the respondents to conceptualizing their business model which were not perceived in the same way as before. Respondents took into consideration their key activities, revenue streams, target markets, value propositions, and their resources. The description of respondents conceptualized towards a more dynamic approach to business model. The implementation of the business model concept in the organization is more organic in nature as respondents indicated towards not using any preconceived assumptions and described it as considering their business model to grow or develop organically, as their business ideas were conceptualized. Different perspectives on the description conglomerated and aligned with the definitions of business models previously researched.

To summarize, the result of RQ1 clarifies that respondents based on their role in the organization made it evident that they had good awareness of the term business model, as they were able to elaborate the logic behind it and were able to associate the idea with different components of business models such as revenue and financial profitability, process and activities, customer, service or product-centric elements, value proposition as well as the purpose it fulfils to achieve. It also came into notice that not all organizations conceptualized a preconceived business model concept. The perception of business model was used as logical connection of the components that describes the organizations plan in achieving the goal and develop organically.

3.2. RQ2: What are the factors that leads them to create or transform their business model?

There are several internal and external factors that lead organizations to create the business model or transform it. However, the factors pertained do not necessarily lead organizations to make a complete change or transformation in their business model, but only to the extent of evolving the business model. The questions posed in the interview that guide towards RQ2 also identify the vital components of the business model, the factors that prompted the changes, and key performance indicators used to measure efficiency. Themes emerged for RQ2 are as shown in the next figure (Figure 3).

Responses to the question of whether their business model has ever been transformed or evolved are shown in Table 1.

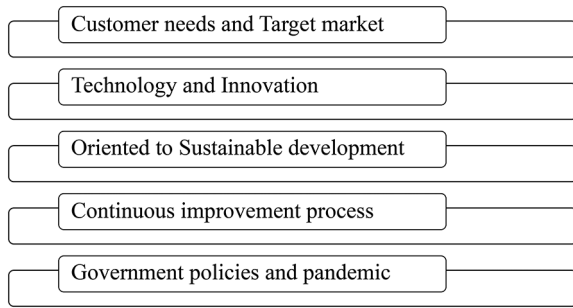


Figure 3. Themes emerged for RQ2 (source: authors)

Table 1. Responses of interviewees on whether the business model has transformed (source: authors)

Name	Resp.	Observations
Respondent A	No	After discussing further with the respondent, there has been few transformations in revenue stream and services offered.
Respondent B	Yes	The principal service has not been changed, as the change is only possible based on policies, but the organization has come up with other products and services.
Respondent C	No	The principal service has not been changed, has been influences in transformation as per innovation, environmental aspect, as well as target markets.
Respondent D	Yes	Constantly transformed and evolved based on the situations.
Respondent E	Yes	The business model has transformed as they introduced more subscription packages apart from other services.
Respondent F	Yes	Continuous process as the market and demand change rapidly.
Respondent G	No	The basic business model has not transformed, but has been influenced by technology, innovation, and sustainability.
Respondent H	No	Principally, there are no changes in the business model, but the complexity and spectrum of services have broadened.
Respondent I	Yes	Constant transformation based on the economic landscape and market demand.
Respondent J	No	The core remains the same; only the technology has been updated based on the requirement.

Although the responses are equally distributed, most of the respondents were asked further questions to provide an insight into the transformation of business model. Respondents with the answer “No” further explained as to how the vital components of the business model has transformed. In the case of Respondent A, the business model is human-centric as previously mentioned, and the organization has curated a software system to organize the work flow and this particular product is considered as a potential revenue

stream that can diversify the organization’s business model. Similar case scenario is in place with other organizations as well.

Considering the themes emerged as the factors that prompted change or transformation in their business model, customer needs and target market was emphasized by several organizations. As there are rapid and inevitable changes in the market, customers’ needs and issues are constantly undergoing changes, this not only paves way to new products and services, but also prompts changes in the process to deliver the product. As there are technical upgrades not only in the field of information and technology, but also in other sectors such as manufacturing, technical solutions have forced companies to be more innovative in the product and services, as well as the process implemented. Innovation and technology have also prompted an increase in the level of expertise and talent within the organization, thereby influencing the business model. Several organizations have made changes in their business model based on sustainable development, to be precise, green, and clean energy. Certain organizations are working as an agent to promote more sustainable-oriented products and services. Organizations have factored in their changes to the government policies, economic landscape, and even the pandemic, as their process, product or services has transformed to another level. Most organizations understand that the form of transformation is a continuous improvement process, as they are constantly evolving based on these factors.

