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Virtual Commerce Management Using Design Thinking Process to Promote Digital Entrepreneurship for Education Studies

Tippawan Meepung[1] & Sajeewan Pratsri[2]

[1] Rajamangala University of Technology Tawan-Ok, Bangkok, Thailand

[2] Thepsatri Rajabhat University, Lopburi, Thailand

Correspondence: Sajeewan Pratsri, Thepsatri Rajabhat University, Lopburi, Thailand.

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Abstract

The objectives of this research were to (1) develop virtual commerce using the design thinking process to promote modern entrepreneurship, (2) carry out a suitability assessment of this process, and (3) evaluate digital entrepreneurship competency (DEC). The research process was therefore divided into 3 phases in accordance with these aims. The evaluation of the developed model was carried out by 7 experts in related fields, and the implementation of the model was carried using a sample of 50 users. Evaluation was measured on a Likert scale and implementation on a scoring rubric from the data in terms of arithmetic means and standard deviations. The results showed that: (1) the DEC model consists of 6 dimensions: 1. design thinking process, 2. entrepreneurship skills, 3. digital platform, 4. eCommerce Platform, 5. 7Cs, 6. Digital User Citizenship; (2) the DEC model was evaluated as being highly appropriate ($\bar{X}$=4.80, S.D.=0.21) and (3) the DEC was rated as being at the highest appropriate level.

Keywords: design thinking, virtual commerce, digital platform, digital entrepreneurship

1. Introduction

1.1 Introduce the Problem

The promoting digital technology entrepreneurs to promote modern entrepreneurs increase competitiveness, reduce costs, and support changes in consumer behavior. As well as enhancing business management and marketing. Market competition is complex. Entrepreneurs create innovative products for business positions. The main resource needed to do business creatively is the integration of multidisciplinary knowledge under limited conditions (Krawczyk-bryłka & Stankiewicz, 2020). Technical skills are fundamentally capable of using skills in a business environment as an important factor that differentiates individuals in an organizational environment (Boehm, 2020). Entrepreneurship depends on the relationships of a wide range of ecosystems, supporting it with customer money. Related to suppliers Entrepreneurial Thinking Features, it involves proactive self-ability, motivation to achieve competitive outcomes, risk acceptance, creativity, leadership, communication skills, planning, organizing work (Korte, 2018). Entrepreneurship involves perception, thinking. Imagination and involvement with economic matters Interdisciplinary entrepreneurship skills are included in educational institutions (AKKAŞ, TARHAN, & AYVAZ, 2020). Entrepreneurial education is one of the effective measures to tackle unemployment in society. The government promotes the entrepreneurship of learners. Entrepreneurial competition is based on initiatives, learning from practice gives learners experience in entrepreneurship and has developed ideas about entrepreneurship (Chen, Hsiao, Chang, Chou, & Chen, 2018). Establishments do business with products or forms of services. Entrepreneurs starting new business Digital skills are vital for entrepreneurship to help succeed. Technological advancements in the digital age have caused changes affecting business and marketing (Trongtorsak, Saraubon, & Nilsook, 2021). Digital technology has changed the way people live, affecting the structure of the economy, activities, manufacturing processes, trade, services, etc. Therefore, digital technology is an important tool for driving the country's development (Chouyluam, Wannapiroon, & Nilsook, 2021). UNESCO considers creativity, entrepreneurship, and innovation. It is important to drive sustainable development to promote entrepreneurship. Innovation in modern people and those interested in the future Teaching and learning to teach creativity, innovation, collaboration, and creativity with stakeholders outside the school to design digital tools and think like entrepreneurs (Androutsos & Brinia, 2019). Implementing technological advances to change the digital business Entrepreneurship Technology This three-component digital

commerce is part of a university curriculum that responds to industry dynamics. The school changed its curriculum from theory to practicality for commercial use in the market (Wong, Sam, & Yu, 2021). A survey of e-commerce organizations from sampling showed that 31% of employees with business management capabilities and technological skills showed that e-commerce capabilities are business-focused and highly demanding in organizations. Many universities offer e-commerce classes but lack clear training (Zhao, Li, Liu, & Liu, 2019). Digital technology plays a role in electronics commercial operators, using their ability to do business alongside commercial technologies. In schools, virtual laboratories can be used for practice (Wannapiroon, Nilsook, Kaewrattanapat, Wannapiroon, & Supa, 2021). Training to promote entrepreneurship empowers entrepreneurs with ICT environments including registration system, virtual banking system, virtual Commerce system (Vejačka, 2019), making changes with the design thinking process, with users central to understanding, developing, solving problems. Add opportunity as a result, it has been approached to design and develop innovations, new products, services, thinking processes to deeply understand problems, with users central to creative and perspective-based people. It is too late to create ideas. To achieve guidelines or innovations that meets the needs of users and situations (Mosely, Wright, & Wrigley, 2018). Design thinking aims to create new things with steps on empathy for problems. Design thinking is a way to help learners understand complex problems. It is a new travel experience design to solve problems and increase real design opportunities. Develop something and make changes happen (Lynch, Kamovich, Longva, & Steinert, 2019). To become a modern entrepreneur, you need to understand both the customer's perspective and the entrepreneur's perspective and have knowledge of the use of digital technology to drive business. Entrepreneurship practice is part of the curriculum in the Faculty of Business Administration and Information Technology, focusing on gaining an understanding of the basic electronics business. Understand virtual Commerce or e-commerce webs in various ways, understand online business. How should building a business with virtual Commerce or e-commerce. Marketing ideas for e-commerce, including laws and ethics for e-commerce, are the theoretical content that is fundamental to modern entrepreneurs to know to do business in the future.

