



A Suggested Framework of Digital Maturity Dimension for Sport Media in Thailand : Review and Comparative Analysis

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Abstract

An extensive of the digital disruption and the pandemic effect have challenged the engagement channel of traditional sport media in Thailand. The rise of digital maturity model has received considerable research attention in science and management which defining diverse dimensions to explain digital transformation. A design to suit and characterize the phenomenon of Thai sport media remains in new territory and the notion of digital maturity for sport media in Thailand is a novel idea in academics. This paper aims to develop a conceptual framework of digital maturity for sport media in Thailand from the identified dimensions. By conducting a comprehensive literature review and comparative analysis, there are 14 out of 25 articles selected based on its relevance and application. Research finding indicates that there are eight attributes which are popularized and mostly applicable in the maturity models: culture, technology, organization, customer, strategy, operation, innovation, data analysis. With the engagement channel, this research finally proposes a conceptual framework of digital maturity dimension for Sport Media in Thailand. Such dimensions should be viewed as an important basis for research initiative in forming the digital maturity for Thai sport media and future research shall be directed to verify in the market practices.

Keywords : Digital maturity model, Digital transformation, Sport media, Sport business

Introduction

The advent of new digital technology and interactive media in sports industry has been driven by changing consumer habits, technology and social movement. With digital disruption accelerating across the board, pressure on traditional sports media is increasing. As the



industry goes through a period of unprecedented change, the ability to recognize market disruption and respond effectively is increasingly important as a result of the rising threat, and the traditional channel of sport engagement is under the risk (Bughin & Van Zeebroeck, 2017; Jonjoubsong & Thammabunwarit, 2021).

Many traditional sports media outlets are under threat as digital innovation and social media platforms proliferate. The primitive media of newspapers, magazines, television, DVDs, and radio has been disrupted by the popularization of social media. Not only is digital technology transforming the media landscape, but it is also transforming the sport media profession, content creators, and new reporters. It is widely acknowledged that the digital transformation has disrupted traditional forms of media consumption. Sport media must innovate to address changing trends in behavior consumption and avoid the threat of losing engagement (Chunhachinda, 2019; Poomkumarn, S., & Sonchan, 2018).

Aside from digital disruption, the spread of novel viruses has created a new set of challenges and opportunities to various business sectors, including the sports industry. The COVID-19 reduced revenue sources and continues to slow the global sport media economy (Mastromartino et al., 2020). The pandemic has posed a significant challenge to the media and broadcasters, which rely on live events to attract viewers and generate revenue (Vaska, Massaro, Bagrotto, & Dal Mass, 2021). Sporting connections are shifting to digital sporting communities, with traditional media being replaced by alternative programming (Rust, 2020).

In Thailand, the COVID-19 pandemic crisis exacerbates the digital disruption which has prompted Thai Sport media to make necessary adjustments in order to survive and continue the revenue gain (Chankuna, Chanthonsarasom, Inhana, Sukdee, & Sriboon, 2021). The second wave of the COVID 19 outbreak results in a significant decline in most media spending which is the major source of revenue. Due to the latest COVID-19 outbreak, advertising spending is dropped by 14% in 2020. In December 2020, overall advertising spending is 5% decline from the previous year. Meanwhile, total advertising expenditures for the year 2020 totaled 106,255 million baht, down 14% from the previous year (from 123,663 million baht). With 63,177 million baht in advertising spending, television remained the most popular medium, down 10.15%. Spending on print media advertising fell by 32% to 3,830 million baht. The amount spent on radio advertising fell by 24% to 3,600 million baht (Infoquest, 2021). Since 2020, this has become a major challenge for the Sport Media sector. Both challenges push Thai media to change the way they present and communicate to consumers



Many sport media stakeholders and organizations restructured the business model by resizing the organization, creating another innovative engagement, and shifting to social media platform in response to the changed consumption and the favored social media for Thais. Sport media innovations have occurred throughout this period to transform the traditional manner of involvement, despite the threats of digital disruption and the pandemic impact. Technological developments had generated interactive experiences for the Thai sport media segment and consumption throughout this COVID-19 era with the introduction of numerous internet engagements. These market conditions, together with recent digital advances, have prompted this study to focus on the future digital transformation of Thailand's sport media segment, as well as its progress to the maturity level.