“Because the market is changing in this area very rapidly. So, we have to change together with the market and the demand.” – Respondent F

“...it’s like a continuous process of this change, we are adapting to the change.”– Respondent I

Organizations had different key performance indicators to measure the internal efficiency, profitability, satisfaction rate, etc. and it leads to the evaluation of their business model. The most common key performance indicators used by organizations were traditional methods of feedback, customer satisfaction, time consumption, billable hours, net promoter score, revenue generated, sales made, reference score, marketing insights, employee satisfaction, and trade working capital. The result of their key performance indicators supported the organizations to understand the room for improvement. This also leads them to understand where the changes need to be made in their business model.

To summarize, the theme that emerged in this section iterates the internal and external factors that lead an organization to create and transform their business model. Also, the insights provided through the key performance indicators to an extent has played a part in understanding the knowhow of making changes in the business model.

3.3. RQ3: How ecosystem perspective can guide business model design?

The involvement of organizations in the business ecosystem and the deciding factors in joining the ecosystem were explored to understand the initial motive or trigger for these organizations. As the Ülemiste City business ecosystem is also constantly evolving and accommodating more developments, the participation of organizations can illustrate the impact it has made in their business model. Respondents were asked about the major benefits for the organizations being associated with the ecosystem and the interconnectedness between other organizations to build partnerships and network within the ecosystem (Figure 4).

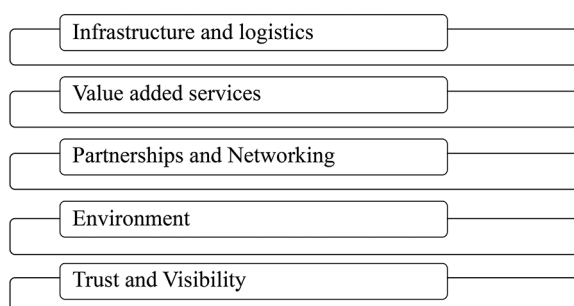


Figure 4. Themes emerged for RQ3 (source: authors)

Few respondents considered the Ülemiste City ecosystem only as an office space with different facilities. The logistics and infrastructure of the ecosystem is explored based on the rent, parking facilities, meeting rooms, proximity to the airport and railway. Whereas most of the organizations have accessed the health care services and partnered with other organizations within the city. Organizations were able to partner with multiple organizations and coordinate most of their work within the ecosystem as they have access to key resources required for their business model within the ecosystem. Few organizations have also availed the knowledge hub features such as training programs and webinars conducted by Ülemiste City. The ecosystem environment has attracted the employees as well as customers for several organizations. Regarding trust and visibility factor, relatively new organizations were able to explore the pertained factor, whereas for existing organizations, well-positioned in the market considered it currently not necessary to explore those aspects. However, some organizations were keen on being in an environment or ecosystem that validates the quality of the participating organizations as they can increase the chances of potential partnerships.

“I think earlier when they know that you’re from, you’re in the city, then the conversation opens up easily, like they’re ready to have a conversation with you, with the organization. So that way it has influenced, like being in this place has great influence” – Respondent A

“..And to move the HQ in Ulemiste City, basically, it was to get closer to the tech ecosystem. I mean, if you want to attract people, it is easier to get them coming to the site, and this proximity to potential partners, stakeholders, engineers, etc. And, of course, it is much more convenient for us as a company to be there, because the infrastructure is much better” – Respondent G

Considering the positioning of organizations within the ecosystem, the authors made observations to categorize them into different groups. Group 1 – Organizations which were able to benefit from the ecosystem, these are mostly industry specific organizations which are unable to find potential target market or visibility through the ecosystem. But they are able to partner and avail services offered by other organizations within the ecosystem such as talent recruitment, healthcare, accounting and book-keeping, marketing rental services and so on. Moving forward, Group 2 – organizations who were able to provide services in the ecosystem, these are primarily organizations with a wide spectrum of target market without industry specific criterion. Talent recruitment and HR network organizations are able to provide services to several organizations ranging from small to large size companies within the ecosystem. Healthcare providers can greatly benefit from the entire business community in the ecosystem. Group 3 – these are organizations which are mainly positioned in Group 1 or 2, but they are able to also avail as well as provide services to a certain extent. Even though they predominantly position themselves in one group, they still have the opportunity to be in both categories. The nature of this categorization shows the opportunity an organization has in partnerships and networking within the ecosystem. As certain organizations initially declined any involvement or participation in the ecosystem, and merely considered it as an office area, they were also able to pinpoint the partnerships and services within the ecosystem.