1.2 Literature Review

1.2.1 Design Thinking

Practical design thinking allows learners to learn from methods and gain experience from thinking practice and to be more creative and responsible. The participants are participants. Build tools and use digital skills to innovate and deliver innovative prototypes. The result is either product or service (Androutsos & Brinia, 2019). Design thinking gives you a new way to solve problems. Innovate and innovate to meet consumers' needs. This makes it easier to look at the problems of working around the world and practice systematic thinking, step by step, and have a good management order regardless of whether it applies to operations (Pratsri, Nilsook, & Wannapiroon, 2021). Design thinking consists of 5 Steps: 1) Empathize, 2) Define, 3) Ideate, 4) Prototype and 5) Test Communication with users is therefore very important in observing to collect individual response data, supplying valuable clues for new products and services (Suzuki, 2016). Design thinking involves problem solving, creativity and people (Van Mechelen et al., 2019). It shows the steps from analysis to design support. Collaboration allows for seven diverse ways: structural limitations, content modification, focusing, and more. Perception, clarity of results Collaboration support Gather people's needs Technology feasibility and requirements for business success. This concept can change the way organizations develop products, services, processes and strategies (Bresciani, 2019). Design thinking is used to innovate and as a tool for non-designers who want to gain a footing advantage. Strategy over competitors brings creativity and perspective from many lines to create ideas. To implement and develop guidelines for solutions or innovations that meets the needs of users and situations (Chaney et al., 2020). Design thinking is a systematic process of creative innovation. It has been using to solve problems and create innovations through products and services (Chouyluam et al., 2021). Solve problems with projects requiring participants to have a data collection section to understand the problem. The needs of users or stakeholders interviewing informants are important. Users are central to understanding, developing, solving problems. Add opportunity as a result, it has been approached to design and develop innovations. New products, services meet the needs of users.

1.2.2 Modern Entrepreneur

Entrepreneurial leadership is one of the modern leadership styles in the organization. The concept of entrepreneurship is steadily increasing in business, organization and in the education system. Big and strong business around Today's world stems from the creativity and effort of start-ups. A detailed analysis of entrepreneurship and their role in the organization as an entrepreneurial leader show that there is a close correlation between the concept of entrepreneurship and exploring opportunities where entrepreneurial leaders are based on innovation, risk taking and the ability to adapt to change in successful organizational management (Ordu, 2020).

1.2.3 Entrepreneurship Skills

Higher education institutions have mandatory courses. The objective of teaching and focusing on students of higher education institutions is also established in entrepreneurial, innovative and management skills. As a result, graduates are in the profession. Create career opportunities for others (Ogunleye & Sunday Adeyemo, 2013). Entrepreneurs need to have knowledge of Digital Literacy, lack of access skills to networks and investment sources affect the digital economy (Kakouris, 2019). Skills refer to the ability to apply knowledge and use knowledge to complete tasks (Apostolopoulos, Kakouris, & Liargovas, 2018). Entrepreneurial skills are valuable for working in an organization, starting with thinking, and having needs as the driving force of that idea to achieve it. Solving problems involves using logical and creative thinking in practice (Civera, Donina, Meoli, & Vismara, 2019). Digital Entrepreneurship competency Entrepreneurs form the glue that holds societies together. New solutions to the challenges faced will be developed. New inventions, small and large will be tested in the market. Entrepreneurship stay connected with other economies, to remain alert, to new opportunities, and safeguard the jobs of the future (GEM, 2021). Digital entrepreneurship, defined as the practice of pursuing new venture opportunities presented by new media and internet technologies to traditional entrepreneurship with regard to pursuing entrepreneurial opportunities by creating new enterprises or commercializing products and services (Ngoasong, 2018). Entrepreneurial skills and digital competence are two basic competences in people's education in the 21st century.

1.2.4 Digital Entrepreneurial Ecosystem

The digital ecosystem is at the core of the Digital Entrepreneurial Ecosystem framework is a new framework to guide understanding of entrepreneurship in the digital era, especially digital entrepreneurship in the context of platforms, users, and broader digital institutions. The digital entrepreneurial ecosystems consist of entrepreneurs creating digital companies and innovative products and services for multiple users and agents in the global economy (Purbasari, 2021). Consists of 3 main components: [1] *Digital citizenship* is about confident and positive engagement with digital technologies. By educating students about digital citizenship, they will have the opportunity to develop an understanding (Digital Technologies Hub, 2021; Australian Curriculum, 2021). Using digital media is complicated. Invasions of privacy increases dataveillance, digital-by-default commercial, participatory action that is important for digital citizenship. New strands of critical digital literacy, such as data literacy, need to be developed in education if individuals are to be aware of the challenges to their digital rights (Pangrazio & Sefton-Green, 2021). [2] *Digital Technology Entrepreneurship* encompasses all agents that build complementary products and services connecting to platforms. Technology entrepreneurship is an established concept in academia type and nature of a technology opportunity can be a determining factor in the activation of the entrepreneurial process. 1) Technology entrepreneurship, 2) Digital technology entrepreneurship and 3) Digital entrepreneurship (Giones, Brem, & Clark, 2017). And [3] *Digital multi-sided platform* can be great value amplifiers for some business models, especially during the emergence and growth phases of an industry when they can help captivate a large user base, something that could later become a competitive advantage for the products. New forms of digitally enabled interactions and information exchanges have given rise to innovative and disruptive platform-based business models. about the following concepts: [1] *Management*: 1) Product platform 2) Technological Systems 3) Transactions 4) Platform ecosystem, [2] *Economic*: 1) Digital and non-digital markets and platforms 2) Market mechanisms and [3] *Information Systems* : 1) Digital platforms 2) Socio-technical systems (Poniatowski, Lüttenberg, Beverungen, & Kundisch, 2021; Choudary, Parker, and Van Alstyne, 2019; Song, 2019).

