THE BUSINESS MODEL TRANSFORMATION OF SHORT-FORM VIDEO ENTERPRISE BASED ON BUSINESS MODEL CANVAS: A CASE OF KWAI

[1]ZONG-JIE DAI, [2]WEN-HONG CHIU, [3]HUI_RU CHI, [4]PEI-KUAN LIN

[1]Ph.D. Candidate, Department of Business Administration, Asia University, No. 500, Lioufeng Rd., Wufeng, Taichung 41354, Taiwan
[2]Associate Professor, School of Political Science and Law, Jiaying University, China, No. 100, Meisong Road, Meizhou, Guangdong, 514015, China
[3]Assistant Professor, School of Political Science and Law, Jiaying University, China, No. 100, Meisong Road, Meizhou, Guangdong, 514015, China
[4]Assistant Professor, Department of Business Administration, Asia University, Taiwan, No. 500, Lioufeng Rd., Wufeng, Taichung 41354, Taiwan
E-mail: [1]zongjiedai@hotmail.com, [2]andychiu101@163.com, [3]kittychi101@163.com, [4]linpk@asia.edu.tw

Abstract - The rapid development of short-form video is a vital topic worldwide. Clarifying the business model transformationof short-form video enterprise has both theoretical and practical significance. Based on the nine elements of business model canvas, this research tried to explore how China's first short-form video producer Kwai became one of the market leaders in the competitive environment. This research adopts an in-depth single case study as the research method. According to time series analysis, the development of Kwai can be divided into 4 stages (2011-2021). Important milestone events are chosen to emphasis the business model transformation of Kwai, and the nine elements shows different characteristics in each stage. Finally, four business models as well as how Kwai creates value are summarized. This study contributes toprovide a holistic perspective on the evolution of business model transformation. Moreover, it provides new ideas based on the business model canvas and nine elements for business model transformation and innovation.

Keywords - Kwai, Short-form video, Business model canvas,Business model transformation,Business model innovation

I. INTRODUCTION

With the development of mobile internet technology and popularity of social media Apps. People share their personal life and interests with people from different culture.The most intuitive way to share is by taking short-form video clips and share them on those short-form video Apps. The short-form video industry has also experienced rapid development in recent years, both worldwide and in China.With the advent of 5g era, the application scenarios of short-form video and live broadcast will be more extensive. Short-formvideo and live broadcast applications will also become the fastest-growing platform applications and create great value.

Most research on short-form video industry mainly focus on those most famous companies in the world, such as Tok-tokandInstagram.After recognizing the threat of competitive erosion, the company usually turns to focus on the company's business model transformation strategies (Aspara et al., 2011).Therefore, it is of great practical significance to study the business model transformation behind short-form industry. Recent research adopted business model canvas framework to analyze the innovative variables that lead to competitive advantages and communicate with external stakeholders (Gupta & Bose, 2019; Vaska et al., 2021). Qualitative case studies can be used to conduct in-depth and stringent experience of specific phenomena by studying a certain "case" in the context (Onghena et al., 2018). In addition, focusing on the benchmarks enterprises that have been thriving from the start will help you gain a deep and complete understanding of the whole industry. Therefore, this study selected Kwai (Kuaishou), the third largest short-form video veteran enterprise in China, as the research case. Previous research mainly focusses on how business model innovation as a key to service infusion; but few conduct detailed research on business model transformation (Witellet al, 2013). Based on the analyzing of business model canvas, this research adopted a single case study method and tried to investigate how Kwai became one of the market leaders in the competitive environment. Finally, the transformations of business model of Kwai and how it creates values are summarized.

This research can be divided into four parts. Previous literatures related to business model, business model canvasand value creation aresummarized. This study adopted single case study and time series method with evaluating the reliability and validity. The business model transformation of Kwai is presenting to show the analysis results of this research. The last part is the conclusion.