As a result, the digital maturity model phenomena is mostly determined by digital transformation and its progressive evolution. The digital maturity model has been established in the last year with many domains of digital transformation models (e.g. Westerman & McAfee, 2012, Wilmott, & Jose, 2015; Verhoef et. al., 2021). Some of the models are generic and can be used in any sector, while others are tailored to specific manufacturing domains. These, however, are limited to support the sport media sector. In scholarly work, the investigation into the digital maturity model and its transition for the sport media segment in Thailand is still unresolved.

This will be a new territory for sport media in Thailand as there is limited resource and guidance to leverage digital capability and technology to enable sport media model and its progression to maturity. As a result, this gap heightens the researcher's desire to comprehend how Thai sport media perform in a volatile environment. Understanding this concept is crucial because it will provide the dimensions to build a framework of digital maturity model for Thai sport media. Having such framework in place will be beneficial to guide the digital pace in this market and add value to the needs of customers.

Background on the digital transformation and digital maturity

- Digital transformation

Digital transformation is a continuous process of adapting to a significant technology change in order to satisfy the digital expectations of consumers, employees, and partners. As a result of transformation and digital technology, customers' behaviors and expectations have fundamentally changed, putting pressure on traditional organizations and disrupting many industries (Remane & Hanelt, 2017). Digital innovation has posed a threat to most businesses,



including, but not limited to, the sports media industry. Organizations must be continually aware of changing market trends and take advantage of the opportunities to respond in order to thrive in digitalized markets (Vial, 2019).

Several organizations have implemented some types of digital transformation and progressed through various degrees of maturity. However, because the structure, procedure, and themes are less well-established, some organizations continue to struggle (Hebbert, 2017). The aim is to re-imagine and drive change from a macro-perspective of digital transformation through a holistic transformation. According to a few studies, a company's risk and potential from digital technology should be addressed holistically (Vaska, Massaro, Bagrotto, & Dal Mass, 2021). The strategy will aid organizations in their digital transformation efforts and serve as a unifying notion for business strategy coordination, prioritization, and implementation (Hess et al., 2016). When dealing with digital transformation, businesses must establish comprehensive procedures that include digital strategy, digital capabilities, technological development, cooperation, and agility (Vaska, Massaro, Bagrotto, & Dal Mass, 2021). Companies must continue to improve their digital performance and evolve to higher levels of maturity over time in order to achieve success.

- Digital maturity model

In recent years, many digital maturity models have been developed and diversely designed in scientific and management practices with the goal of effectively managing and guiding digital transformation. The models include dimensions with criteria to characterize areas of activity as well as measurement that indicates the evolution path towards maturity (Teichert, 2019). A dimension should be a component that specifies a field of action and denotes a significant, necessary, and distinct aspect of digital maturity. The maturity dimensions identified describe an organization's ability to deal with digital transformation (Vaska, Massaro, Bagrotto, & Dal Mass, 2021). Organizations seeking to improve their digital maturity must take a comprehensive approach. (Bughin & Van Zeebroeck, 2017).

Previous reviews of digital maturity models have already been conducted by practitioners in business consulting group and academic researches with different domains across industries such as commercial of e-commerce, digital marketing and manufacturing fields. (Remane & Hanelt, 2017; Westerman & McAfee, 2012; Roman, 2019; Teichert, 2019; Phalitnonkiat, 2018). However, there is still a lack of understanding about the most common maturity dimensions that can be applied to existing models. These dimensions are thought to



be appropriate for the realm of sport, especially in the sport media segment. This study will be able to identify commonalities and undiscovered dimensions by reviewing and analyzing existing maturity models in order to propose the framework that Thai sport media will follow.

- Forrester's business digital maturity model 4.0

Forrester's business digital maturity model 4.0 has explained four key dimensions of culture, technology, organization and insight to determine how the organization transforms digitally to reach its maturity level (Gill and Van Boskirk, 2016). However, some researchers may define this differently with additional dimensions of customers and strategy. Practitioners in consulting firms such as Deloitte are developing a digital transformation model and identifying organizations with various dimensions (Anderson & William, 2018).