1.2.5 Digital Platform

Digital platforms dominate the marketplace. The largest platforms are Google, Apple, Facebook, Amazon, and Microsoft (collectively known as "GAFAM") (Meepung, Pratsri, & Nilsook, 2021). Multisided internet platforms, on the other hand, can operate under demand-side conditions, where output is primarily limited by the number of consumers using the service (Hanley, 2020). Digital platforms are growing in number, size, and profitability, and they're not getting any fewer complexes (Harvard Business Publishing Education, 2021). The six digital platform categories all revolve around a different sort of matchmaking that is facilitated: 1) Digital marketplace, 2) Digital search, 3) Digital repository, 4) Digital communication, 5) Digital community, and 6) Digital payment (TIAS, 2019).

1.2.6 Virtual Commerce/eCommerce Platform

Virtual commerce is part of purchase and sales transactions using both seller and buyer internet networks, as well as social participation in the use of online virtual networks. Using an ecommerce platform requires internet or smart phones and requires digital skills that become part of an important element in using ecommerce between

businesses. Businesses on eCommerce connect with cashless societies as electronic transactions instead of real cash. Internet users comprise online Internet users in information and communication technology related to business. It also uses digital technology over the Internet (Rahman, 2019). The development of the eCommerce system leads to an increase in the concentration of new business structures operating in the electronics business. A wide range of companies expanding their businesses with new sales channels related to e-commerce, the e-commerce industry generates high revenue. Individuals use the Internet to order goods or services (B2C). It is convenient and timesaving, allowing consumers to use ecommerce to make purchases. Ecommerce marketplace entrepreneurs need to look for new solutions to gain a competitive advantage. A factor in the ecommerce market is an adequate assessment of the effectiveness of managing an entrepreneurial innovative economic model. Shipping payments, payments are available in a wide range of payments. Debit/credit card bank payments are the most popular. A wide range of payment options reduces the likelihood of cancellations from certain types of customers (Simakov, 2020). eCommerce as an innovative entrepreneur A list of stages of the formation of e-commerce enterprises is defined as innovative entrepreneurs. eCommerce is interpreted as selling goods over the Internet, using electronic means of transmission to participate in exchanges, as well as buying and selling goods and services that require transportation from place to place. Digital technology transforms the economy as a priority of value creation and profitability. At the heart of the economic transformation is eCommerce, an environment that creates and develops eCommerce to facilitate exchanges of goods, thus becoming a driving force in modern business (Simakov, 2020). Virtual Commerce is an open-source ecommerce platform that allows users to create unique identities so they can meet their customers' needs. These open-source ecommerce platforms are widely used in today's world because they are easy to use and easy to customize according to your business needs and goals. Almost all eCommerce developers use open source eCommerce, it's practically customizable and takes just a few clicks (Alferez, 2020). Giant companies reach small stores. Many ecommerce store owners are turning to free open-source ecommerce platforms, the tools needed to sell online aren't cheap, especially at the enterprise level (Boyes, 2020). The eCommerce framework can control the design and way the store works more creatively. Open-source solutions have unique features rather than constantly evolving. It has control over which hosting, plug-ins, and themes to use, and supports the developer community with great support from other developers (Warnimont, 2020). eCommerce is becoming very popular in Arab countries with a wide range of advantages. The government provides a boost as one of the major economies and emerging markets, including the growth of B2B and B2C, achieving customer satisfaction is one of the keys to the success of online marketing. Today's high competition, what affects customer satisfaction with eCommerce websites and online shopping, pricing, ease of use and availability of payment channels is positive for customer satisfaction (Sanyala & Hisamb, 2019). The development of digital technology in the 21 century highlights the environment for the younger generation who need to understand digital through telecommunications tools and social media as the main platforms in the digital communications environment. It has traditional business links with digital-related modernization, including payments instead of real cash payments. Changes in technology have resulted in electronic payments involving non-cash karma businesses on eCommerce (Rahman, 2019).

1.2.7 7Cs

An important critical success factors, will enable a successful on-line business and transmit confidence to potential online clients. A virtual Commerce that success the way e-Marketing and e-Purchasing in design, the key factor is the beautiful, attractive style of visitors. There are 7 outstanding factors called 7Cs, including (Madhani, 2018). 1) Context: The layout and design make the virtual store convenient to use and beautiful, 2) Content: text, images, audio, videos in the virtual Commerce are interesting, useful, and up to date, 3) Community: Virtual Commerce support communication between customers and entrepreneurs or customers, 4) Customize: a flexible virtual Commerce to accommodate user differences or allow users to customize them individually, 5) Communication: Virtual Commerce communication can communicate in two ways between users, 6) Connection: Virtual Commerce connection can be linked to other websites and 7) Commerce: Commerce virtual Commerce can cause buy-to-sell transactions.