II. LITERATURE REVIEW

Business model innovation

Business model has been defined as the conceptual tools containing a set of elements and the relationships to express business logic of specific

firms (Witell et al., 2013). It descriptscompany and its partners on how to create, market, and provide value-added services and maintain revenues (Osterwalder & Pigneur, 2013; Baber et al., 2019). Although previous literatures have already provided definitions of business model, the most widely accepted definition is that the business model as stories explain how companies operate (Magretta, 2002; Gao, 2021).Business model can be described as a mediation structure between technology and economic value, which is a result of converting digital applications into gradable profits(Chesbrough, 2002; Reim et al., 2020).Moreover, business model has three main features, including keystones-value creation, value delivery, and value capture (Reim et al., 2020).Business model innovation can be described as the development of new business model and continuation of current business model(Chesbrough, 2010).Business model includes several features, including value propositions, market segmentation, commodity and services, cost structures and profits, suppliers and customer relationships, potential competitors, and competitive strategies (Kraus et al., 2020). In recent years, business model innovation has received increasing attention in management research and practice (Foss &Saebi, 2016).There are four categories of business model innovation influential factors including cognitive, managerial, environmental, and relational factors (Minatogawa et al., 2018).

Business model canvas

The concept of business model canvas is focused on identifying the operation and development of corporate entities, as well as new growth points based on its development of sustainable enterprises in the long run (Dudin et al., 2022). Previous research on business model canvas tried to indicate that the business model consists of nine construction blocks, namely customer group, value proposition, channel, customer relationship, customer relationship income stream, critical resources, key activities, key partnerships, and cost structures (Osterwalder et al., 2010; Das et al., 2020). The nine blocks of business model canvas represented by four dimensions, including "value proposition", "customer interface", "infrastructure management" and "financial aspect" (Osterwalder et al., 2010; Das et al., 2020).Business model canvas has been widely used in strategic reconstruction and roadmap entrepreneurship, innovation, and business research, etc. (Keane et al., 2018; Das et al., 2020). Business model canvas is a visualization tool that promotes innovation and explores potential business models in a systematic perspective, and highlights its value creation (Joyce & Paquin, 2016). Moreover, it can be mapped to the business transformation of industry 4.0 companies in accordance with the elements of the business model canvas (Das et al., 2020).Based on previous literatures, the descriptions, and constructions of nine blocks of business model canvas are illustrated in Figure 1.

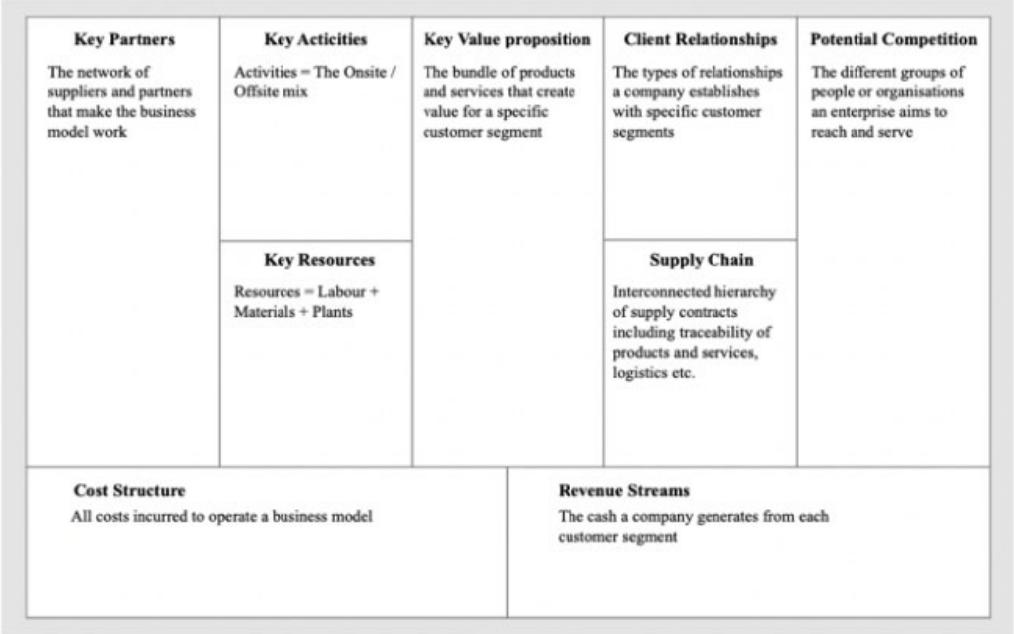


Figure 1. Descriptions, and constructions of nine blocks of business model canvas (Osterwalder et al., 2010; Das et al., 2020).