Most of the respondents were of the opinion that the organizations within the ecosystem are not as interconnected as it should be, as the organizations are still unaware of other companies in the ecosystem. Respondents even mentioned that organizations as well as the business ecosystem orchestrators should be more active in building and bridging the gap in connectivity. A platform that can link them and bring organizations closer may successfully create more opportunities within the ecosystem.

3.4. Conceptual framework connecting business model and ecosystem

Based on the evidence-based investigations conducted in this research paper, the authors propose a detailed framework (Figure 5) encompassing critical components of a diverse business ecosystem environment. The framework places an organization business model at the core of the entire map. Prior to participating in the ecosystem, a business should have a core business model that fulfils the purpose. The core of the framework is fashioned

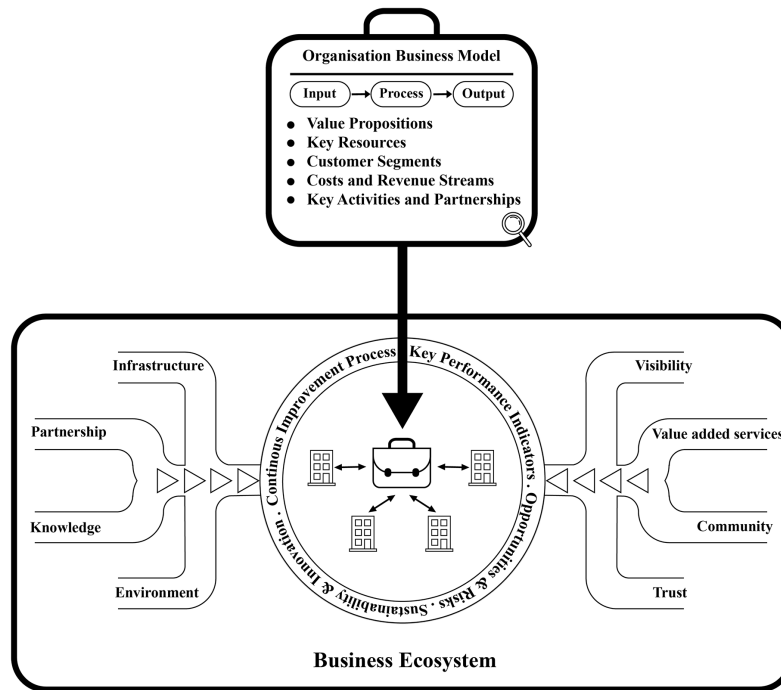


Figure 5. Conceptual framework connecting business model and ecosystem (source: authors)

similar to previously researched traditional business model by deploying inputs in the form of human, material, or combined resources leading to the process undertaken by the organization that converts into output or outcomes in both product or service terms. The outputs of an organization can also be a contribution to the ecosystem in a different perspective. Considering the themes emerged from RQ1 and the previous researches on business models, it is pertinent to mention that an organization conducts the primary business function, keeping its value proposition, essential resources, customer segment, cost and revenue stream, key activities, and partnerships. Therefore, the concepts mentioned are integral and depend on the business model that aims to become a part of a broader business ecosystem environment. Organizations should be able to set their boundaries and set the degree of openness to be able to collaborate well with other organizations within the ecosystem.

As revealed in the literature review and the detailed investigation conducted as part of this study, it can be deduced that for an organization to become a part of a broader business ecosystem, a platform well designed, developed, and orchestrated can act as a bridge. A platform is a mechanism backed by technology that facilitates the seamless flow of information between the organization and its external environment and enables an organization to communicate with its customers to capture their value and communicate with suppliers, distributors, and other network partners in effectively creating value. Recognizing the vital role of a platform in today's digital business economy, this framework places the platform at the core of the business model to enable seamless communication and connectivity for all stakeholders.