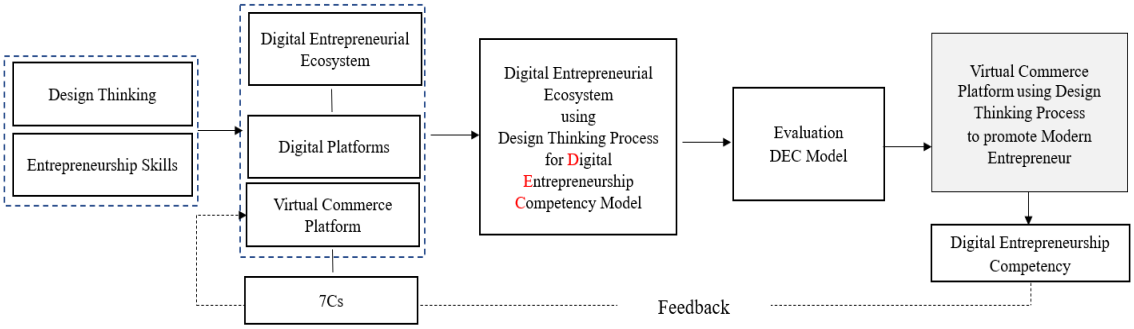

Figure 1. Conceptual framework

From Figure 1, the Design Thinking Process for Digital Entrepreneurship Competency Model (DEC) to promote modern entrepreneur consists of elements as follows: Digital Entrepreneurial Ecosystem, to use in facilitating consists of 3 main components: 1) Digital citizenship 2) Digital Technology Entrepreneurship 3) Digital multi-sided platform components i.e., Product platform, Technological Systems, Transactions, Platform ecosystem, Design Thinking Process, Entrepreneurship skills, such as developing of an appropriate Digital Platforms, Virtual Commerce Management, and the key success of Virtual Commerce in e-Marketing and e-Purchasing use 7Cs framework.

1.3 Research Objectives

The objective of this research to:

1) Develop the virtual commerce management using the design thinking process to promote modern entrepreneur.
2) Carry out a suitability assessment of this process and 3. Evaluate digital entrepreneurship competency.

2. Method

The research involved 3 phases as follows:

Phase 1**:** The development of a digital entrepreneurial ecosystem for digital entrepreneurship competency model (DEC) to promote modern entrepreneurship.

This development involves the following design steps:

1) Review of the literature and previous studies regarding the design thinking process, entrepreneurship skills, digital entrepreneurial ecosystems, and digital entrepreneurship competency in order to study the models and characteristics of the previous research.
2) Study of relevant digital entrepreneurial ecosystems, digital platforms, virtual commerce management, 7Cs and the use of the design thinking process for the DEC mode to promote modern entrepreneurship.
3) Synthesise the conceptual frameworks of the design thinking process for the DEC model. The research tool is a form of content analysis that analyses data using content analysis techniques.
4) In-depth interviews of business owners, system developers, education specialists with regard to the skills of modern entrepreneurs. The results of the in-depth interviews will provide a conclusion and develop a model as part of the research. The research tool will analyse the data using content analysis techniques.
5) Design a digital entrepreneurial ecosystem using the design thinking process for the DEC model. The design steps are as follows:
6) *Step 1*) Analyse six dimensions; *Step 2)* Undertake authentic assessment learning in terms of digital entrepreneurship competency to apply the information obtained for the promotion of modern entrepreneurship.
7) Develop virtual commerce management with regard to a digital entrepreneurial ecosystem using the design thinking process for the DEC model.

Phase 2: The evaluation of the appropriateness of virtual commerce management using the design thinking process for the DEC model to promote modern entrepreneurship. The design steps are as follows:

1) Create tools to evaluate the validity of the digital entrepreneurial ecosystem using the design thinking process for the DEC model. This consists of 5 main components: 1) the design thinking process, 2) entrepreneurial skills, 3) composition of the digital platform, 4) composition of virtual commerce management, and 5) 7Cs of virtual commerce.
2) Develop the digital entrepreneurial ecosystem by using the design thinking process for the DEC model. Check for its suitability with the help of 7 experts in related fields. The research instruments take the form of model-appropriate assessment procedures, and analysing data using arithmetic means and standard deviations.
3) Improve virtual commerce management using the design thinking process for the DEC model based on the recommendations of experts.

Phase 3: The evaluation of digital entrepreneurship competency to promote modern entrepreneurship.

The design steps are as follows: 1) Create tools to evaluate the validity of DEC to promote modern entrepreneurship. This consists of 7 main components: a. Context, b. Content, c. Community, d. Customization, e. Communication, f. Connection, and g. Commerce. 2) Apply the model to teaching a sample group of 50 undergraduate students. Evaluate the DEC of the sample group using a scoring rubric. The activity is carried out using the steps involved in applying the DEC model. The sample group applies an eCommerce platform and uses the design thinking process in order to develop and create the system's elements of backend, add a video library, store products, store orders, add forum content, add a product, create a promotion. This was then evaluated by the coach.