Business model transformation

Business model transformation represents logical changes in value creation, delivery, and capture (Frishammar&Parida, 2018). The transformation to the new business model will propose several practical and strategic issues (De Reuver et al., 2013; Das et al., 2020).One of the main challenges of business model transformation is the information exchange among different phases of the product - service life cycle(Schuh et al., 2015). In the business model

transformation process, the company is obliged to shareholders, as well as people involved or affected by the transformation, such as workers, shareholders, governments, customers, providers, communities, etc. (Hernando Cuñado et al., 2020).There are five core elements related to business model transformation, including product/service causation, product/service effectuation, value network causation, value network effectuation, value deliverycausation, and value delivery effectuation (Baber et al., 2019).

By systematically reviewing the previous literature, this study finds that the business model canvas is suitable to analyze the transformation and innovation of enterprise business models, and then create value. Enterprises can adjust the various components and elements of the business model in a targeted manner. Therefore, the theoretical framework of this case study is shown in Figure 2.

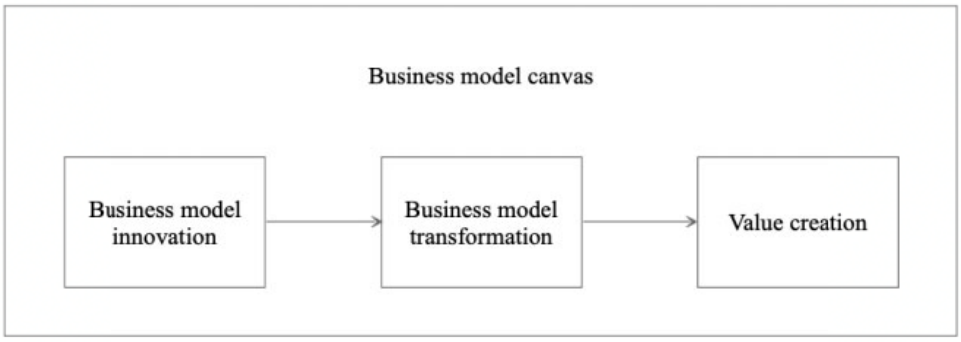


Figure 2. Theoretical framework

III. METHODOLOGY

Research method

This research adopts “single case study” (Yin,1994) as the research method.This study focuses on the application of the “Business Model Canvas” as a method to analyze business model innovation and transformation, identifying the impacted elements. The exploratory case study method has the properties of phenomenon-driven or problem-driven, which can help researchers to deeply seek the theoretical logic of "how" and "why" behind the research problem. Compared with multi-case studies, longitudinal single-case studies are more suitable for grasping the context of the development of events and are easy to inspire researchers to extract procedural empirical laws.According to time series analysis, the development of research case of Kwai can be decided into 4 stages (2011-2021).Important milestone events are chosen to emphasis the evolution of Kwai, combining with the analysis of business model.

Introduction of Kwai

Kwai (or "Kuishou") is a world-leading video platform, providing everyone with the service of recording and sharing their lives, with more than 250 million content creators. Founded by Beijing Kuaishou Technology Co., Ltd. in 2011, Kwai has become one of the top three most popular short video apps in China. On January 9, 2020, the Hurun Research Institute released the "2019 Hurun China Top 500 Private EnterprisesLists", and kwai ranked the 50th.In addition to rapid user growth rate, Kwai also has highDAU/MAU ratio which is close to 48.3%, as well as long user retention time (average monthly usage time exceeds 20 hours), and high retention rate (7-day retention rate). Compared with the competing product "Tok-tok", Kwai’s traffic concentration rate is lower,and users are closely connected.The development and construction of Kwaican be divided into four stages, including “Start-up stage”, “Difficult transition stage”, “Steady development stage” and “Explosive growth stage”, which are summarized in Figure 3.