- Digital Quotient

Wilmott and Jose (2015), from McKinsey company, have developed a single and simple metric for the digital maturity of the organization, so called, Digital Quotient or DQ. It analyzes digital strengths and weaknesses across business units and prioritizes those with the greatest influence. The performance is evaluated based on four dimensions of strategy, culture, organization and technological capability with several subdimensions (e.g., risk appetite, connectivity). This model primarily serves as a high-level road map for executives and organizations seeking to establish digitization and thrive in the digital age.

- Digital Maturity Model University St. Gallen

This model suggests by Berghaus and Back (Teichert, 2019) with the nine components of customer experiences, product innovation, strategy, organization, digitalization process, collaboration, information technology, culture and expertise and the transformation management. The advantage of this model is to cover major aspects of the organization and conducted based on a survey which is suitable for self- analysis within the organization.

- PWC maturity path

Another PWC model, which proposed a maturity path, evaluated digital maturity in the industrial sector (Grover & Damle, 2020). The goal of the assessment was to look at the benefits of digitizing a company's vertical and horizontal value chains, as well as preparing a digital product and service portfolio. Companies are assessed across seven dimensions: digital business models and customer access, products and service offerings, vertical and horizontal value chain integration, data and analytics as a core capability, IT agility architecture,



compliance (security, legal, and tax), and organization, including employees and digital cultures (Remane & Hanelt, 2017).

- Deloitte and TM Forum

The research by Deloitte and TM forum develops a tool for measuring digital maturity which consisting of the five dimensions: customer, strategy, technology, operations, organizational culture and people. This tool came from the test and contribution of several international companies (Anderson & William, 2018). The model is beneficial to provide the details of 28 sub-dimensions and creates a holistic view of digital maturity across the organization which serves the business organization.

- The Open Digital Manufacturing Maturity Model (ODMM) tool

A maturity diagnostic survey for a digital manufacturing company is represented by this model. It is divided into three sections: production design and technological preparation, production, management, and logistics (Aslanova & Kulichkinam, 2020). Strategy is divided into six dimensions: digital culture, talent and skill, customer experience, data centricity, service innovation and optimized delivery, and digital technology leadership. This model has been tailored to the organization's production requirements, taking into account the modern digitization paradigm trend of AI and big data. The disadvantage of this model is that it is focused on digital and IT, with less emphasis on the human aspect.

- Digital maturity matrix MIT & Capgemini

Westermann, Bonnet, & McAfee (2014) worked on this model and suggested the two core dimensions on transformation management and the digital intensity. The advantage of this model is simplified for application and mostly based on expert evaluation and opinion.

Aside from practitioner key models, academic studies in many industries have worked on digital maturity models with the extension of several parameters. For example, Valdez-De-Leon (2016) proposes a digital maturity model for the telecommunications industry, complete with significant technological involvement and industrial dominance characteristics. Some research creates a model that includes a practical digital transformation framework for use across industries (Gimpel et al., 2018). Other study examines the maturity model from the perspective of the entire organization, with a focus on the agility of university information services (Gunsberg et al., 2018). Furthermore, Peter Peter, Kraft, and Lindeque (2020) developed a paradigm for incorporating customer centricity into design across industries. Berghaus, Back, & Kaltenrieder (2017) proposes a similar model with an extension to nine



dimensions to include customer experience, product innovation, strategy, organization, digitization process, collaboration, information technology, culture and expertise, and transformation management.

Most models include four fundamental characteristics: strategy, organization, operation, and culture, as well as several components that are consistent with the industry's focus and involvement. Many sectors are commencing on the transformation journey and the process to redefine the appropriate one since digital maturity is a new area. However, there is no model that can be used to describe the sport media phenomenon. The goal of this study is to conduct a review and synthesis of past research, as well as to identify the relevant dimensions that serve the sport media sector. What will be the relevant criteria for guiding digital maturity in the sport media area is the question.

Methodology

A literature review is conducted with the analysis to understand the concepts and find the related criteria dimensions in previous models. This section analyzes and compares the different dimensions of the key maturity models from fourteen review of previous studies. The fourteen different maturity models are determined from the search screening to find the potential digital maturity model covering various industries with their areas of application.

The search procedure

The major tool used for preliminary search is the google search, which supports a freely accessible web search engine and links to the publishing format and disciplines. The search terms and the 6 key words were used as follows - Digitization/ Digitalization; Digital transformation; Digital maturity model; Digital capability; Digital transformation maturity; and Dimension/Component of digital transformation.