3. Results

Phase 1: The results of the development digital entrepreneurial ecosystem for the DEC model in terms of promoting modern entrepreneurship are as follows:

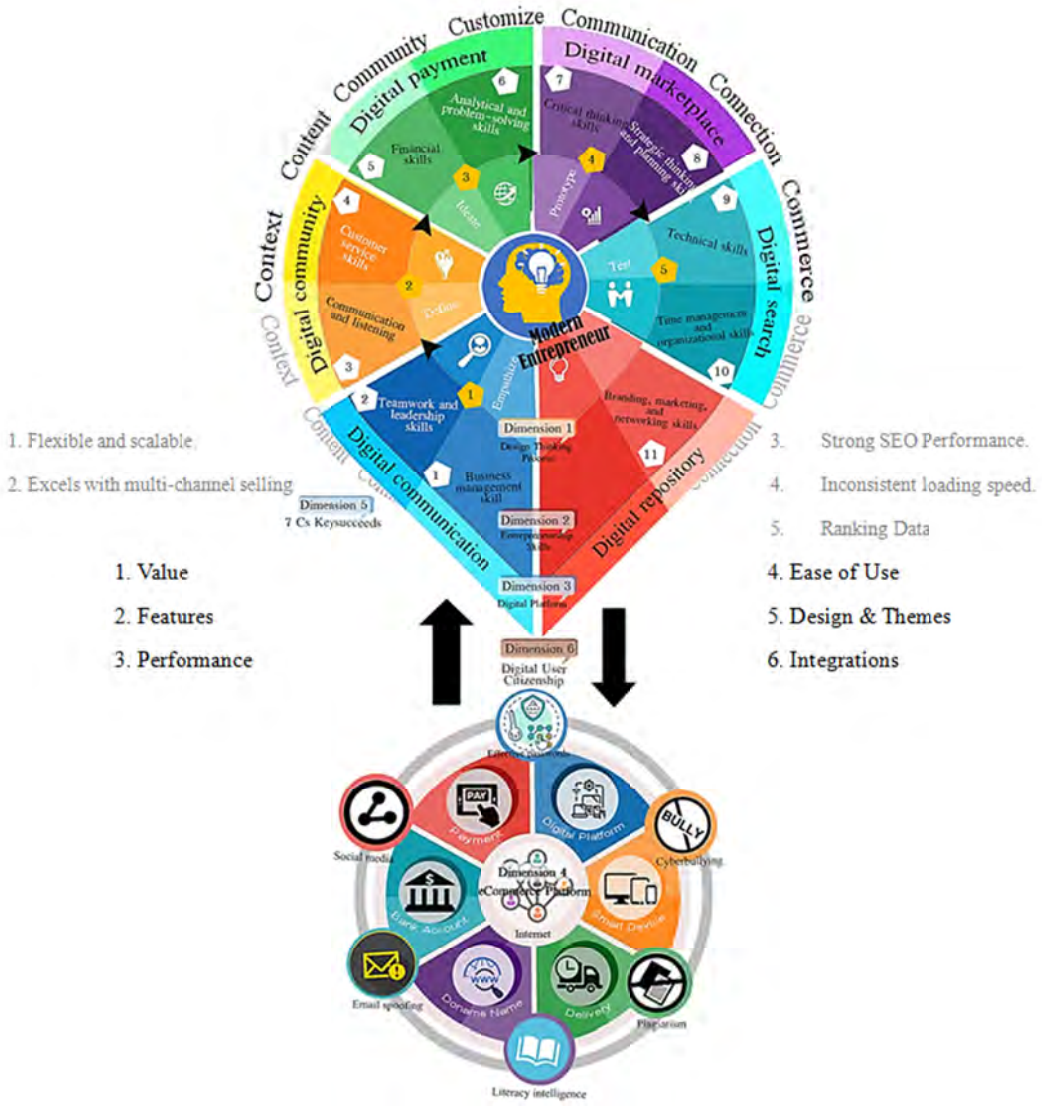

Figure 2. Model of virtual commerce management using the design thinking process for promote modern entrepreneur (DEC model)

From Figure 2 shows components of virtual commerce management using the design thinking process for promote modern entrepreneur as follow:

Dimension 1: design thinking process for develop virtual commerce management consists of five components

(1) Empathize: Step 1. Identify the customer's journey, the problem statement or underlying issues and possible solution options; and Step 2. Identify target users and design interview questionnaires to understand the customer's pain points, (2) Define: Step 1. Develop an empathy map to define customer's profiles and needs by using ethnographic research methods (interviews and observations), Step 2. Map the customer's journey to understand their experiences with regard to your product/service, Step 3. Develop the persona (s) of your target customers, Step 4. Analyse customer's professional profiles to determine their functional, social, emotional, and basic needs, and Step 5. Cluster customer insights, and develop a point of view to envision and evaluate possible solutions, (3) Ideate: Step 1. Brainstorm ideas to explore that will customers' needs, Step 2. Identify the desirable features of possible solutions and cluster ideas, and Step 3. Select high-quality solutions and ideas that can be prototyped, (4) Prototype: Step 1. Design a prototype for the selected idea to enable a conversation to be held with the stakeholders, Step 2. Derive insights from user-prototype interactions and stakeholder feedback to rectify flaws, address constraints and enhance strengths, and Step 3. Discuss the importance of failing quickly and (5) Test: Step 1. Refine prototypes and solutions based on feedback from target users to better meet users' needs, and Step 2. Test and refine point of view (POV).