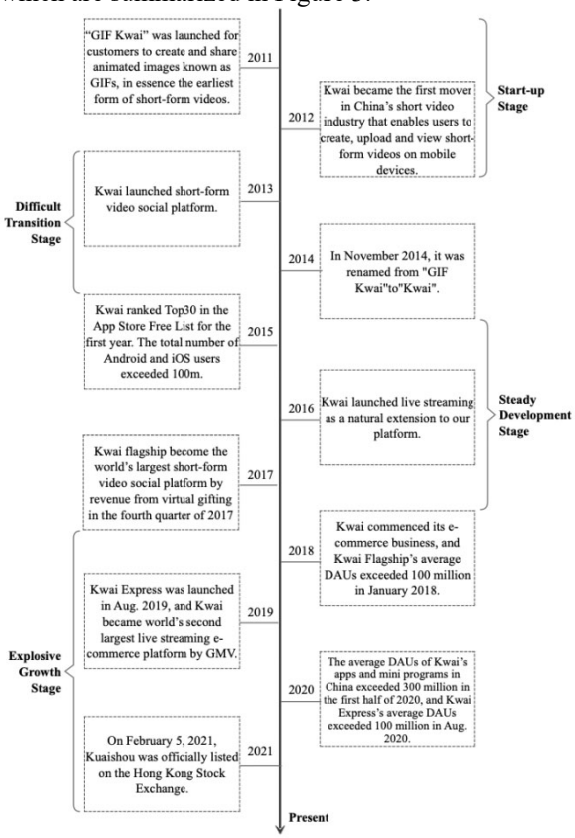


Figure 3. Development and the construction stages of Kwai

Data collection and analysis

In data collection and analysis, the secondary data analysis method was adopted to collect the case data. The sources of data are mainly from in-depth interviews, participatory observation, internal and external data sources (2011-2021). Data source of in-depth Interview include interviews with 6 board members, senior managers, and executives in Kwai. The detailed information is presented in Table I. And the other data sources are concluded in Table II. The secondary database of the study includes: (1) Kwai official website (latest news), newspapers and magazines: to collect related reports on newspapers and magazines. (2) Published journals (3) Google scholar website: to collect relevant research on Kwai. (4) Other database websites: for example, qcc.com

This study classified and marked the collected data, sorted out the events of Kwai's business model innovation, and conduct time series analysis. Combined with the description of the business model elements in the previous literature, the collected data is specifically analyzed, classified, and coded according to Kwai business model innovation, transformation, and value creation.During the initial stages of data analysis, data coding scheme was developed, including identifying key constructs, core processes, and core logic between constructs. In the coding process, the theoretical framework and coding scheme are mainly combined to identify key constructs, some of which come from previous research.

Categories	Sources	No.	Coding
In-depth interview (KI)	Middle and senior managers of Kwai	6	KI-1 to KI-6
Participatory observation (OM)	Kwai company headquarters	6	OM-1
Internal data sources (DS)	Kwai official website Newspapers and magazines	33 45	DS-1 DS-2
External data sources (ED)	Published journals and reports Google scholar Other database	12 36 25	ED-1 ED-2 ED-3

Table I. Core content of Kwai in-depth interview

Interviewee	Length /mins	Times	Coding
CEO	120	2	KI-1
COO	90	1	KI-2
Senior Vice President	90	3	KI-3
Social Media Specialist	150	5	KI-4
Marketing Manager	90	3	KI-5
Executives	180	6	KI-6

Table II. Data collection and coding

Reliability and validity

This study focuses on the assurance of reliability and validity in research design, data acquisition and analysis stages. Preliminary understanding of the situation of enterprises through secondary data, including academic journals, official media platforms, industry websites and public annual reports of Kwai. The multi-sources data acquisition approach improves the construct validity. In addition, the research team simultaneously understands the relevant theories that are conducive to explain the phenomenon of the case to improve the external validity. Moreover, this study adopts a combination of in-depth interviews and observations, and the interview plansareprepared in advance to ensure the objectivity and authenticity of the data collection.

IV. CASE ANALYSIS ANDFINDINGS

According to the evolution of Kwai's development stage, this study divides Kwai's business model transformation into four stages, the start-up stage from 2011 to 2012, the difficult transition stage from 2013 to 2014, the steady development stage from 2015 to 2017and the explosive growth stage from 2018 till now. This study will adopt the “Business Model Canvas” to analyze the different characteristics and elements of business model at different stages.

Start-up mode (2011-2012)

“Kwai” was founded by Cheng Yixiao's team in 2011. The entrepreneurial team has a total of 4 people.In the period of GIF Kuaishou, with the help of the spread of GIFs on Weibo, the product has reached tens of millions of monthly activities. In 2012, GIF Kuaishou received a $300,000 angel round of investment from Morningside Capital Zhang Fei, holding a 20% stake (Zhang Fei was looking for a project in the "mobile + camera" field at that time). At the end of 2012, GIF Kuaishou was transformed from a tool to a video community, but it encountered a development bottleneck. First, the content on Kuaishou is too simple, and there are mainly three types of users senario: beautiful women, children, and pets. Second, the poor management of start-up team and the failure of expansion.