Since digitization is highly practice-driven, there are not only scientific maturity model for manufacturing sector but also other models approached from practitioners and other stakeholders in management (Weber, Königsberger, Kassner, & Mitschang, 2017). As a result, the models of management consultancies, which act as intermediaries between theory and practice and accompany change processes as external and independent institutions, are considered in this research.

In the initial screening phase, there are twenty-five articles to be considered. Key word screening was used to evaluate the articles' applicability and relevancy. Secondary screening



is performed by abstract screening and reviewing to identify relevant studies that focus on digital maturity and detailed characteristics. Finally, 14 out of 25 studies are chosen for further review and analysis. The study focuses on the most influential models because it is assumed that these are the most widely used in practice.

Each model has its own distinct characteristics. Some models use a specific word as the main dimension, whereas others use different terminology such as customer experiences (Teichert, 2019) and customer centricity are two examples (Peter, Kraft, & Lindeque, 2020). Anderson and William (2018) combined organization and culture, whereas Peter, Kraft, and Lindeque (2020) combined digital leadership and culture. As a result, in this study, any different terminology will be analyzed as belonging to the same category.

Comparative analysis

The models cover both general and specific industries and have 87 dimensions (an average of six components per model) as identified in the comparative analysis (detail in Table 1). The study identifies the five most widely accepted dimensions, which are culture (13), technology (11), organization (11), customer (8), and strategy (8). The remaining three moderate dimensions are innovation (5), operation (4), and data analysis (4). The summary has been illustrated in Figure 1.



Figure 1 Key dominant and moderate dimensions from fourteen digital maturity model



Finding

From review and analysis, there are five prevalent dimensions: culture, technology, organization, customer and strategy. These core competencies are most commonly associated with general management and specific industrial digital transformation.

- Culture

Culture is the most important factor in any digital maturity model. According to the findings of this study, “culture” is included on the maturity dimension in 55% of the models tested. According to Teichert (2019), organizational culture is the most significant barrier to digital transformation. Nearly 70% of practitioner models are culturally based, whereas 40% of academic research is culturally based. The overall organizational setup supporting a digital culture, as well as related changes in a volatile environment, are also important co-factors of digital transformation (Ivancic, Vuksic, & Spremic, 2019). According to this study, a dynamic cultural perspective can have a positive impact on digital maturity and transformation efforts.

- Technology

In domain-specific models, technology has received the most attention. In many industries, it plays a critical role in causing upheaval. According to CISCO (2020), 86 percent of firms see technology as one of the reasons driving disruption, and digitization as a key growth. 2014 (Westermann, Bonnet, and McAfee, 2014). However, technology is only one aspect; an integrated approach is required.

- Organization

The organization displays the various effective criteria and their connections to other dimensions. To encourage digitalization, research suggests incorporating other features beyond organizational boundaries when designing organizations. Management techniques, cross-functional collaboration, resource allocation, and digital literacy should all be ingrained in the organization (Anderson & William, 2017).

- Customer

In this research, “customer insight and experience” are group in the same category under customer. It is commonly represented in general maturity model. Digital transformation initiatives are focused on reimagining customer expectations as a result of technological advancements that have significantly altered their consumption behaviors. Companies that have been digitally changed must proactively reinvent their customer value proposition and combine digitization with customer interaction (Teichert, 2019).



Recent research in sports business indicates that the more a sports brand expresses the inner-self and reflects the social-self of sports consumers, the more involved, emotionally attached and loyal these consumers become (Jairak, 2021; Trusjaithum, Stotlar, Kutintara, & Choengklinchan, 2018).

- Strategy

In digital transformation and digital maturity model, “what is the digital strategy” becomes a unique term for the practitioners to be considered. The digital strategy supports strategic goals and main processes in digital mature companies (Teichert, 2019). An organization that creates the outstanding results and makes a difference usually develops a right and a clear digital strategy. Strategy targets the competitive advantage with the contribution of digital initiatives. Therefore, the digital strategy of the company should be coordinated and synced with the other business strategies (Anderson & William, 2018).