Dimension 2: Entrepreneurship skills for modern entrepreneurs consist of eleven components

Business management skills: developing business management skills can mean building up individual's ability to multitask. Teamwork and leadership skills: business owners will most likely act as both a supervisor and as part of a team, and will need to rely on effective leadership skills to help motivate the team. Communication skills: effective and clear messages through emails, content marketing, social media and other advertising methods can positively influence the target market is reached. Customer service skills: effective customer service skills can help connect with the customer base. Financial skills: taking care of the financial aspects of the organization. This involves developing financial skills by learning from a financial planner. Analytical and problem-solving skills: finding solutions to obstacles and using creative thinking to develop plans and strategies that will help the firm achieve its business goals. Critical thinking skills: Being able to look at problems, situations, projects, and operations from different perspectives. This can help in decision-making. Strategic thinking and planning skills: entrepreneurs who have built brands and businesses commonly applied strategic planning skills to develop strategies for growing and developing their business. Technical skills: entrepreneurs with highly developed technological skills can use software and other digital approaches in order to manage projects, track sales and revenue, and measure business growth. Time management and organizational skills: time management and organization skills are also important skills for entrepreneurs to have. Additionally, the entrepreneur might implement technology to help keep the business organized or employ an office assistant to help with paperwork, business records and customer files. Branding, marketing, and networking skills: being able to implement successful branding and marketing strategies can be essential.

Dimension 3: The digital platform consists of six components in terms of virtual commerce management

1. Digital marketplace 2. Digital search 3. Digital repository 4. Digital communication 5. Digital community 6. Digital payment. Digital marketplace solutions include collaboration with an ecosystem, innovating at speed, orchestrating the delivery of complex and dynamic solutions, being flexible in terms of bundling, charging, and monetizing, simplifying and unifying customer experience, empowering partners, ensuring scalability and simplicity. Factors in eCommerce success 1) Competitive pricing: customers compare prices between brands. It is expected of entrepreneurs, as well, that they be aware of how much competitors are charging for their goods. 2) Product quality: firms need to procure products from well-known and trusted suppliers in the form of high-quality goods. 3) Shipping time and cost: There are many providers that keep commerce simple with a single shipping option to allow for flat rate pricing or so that they can offer free shipping. 4) Online reviews: Product ratings are an integral factor in the decision to purchase. 5) Easy return policy: Many firms bury their refund policy or make it confusing to understand. This can mean many lost sales and many unhappy customers. 6) Loyalty rewards: Many customers focus their sights on the lowest price, which makes generating sales increasingly challenging. 7) Easy navigation: eCommerce platforms also offer themes that have been modified and improved over time to help store. 8) Ease of checkout: Checkout complexity is a big factor in a store's sales numbers. It is the final step that determines whether a visitor turns into a customer.

Dimension 4: eCommerce Platform: This consists of the following components

Purchasing and selling activities that happen over the internet. The different types of commerce include B2B (Business to Business), B2C (Business to Consumer), C2C (Consumer to Consumer), and C2B (Consumer to Business). An eCommerce platform is a software application where both parties - the seller and the consumer – act out their role. Essentially a consumer should be able to use an e-commerce platform to discover products, shop around, use a cart and check out. eCommerce Platform composition features the following: 1. Value 2. Features 3. Performance 4. Ease of Use 5. Design and Themes and 6. Integrations 5 aspects 1) Flexible and scalable 2) multi-channel selling 3) Strong SEO performance 4) Inconsistent loading speed and 5) Ranking Data. eCommerce platforms are based on objective performance data feature sets and values (CEO, 2021). Popular 10 platforms are 1. BigCommerce 2. Shopify 3. Wix 4. Shift4Shop 5. WooCommerce 6. Volution 7. Prestashop 8. Weebly 9. Squarespace and 10. Magento.

Dimension 5: 7Cs: consist of the following components

1. Context: The layout and design make the virtual store convenient to use and with a beautiful template design 2. Content: text images and audio videos in virtual commerce are interesting and useful 3. Community: Virtual commerce supports communication between customers and entrepreneurs, 4. Customize: flexible virtual commerce can accommodate user differences or allow users to customize them individually 5. Communication: Virtual commerce communication can involve two-way communication between users 6. Connection: Virtual commerce connections can be linked to other websites and 7. Commerce: Virtual commerce can permit buy-to-sell transactions.

Dimension 6: Digital User Citizenship involve the following components

1. Effective passwords 2. Cyberbullying 3. Plagiarism 4. Literacy intelligence 5. Email spoofing and 6. social media. The factors affecting effective virtual commerce include: 1. Value 2. Features 3. Performance 4. Ease of Use 5. Design and Themes and 6. Integration. The following must be considered: flexible and scalable aspects, multi-channel selling, strong SEO performance, inconsistent loading speeds, and ranking data.

Phase 2: The evaluation of the appropriateness of virtual commerce management in the design thinking process to promote modern entrepreneurship (DEC model)

The evaluation of the DEC model by 7 experts found it to be at the highest appropriate level, as shown in Table 1.

Table 1. The evaluate the appropriateness of digital entrepreneurship competency model (DEC)

Evaluated Content	Rate of appropriateness		Suitability
	Arithmetic Mean	Standard Deviation	
1. Design Thinking Process			
Empathize	4.67	0.49	Highest
Define	4.92	0.29	Highest
Ideate	4.75	0.45	Highest
Prototype	4.92	0.29	Highest
Test	4.83	0.39	Highest
2. Entrepreneurship skills			
Business management skill	4.83	0.39	Highest
Teamwork and leadership skills	4.92	0.29	Highest
Communication and listening	4.83	0.39	Highest
Customer service skills	4.92	0.29	Highest
Financial skills	4.75	0.45	Highest
Analytical and problem-solving skills	4.92	0.29	Highest
Critical thinking skills	4.67	0.49	Highest
Strategic thinking and planning skills	4.83	0.39	Highest
Technical skills	4.92	0.29	Highest
Time management and organizational skills	4.92	0.29	Highest
Branding, marketing, and networking skills	4.83	0.39	Highest
3. Digital Platform			
Digital marketplace	4.83	0.39	Highest
Digital search	4.83	0.39	Highest
Digital repository	4.75	0.45	Highest
Digital communication	4.83	0.39	Highest
Digital community	4.67	0.49	Highest
Digital payment	4.75	0.45	Highest
4. eCommerce Platform (Tool)			
Composition of eCommerce Platform			
Smart Device	5.00	0.00	Highest
Internet Network	5.00	0.00	Highest
Digital Platform	5.00	0.00	Highest
Selling online Process			
Bank Account	5.00	0.00	Highest
Add products	5.00	0.00	Highest
Check Order	5.00	0.00	Highest
Payment	5.00	0.00	Highest
Delivery	5.00	0.00	Highest
5. 7Cs Key succeeds of Virtual Commerce			
Context	4.50	0.67	Highest
Content	4.67	0.65	Highest
Community	4.67	0.49	Highest