Key value - "GIF Kuai Shou", focusing on low-end users

Clients' network–low-end GIF users, cooperated with Weibo.

Activity and resource – a GIF tool for generating animations.

Revenue and cost- a $300,000 angel round of investment; labor and server update costs.

Difficult transition mode (2013-2014)

In 2013, team reorganization was carried out, 50% of the equity was given to the new team, and a clear division of responsibility was conducted. After the

adaptation and difficult transition of team reorganization, one team mainly focused on internal matters such as products development and operations, and the other team was responsible for machine algorithms and external affairs. After the teams were combined, “GIF Kuaishou” received a funding of million dollars from Morningside Capital and Redshirt Capital. In the end of 2013, the company launched short-form video social platform.On this basis, it developed products and services which conform to the core values and build a community with a correspondingatmosphere. The recommendation algorithm was applied to content distribution (rather than chronological distribution), and the user experience improved significantly, as well as the number of users and DAU increased rapidly. In 2014, "GIF Kuaishou" was renamed as "Kwai".

Key value -"GIF Kuaishou" was renamed as "Kwai" and established the underlying values of "inclusive and fair".

Clients' network– users in short-form video social platform.

Activity and resource– provide content to users in the short-form video platform with advanced technology.

Revenue and cost -a funding of million dollars from Morningside Capital and Redshirt Capital;Research and development expensesand platform operation cost.

Steady development mode (2015-2017)

From the year 2015 to 2016, there were no competing products like Kwai. Its growth strategy was relatively moderate. The company’s focus was on product polishing, and there was almost no market operating. Products threshold naturally grow to 40 million DAU and 110 million MAU. The team composition is very simple with a hundred people. There was little commercialization during this period. However, Tik-Tok, which is a competitor of Kwai, was launched at the end of 2016, and the growth momentum is very fast. To cope with the competition, Kwai changed the previous natural growth strategy, and began to increase market launch, establish APP matrix, and invest sources to form overseas teams.At the end of 2016, the company began to build commercial China and Taiwan.In April 2016, the live broadcast function was launched, and a small amount of income was obtained by relying on virtual gifts rewarded by users. In 2016, Kwai was still in a state of loss.In 2017, Kwai began to increase the recruitment of professional managers and expanded many operating personnel.Kwai flagship become the world’s largest short-form video social platform by revenue from virtual gifting in the fourth quarter of 2017.At this stage, the main features of Kwaiare using short videos as the information carrier; using algorithms for content recommendation; decentralized UGC community; low threshold and easy to use; light operation, do not disturb users, and the platform does not actively contact creators and creators. External agency; neutral, no leaderboards, no labels for users.

Key value -"focusing on ordinary people".

Clients' network -A short video community that records and shares life and prioritizes creators over consumers.

Activity and resource - launched and improved related products and technical capabilities for commercialization.

Revenue and cost -Mainly R&D cost and operation cost.

Explosive growth mode (2018-present)

In 2018, the revenue of Kwai was 20 billion yuan, most of which came from live broadcast rewards. From 2019 to 2020, Kwai changed the development strategy and set a goal of breaking 300 million DAU before the Spring Festival in 2020, and responded in terms of products, community operations, teams, and commercialization. Kwaimade major adjustments in team building, user growth strategy, operation mode, and commercialization.In terms of products, it launched the "Kwai Express Edition", which is mainly aimed at the sinking market. Compared with the main website, the functions and interface are more concise. It adopted a single-line feed stream and uses “Red Pocket” to attract new users. Its user growth rate was much faster than that of the competitor products. In terms of team management, Kwai continued to introduce talents people in operation, commercialization, and R&D, and implement OKR assessment for employees. In terms of operation, Kwai launchedseveralcreator supporting plans to explore various types of content and commercialization is accelerated. In addition to live broadcast rewards revenue, the company had set a higher growth target in terms of advertising revenue and live broadcast e-commerce.To achieve the goal of the K3 campaign, Kwai made unprecedented positive adjustments in recruitment, product strategy, content operation, and commercialization, including intensive airborne management and enrichment of operation lines. Kwai cooperated more openly with professional content institutions andachieved cooperation with at least 2,000 institutions such as MCN, media, self-media, and service providers.As the largest competitor in the market, Tik-Tok short video is oriented to consumer experience, allowing users to browse the most attractive content through “Algorithms + Strong Operations”. The user growth rate is very fast. In mid2018, Tik-Tok’s MAU and DAU had already exceeded Kwai. Kwai must take a more proactive and active attitude to deal with such fierce competition.