- Operation, Innovation and Data Analysis

These three dimensions has been moderately mentioned in comparative studies (in Table 1) and each has been referred diversely in both general and specific domains of maturity model, based on its industry relevancy. With digital transformation operations are viewed strategically with the exploitation of digital tools and focusing on efficiency and effectiveness aspects of the business (Anderson & William, 2018). Most companies are engaging in data analytics with other dimension at varying levels of intensity. Some industries conjunct the better data analysis for decision and with the quick change in the operation by exploiting the innovative technology to improve the traditional process (Teichert, 2019)

- Engagement Channel

Sport consumption has evolved to interacting with other types of social channel, digital platform, and event rather than traditional media, as social media continues to dominate. Today's fans are seeking for more technologically advanced and individualized solutions that provide high-quality material in real time and on the appropriate channel (Rust, 2020).

This presents both problems and opportunity for sport media to continue to interact with audiences and supporters through a new channel of engagement. Traditional media engagement is a crucial component of the sport media industry's interaction with viewers, according to Thailand media landscape (2021). It plays an important role in sports media and is particularly vulnerable in today's chaotic market.

According to the literature review, comparative analysis of maturity model dimension and the understanding of sport media gap, the study console all relevant information to develop a proposed model of digital maturity for sport media industry in Thailand. As a result, this study proposes the dimensions to construct a digital maturity model for Thai sport media composing of: culture, technology, organization, customer, strategy, operation, innovation, data analysis and engagement channel, as illustrated in Figure 2.



Figure 2 Dimension of Digital Maturity for Sport Media - Thai Perspective

A growing number of maturity models have been developed and presented. Most models have different characteristics and cover different dimensions depending on the industry domain focus and application area. This was difficult because some models used a single word to designate a specific dimension, whereas others used different terminology with the same connotation. Furthermore, it is favorable to understand how the model indication should be established for the sport media industry, as inevitably, the sport media industry will follow suit.

This study provides a conceptual framework and defined elements for developing a digital maturity model for sport media in Thailand. There are nine dimensions to consider: culture, technology, organization, customer, strategy, operation, innovation, data analysis, and engagement channel. It should be noted that digital technology is constantly evolving, and reaching maturity is a continuous process. Finally, because there is currently no maturity model for the Thai sport media sector, this research primarily addresses the aforementioned gap in the sport domain area. The approach for building a framework from review and analysis is sound, and future research will focus on digital maturity measurement for sport media.



Conclusion

The rising focus on digital transformation has resulted in the development of a digital maturity model with composited dimensions to assist industry-wide digital transformation in both specific and generic domains. However, there is a lack of conceptual definition to support sport media domain. This study presents an idea and integrated dimensions for developing a digital maturity model framework for sport media in Thailand. The conceptual framework is based on the discovered gap in sport media review, and it concludes that sport media's interaction channel is at risk of digital disruption. Culture, technology, organization, customer, strategy, operation, innovation, data analysis, and engagement channel are the nine capability dimensions that the industry should focus. The notion remains a new territory for sport media in Thailand. This study limits to review and identify the relevant dimensions to serve the missing sport domain, yet to assess the maturity level. Future research should be directed to verify the dimensions with expert in sport arena as the developed framework only provides an elementary concept. In addition, more research is needed for the measurement of the relevant maturity model with the relevant sport industry and a procedure on how to assess should be a focus of further research.



Table 1 Key dominant and moderate dimensions from fourteen digital maturity model

no	Key Maturity Models	Model Character (dimension no.)	Domain	Culture	Technology	Organization	Strategy	Customer	Innovation	Operation	Data analysis	Process	Collaboration	Transformation management	Value Chain	Resource/People/Leadership	Product & Service	Leadership	Social & network	Compliance	Digital marketing
1	McKinsey (2015)	4	General	✓	✓	✓	✓														
2	Forrester model 4.0 (2016)	4	Specific (eCommerce)	✓	✓	✓		✓													
3	Acatech's industry 4.0 (2018)	4	Specific (Manufacturing)	✓	✓	✓										✓					
4	Deloitte & TM forum (2018)	5	General	✓	✓		✓	✓		✓											
5	CDLM by Rouzbeh Shabani (2019)	5	Specific (Construction)	✓	✓	✓							✓						✓		
6	Newman (2017)	6	Specific (Manufacturing)	✓		✓	✓	✓		✓						✓					
7	ODMM (2017)	6	General	✓	✓		✓	✓	✓												
8	Gunsberg et al. (2018)	6	Specific (University)	✓		✓	✓	✓	✓							✓		✓			
9	Valdez-De-Leon (2016)	7	Specific (Telecom)	✓	✓	✓	✓		✓	✓					✓						
10	PWC (2016)	7	Specific (Manufacturing)	✓	✓	✓					✓				✓		✓				✓
11	Gimpel et al. (2018)	7	General			✓		✓		✓	✓			✓	✓		✓				
12	Peter et al (2020)	7	General	✓	✓			✓			✓							✓			
13	University of St. Gallen (2016)	9	General	✓	✓	✓	✓	✓	✓			✓	✓	✓							✓
14	Back & Kaltenrieder (2017)	9	General	✓	✓	✓	✓	✓	✓			✓	✓	✓							
Total				13	11	11	8	8	5	4	4	3	3	3	3	3	2	2	1	1	1