Furthermore, 21st century businesses are evolving at a rapid pace. As a result, new concepts relating to improving business processes are taking place at a fast pace. Emphasis is laid on enhancing the performance of the business to cater to the demands of changing times. The framework recognizes the role of improvement in creating value for customers. Therefore, continuous process improvement and measuring the achieved results of an organization against perceived goals and objectives is considered integral. Considering the themes emerged from RQ2, continuous improvement process is an intrinsic component that can gain support from both the organization and the business ecosystem. Moreover, RQ2 also specifies the cornerstone importance of key performance indicators for an organization to compare obtained results and optimize. Considering the business ecosystem, the efforts of evaluating the key performance indicators can overcome challenges faced by organizations in surviving abrupt changes in the market by co-evolving as stated in the previous literatures. Sustainability and innovation are crucial drivers behind modern business success, and as the ecosystem environment is sustainability oriented and motivated by technology innovation, organizations taking part in the ecosystem also tends to be aligned to the same. An organization capable of exploring new opportunities and recognizing the risks to its existence can better lead and survive in today's competitive business environment. Hence, these 4 characteristics are common to business model as well as the ecosystem. In today's age of globalization and increased interconnectivity among businesses and stakeholders, business models have evolved to accommodate the new changes. Companies today are more connected among

themselves and with their customers than ever before at any point in history. The connectivity is a result of advancements in technology and changing customer values. The factors that influenced organizations to the ecosystem as well as the benefits of the ecosystem evaluated in the research point towards the 8 characteristic benefits of the ecosystem. Carefully observing the responses of the interviewees in the Ülemiste city on the base of RQ3 and realizing the dynamics of changing times, the ecosystem funnels in high technology infrastructure, opportunities for partnership with other companies, a knowledge hub with different training and conference options, an overall environment focused on sustainability and innovation, the ability to incorporate into a community which is designed to match the requirements of the organization, visibility and self-marketing opportunities, and trust factor with a quality stamp, reputation and prestige of being in the ecosystem, as well as all the value added services offered in the ecosystem. For small to medium size organizations, the authors were able to understand that the business models are mostly organically built or constantly improving and transforming. This continuous process can support organizations to capture value and become more sustainable. To summarize, the proposed conceptual framework factors in key characteristics of the ecosystem in the organization's business model.

Conclusions

The research explored the business model perception and conceptualization of organizations from different industry belonging to the business ecosystem, Ülemiste City. The study focused on small to medium size organizations as the diversity of organizations created substantial challenges. Through the interview process, it was revealed that all the respondents were aware of the term business model, though it was complicated to define and describe generally, but every respondent was able to describe their business model by logically connecting all vital components and pointing out the process and purpose. Respondents highlighted that their business models are customer-centric, product or service-centric, follow the process to create value and achieve the financial profitability. It was also established that most of the business models were organically built and developed.

There were several factors indicated by the respondents which led the organizations to create and transform their business model. Major factors included customer needs and target market, technology and innovation, sustainability, government policies and continuous improvement process. The research also explored the ecosystem perspective of business model design by investigating the deciding factors of participation in the business ecosystem, the positioning of the organization within the ecosystem, and benefits of the organization availed while being in the ecosystem, as well as the interconnectedness of the organizations. Most of the organizations considered

infrastructure and logistics as the major factor as that gives them the necessary facilities required and the logistical proximity of the ecosystem. Value-added services provided in the ecosystem was iterated repeatedly. The overall ecosystem environment was also considered as a major employee satisfaction benefit. Partnerships and networking were mentioned as benefits, but the complexity around that suggested some active initiatives has to be taken by both the organization as well as the ecosystem orchestrators. Trust and visibility were highlighted by organizations, as organizations have experienced a validation of quality stamp and prestige in being a part of the Ülemiste City ecosystem. The conceptual framework connecting business model and ecosystem presented accommodates all the key characteristics explored in the research. The heterogenous nature of organizations posed a challenge in generalizing the implantation of business model. For future research, the interconnectedness of organizations can be further explored and evaluated to propose a solution in orchestration, and platform-based solutions can also be explored by evaluating the interest of organizations to collaborate.

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