Key value -win the market competition.

Clients' network -fan Firstline, Kwai Open Business Platform.

Activity and resource - launched the "Kwai Express Edition" and commercialization is accelerated.

Revenue and cost -live broadcast rewards revenue, advertising revenue and live broadcast e-commerce; marketing and operation cost as well as labor cost.

V. CONCLUSION

Finally, the business model transformation and nine elements in Kwai's four development stages are summarized in Figure 4. The key elements of the internet short-form video business model consisted of four major blocks, including key value, client network, activity and resource, and revenue and cost.From the start-up mode to the difficult transitionmodethat faces and solves various problems, to the stable development modethat pays less attention to internal product development and innovation, and finally the explosive growth modethat survives in facing of fierce market competition, the business model transformation process of Kwai is illustrated in detailed.



	Stage 1: (2011-2012)	Stage 2: (2013-2014)	Stage 3: (2015-2017)	Stage 4: (2018-present)
Key Partners	Low-end suppliers	Low-end and middle-end suppliers	Brand and content suppliers	Professional content institutions
Key Acticities	A GIF tool for generating animations.	A short-form video social platform	Launched and improved related products and technical capabilities for commercialization	Launched the "Kwai Express Edition" and commercialization is accelerated
Key Value proposition	"GIF Kuai Shou", focusing on low-end users	Established the underlying values of "inclusive and fair".	The product positioning is "focus on ordinary people"	Win the market competition
Client Relationships	Daily updates	Users in short-form video social platform	A short video community that records and shares life Prioritize creators over consumers	Fan Firstline, Kwai Open Business Platform
Potential Competition	Other GIF tools	Other short-form video content producers	Tik-tok	Tik-Tok, Volcano and other competitors
Key Resources	Talent of management team	Technique team and advanced technology	Build a commercial center; Algorithms for content recommendation	Recruiting talented people in operations, commercialization, R&D
Supply Chain	Weibo	Social media suppliers	Brand suppliers Other platform suppliers	100,000 high-quality producers
Cost Structure	Server update cost and labor cost of management team	Research and development expenses; Platform operation cost	Mainly R&D cost and operation cost	Marketing and operation cost as well as labour cost
Revenue Streams	Almost no income A $300,000 angel round of investment	a funding of million dollars from Morningside Capital and Redshirt Capital	A small amount of income was obtained by virtual gifts	Live broadcast rewards revenue, advertising revenue and live broadcast e-commerce.

Figure 4. Kwai's business model transformation from start-up till present.

The contributions of this study are as follows. First, this paper provides a holistic perspective on the evolution of business model transformation. Secondly, it provides new ideas based on the business model canvas and nine elements for business model transformation and innovation. In addition, this paper also provides a method to analyze short video platforms by analyzing the content and events provided by short video platforms or the mode of content upgrading or commercialization. In fact, this case study shows that short video platforms should not be too aggressive and invest various resources in the development stage of the market exploration period but need to develop gradually. After accumulating enough investment, technical resources and optimizing the management team to gain more management experience, the explosive growth can gradually begin.

This study also has limitations. This study only analyzes the transformation of business model for a single case study and does not summarize the overall characteristics of the short video industry. This requires future research to compare and analyze multiple cases.

REFERENCES

[1] Aspara, J., Lamberg, J., Laukia, A., &Tikkanen, H. (2011). Strategic management of business model transformation: lessons from Nokia. Management Decision, 49(4), 622-647.

[2] Baber, W., Ojala, A., & Martinez, R. (2019). Effectuation logic in digital business model transformation. Journal Of Small Business and Enterprise Development, 26(6/7), 811-830. https://doi.org/10.1108/jsbed-04-2019-0139

[3] Chesbrough, H. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. Industrial And Corporate Change, 11(3), 529-555.