Customize	4.58	0.51	Highest
Communication	4.75	0.45	Highest
Connection	4.50	0.67	Highest
Commerce	4.50	0.80	Highest
Total	4.80	0.21	Highest

Note. Arithmetic Mean >=4.51 is equal to highest level.

From Table 1 shows the level of suitability of the model and indicates that it is at the highest appropriate level. In the design thinking process was at the highest appropriate level, Entrepreneurship skills at highest appropriate level, Digital Platform at highest appropriate level, eCommerce Platform (Tool) at highest appropriate level and 7Cs at highest appropriate level.

Phase 3: Result of the implementation with the sample group

Evaluation criteria are listed in Table 2.

Table 2. Evaluation criteria of implementation with sample group

Evaluation criteria	(3 points)	(2 points)	(1 point)	(0 point)
1. Context: The layout and design of the virtual commerce is convenient to use and beautiful.	Very good	Good	Moderate	Poor
2. Content: The text, images, sounds, and videos contained in the virtual commerce are interesting, useful, and up-to-date or current.	Very good	Good	Moderate	Poor
3. Community: The virtual commerce supports communication between customers and operators or customers with customers. Completeness of social media.	Very good	Good	Moderate	Poor
4. Customize: The virtual commerce is flexible to accommodate different users or allow the user to define only himself. Flexible and scalable.	Very good	Good	Moderate	Poor
5. Communication: Virtual commerce can communicate two-way between users. Completeness of setting.	Very good	Good	Moderate	Poor
6. Connection: Virtual commerce can be linked to different websites. Completeness of setting.	Very good	Good	Moderate	Poor
7. Commerce: A virtual commerce can generate buy-sell transactions. Completeness of setting.	Very good	Good	Moderate	Poor

The results of the implementation are showed in Table 3.

Table 3. The results of the implementation

Elements	Detail	Arithmetic Mean	Standard Deviation	Suitability
Context	*Design & Themes* Layout Template Design	4.42	0.61	High
Content	*Integrations* Text, Font Size, Color Product Photos Sound Videos	4.28	0.73	High

Community	*Social Media* Line IG Tiktok YouTube Facebook	4.36	0.63	High
Customize	*Flexible and scalable* Desktop Smart Phone	4.44	0.61	High
Communication	Chat bot Live chat Email Phone support Product descriptions Advertisements	4.58	0.57	Highest
Connection	Payment systems Marketing tools Brand experiences Personalized content Service updates Timely campaigns Security and reliability	4.68	0.47	Highest
Commerce	*Multi-channel selling* Marketplace Lazada Shopee Google Shopping Facebook Shop Instagram Shopping *Online trading transactions* stock systems. Membership System, eBanking eBilling System Payment System	4.62	0.49	Highest
Total		4.48	0.59	High

Note. N=50

From the Table 3, 1) the Context analysis is the high level ($\bar{X}$=4.42, S.D.=0.61), 2) the Content analysis is the high level ($\bar{X}$=4.28, S.D.=0.73), 3) the Community analysis is the high level ($\bar{X}$=4.36, S.D.=0.63), 4) The Customize analysis is the high level ($\bar{X}$=4.44, S.D.=0.61), 5) The Communication analysis is the highest level ($\bar{X}$=4.58, S.D.=0.57), 6) The Connection analysis is the highest level ($\bar{X}$=4.68, S.D.=0.47) and 7) The Commerce analysis is the highest level ($\bar{X}$=4.62, S.D.=0.49).

4. Discussion

The online world has a huge impact on people's lives. Doing business also has to adapt to consumer behavior. So, there are shops that have entered the eCommerce. It is important to study and learn about online business and marketing strategies in order to promote products over the Internet, so as to sell more products and beat the many competitors that exist. The most popular way to engage in business is through the radio, television, and most commonly nowadays, the Internet. Business promotion can involve the use of text, audio, visuals, and video clips. E-commerce business can reach a large number of customers and reduce costs. In a good operation, design thinking is a human-centered approach to innovation—anchored in understanding customer's needs in such a way at to transform the way the company develops products, services, processes, and the organization itself. By using design thinking (Chaney et al., 2020), the perfect solution for eCommerce website are both easy to build and easy to maintain. Beautiful themes are responsive and customizable. eCommerce website solution that is easy to build and manage. These platforms possess strong mobile and social outreach, capitalizing on ever-evolving technology

and communication channels. There are so many eCommerce platforms available, entrepreneur means starting and building your own successful business, Entrepreneurs generally take a creative, innovative approach, and they may take risks that others would avoid (Civera et al., 2019). Many researchers have studied the subject, but there are no definitive answers. What we do know is that successful entrepreneurs tend to have certain traits and skills in common: Personal characteristics, Interpersonal skills, Critical and creative thinking skills, Practical skills, and knowledge (Mindtools, 2021). Digital platforms take a lot of different forms depending on the business model. Entrepreneurial skills lead to developing vast social networks and high competition in the market in effective ways. They are considered to be crucial contributing factors in recognition and value creation (Farrukh Shahzad, Iqbal Khan, Saleem, & Rashid, 2021).

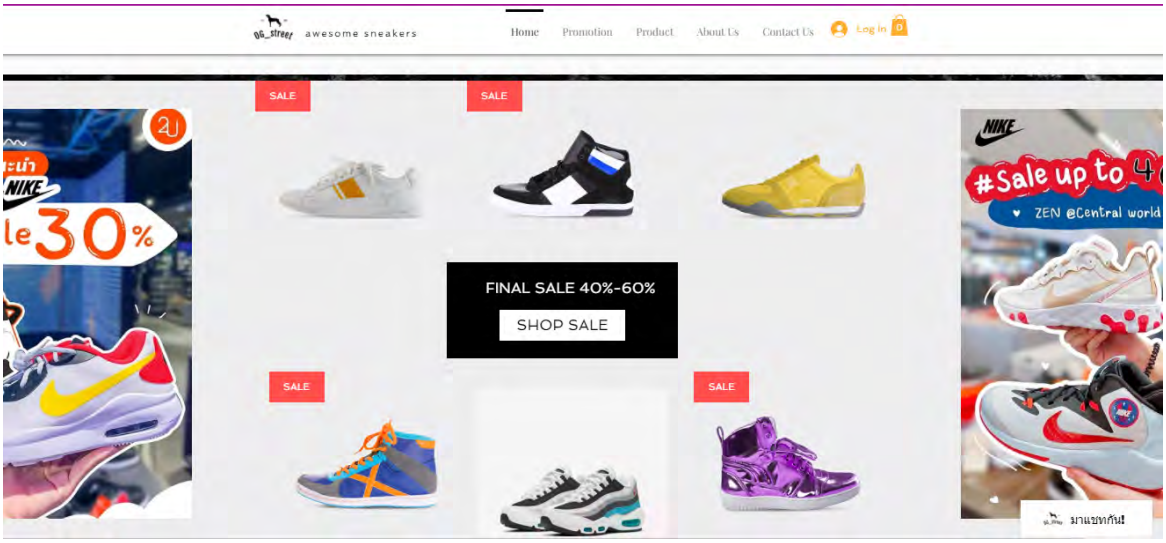

Figure 3. Achievements from virtual commerce management using the design thinking process for promote modern entrepreneur (from sample group)

5. Conclusion

In terms of the result of this study into virtual commerce management using design thinking process to promote digital entrepreneurship, from a sample of 50 people using criteria based on a framework of 7Cs, the details are as follows: 1) Context: Entrepreneurs should have basic knowledge of graphics programs to help make their virtual commerce management more attractive by designing the header and footer banner button in the layout. This increases customer interest and allows virtual Commerce to differ from that of other virtual commerce websites that use the same platform. 2) Content and Connection: Graphics should be used to promote the benefits of the company. This might involve using the product image together with other related elements or using a design according to the festival trim and include relevant details in the media, such as the start date, the end of the promotion. Special privileges for customers to be beautiful striking, eye-catching entrepreneurs can design both still images and animations or create short video clips. Put in virtual commerce parallel to other popular communication channels for public relations purposes such as FaceBook, Tik-tok, IG, Line, YouTube, helping customers know about their current promotions and the privileges they will receive. 3) Community and Communication: Entrepreneurs support communication between customers and their company to support customer relationships. Chatbot is software to encourage automated chatting and interaction with customers through messaging. It is designed to reliably simulate how humans can act as interlocutors, and entrepreneurs now find it to be immensely popular for interacting with customers on virtual commerce and open-source e-commerce platforms. 4) Customize: of sales in the digital age with virtual commerce management in conjunction with marketing strategies to make more profitable. By responding to the likes of products with non-service services, responding to communications by citing personalization marketing statistics for brands that are aware of the needs of 75% of consumers who come to shop at Commerce that remember the customer's name. And 81% of consumers want their Commerce to remember their customers (Accenture Interactive, 2018). The Virtual Commerce and Open-source eCommerce platforms display customer information and customer order statistics that entrepreneurs can use to respond to customers' likes with non-service and respond with communication. The flexible platform supports the nuances of a smartphone or device where customers access virtual Commerce over an Internet

network. 5) Commerce: Online trading transactions involve stock systems, membership systems, e-Banking payment systems (e-Payment) and E-Billing systems. The status of goods when delivering goods to customers is available on the Virtual Commerce and Open-source eCommerce platforms. The platform is practical for merchandising. In terms of a development platform for researchers to promote modern entrepreneurs by developing entrepreneurial skills by practicing the creation of virtual Commerce using the Design Thinking Process, additional explanations are as follows: The platform, in addition to its knowledge of graphics programs and programming for decorating virtual Commerce, is different. Entrepreneurs should have marketing knowledge to differentiate their promotions from those of competitors, and which meet customers' likes, as well as being aware of the principle of naming domain names or names for virtual Commerce for customers so that they can remember them easily. They also need to find a system that supports customer relationships. In non-product (service) with customer-liked communications legal ethical knowledge for eCommerce, it is important to be an entrepreneur in the modern era of online trading caused by covid-19, because consumer behaviour has shifted in terms of current popular demands.

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