[4] Chesbrough, H. (2010). Business Model Innovation: Opportunities and Barriers. Long Range Planning, 43(2-3), 354-363.

[5] Das, P., Perera, S., Senaratne, S., & Osei-Kyei, R. (2020). Developing a construction business model transformation canvas. Engineering, Construction and Architectural Management, 28(5), 1423-1439. https://doi.org/10.1108/ecam-09-2020-0712

[6] De Reuver, M., Bouwman, H., &Haaker, T. (2013). business model roadmapping: a practical approach to come from an existing to a desired business model. international journal of innovation management, 17(01), 1340006.

[7] Dudin, M., Lyasnikov, N., Leonteva, L., Reshetov, K., & Sidorenko, V. (2022). Business Model Canvas as a Basis for the Competitive Advantage of Enterprise structures in the Industrial Agriculture. Retrieved 1 March 2022, from.

[8] Foss, N., &Saebi, T. (2016). Fifteen Years of Research on Business Model Innovation. Journal Of Management, 43(1), 200-227. https://doi.org/10.1177/0149206316675927

[9] Frishammar, J., &Parida, V. (2018). Circular Business Model Transformation: A Roadmap for Incumbent Firms. California Management Review, 61(2), 5-29. https://doi.org/10.1177/0008125618811926

[10] Gao, J. (2021). Business Model Evolution of Content Platform in Emerging Economy: A Case Study of Bilibili. American Journal of Industrial and Business Management, 11(08), 954-972.

[11] Gupta, G., & Bose, I. (2019). Digital transformation in entrepreneurial firms through information exchange with operating environment. Information & Management, 103243.

[12] Hernando Cuñado, J., Colvin Díez, J., &Enríquez Román, J. (2020). Engie: Business Model Transformation. Harvard Deusto Business Research, 9(2), 152-167.

[13] Joyce, A., & Paquin, R. (2016). The triple layered business model canvas: A tool to design more sustainable business models. Journal Of Cleaner Production, 135, 1474-1486.

[14] Keane, S., Cormican, K., & Sheahan, J. (2018). Comparing how entrepreneurs and managers represent the elements of the business model canvas. Journal Of Business Venturing Insights, 9, 65-74.

[15] Kraus, S., Filser, M., Puumalainen, K., Kailer, N., &Thurner, S. (2020). Business Model Innovation: A Systematic Literature Review. International Journal of Innovation and Technology Management, 17(06), 2050043. https://doi.org/10.1142/s0219877020500431

[16] Magretta, J. (2002). Why business models matter. Harvard Business Review, 80(5), 86-92. Retrieved 23 February 2022, from.

[17] Minatogawa, V., Franco, M., Pinto, J., &Batocchio, A. (2018). Business model innovation influencing factors: an integrative literature review. Brazilian Journal of Operations

& Production Management, 15(4), 610-617. https://doi.org/10.14488/bjopm.2018.v15.n4.a14

[18] Onghena, P., Maes, B., &Heyvaert, M. (2018). Mixed Methods Single Case Research: State of the Art and Future Directions. Journal Of Mixed Methods Research, 13(4), 461-480.

[19] Osterwalder, A., Pigneur, Y., & Clark, T. (2010). Business model generation. Wiley.

[20] Osterwalder, A., & Pigneur, Y. (2013). Designing Business Models and Similar Strategic Objects: The Contribution of IS. Journal Of the Association for Information Systems, 14(5), 237-244.

[21] Reim, W., Åström, J., & Eriksson, O. (2020). Implementation of Artificial Intelligence (AI): A Roadmap for Business Model Innovation. AI, 1(2), 180-191.

[22] Schuh, G., Gudergan, G., Feige, B., Buschmeyer, A., &Krechting, D. (2015). Business Transformation in the Manufacturing Industry - How Information Acquisition, Analysis, usage, and Distribution Affects the Success of Lifecycle-Product-Service-Systems. Procedia CIRP, 30, 335-340.

[23] Vaska, S., Massaro, M., Bagarotto, E., & Dal Mas, F. (2021). The Digital Transformation of Business Model Innovation: A Structured Literature Review. Frontiers In Psychology, 11.

[24] Witell, L., &Löfgren, M. (2013). From service for free to service for fee: business model innovation in manufacturing firms. Journal Of Service Management, 24(5), 520-533. https://doi.org/10.1108/josm-04-2013-0103.

★★★