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References

- Anderson, C. & William, E. (2018). *Digital maturity model - Achieving digital maturity to drive growth*. Retrieved August 10, 2021, from Deloitte website: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/deloitte-digital-maturity-model.pdf>
- Aslanova, I. V. & Kulichkinam, A. I. (2020). Digital maturity: Definition and model. In A. D. Nazarov (ed.), *Proceeding of the International Scientific and Practical Conference "Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth" (MTDE 2020)* (p.443-449). Paris, France: Atlantis Press. doi: 10.2991/aebmr.k.200502.073
- Berghaus, S., Back, A., & Kaltenrieder, B. (2017). *Digital maturity & transformation report 2017*. Retrieved August 13, 2021 from St. Gallen University website: <https://office-roxx.de/wp-content/uploads/2019/01/digital-maturity-transformation-report-2017.pdf>
- Bughin, J., & Van Zeebroeck, N. (2017). The Best Response to Digital Disruption. *MIT Sloan Management Review*, 58(1), 80-86.
- Chankuna, D., Chanthonsarasom, A., Inchana, K., Sukdee, T., & Sriboon, N. (2021). Impact of COVID-19 on Sport Industry in Thailand. *Academic Journal of Thailand National Sports University*, 13(2), 263-276. [in Thai]
- Chunhachinda, P. (2019). Digital transformation and the progress of Thailand's fintech. *Suthiparithat*, 33(106), 251-264. [in Thai]
- CISCO. (2020). *2020 Asia Pacific SMB digital maturity study*. Retrieved August 10, 2021 from CISCO website: https://www.cisco.com/c/dam/global/en_sg/solutions/small-business/pdfs/ebookciscosmbdigitalmaturityi5-with-markets.pdf
- Gimpel, H., Hosseini, S., Xaver, R., Huber, R., Probst, L., Röglinger, M., & Faisst, U. (2018). Structuring digital transformation: A framework of action fields and its application at ZEISS. *Journal of Information Technology*, 19(1), 31-54.



- Grover B. & Damle M. (2020). Comparison of select digital maturity models for digital transformation dynamics. *PalArch's Journal of Archaeology of Egypt/ Egyptology*, 17(6), 4836-4855.
- Gunsberg, D., Callow, B., Ryan, B., Suthers, J., Baker, P. A., & Richardson, J. (2018). Applying an organisational agility maturity model. *Journal of Organizational Change Management*, 31(6), 1315–1343. doi: 10.1108/JOCM-10-2017-0398.
- Hebbert, L. (2017). *Digital transformation: Build your organization's future for the innovation*. London: Bloomsbury Publishing Plc.
- Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for formulating a digital transformation strategy. *MIS Quarterly Executive*, 15(2), 123-139.
- Infoquest. (2021). *Thailand Media Landscape 2021*. Retrieved August 8, 2021, from Infoquest website: <https://www.infoquest.co.th/thailand-media-landscape-2021/overview-en>
- Ivancic, L., Vuksic, V. B. & Spremic M. (2019). Mastering the digital transformation process: business practices and lessons learned, *Technology Innovation Management Review*, 9(2), 36-50.
- Jairak, R. (2021). A maturity model for improving customer relationships in digital marketing management. *Journal of Modern Management Science*, 14(1), 1-16.
- Jonjoubsong, L. & Thammabunwarit, N. (2021). Digital business model and digital ecosystem. *Business Review*, 13(1), 1-7.
- Mastromartino, B., Ross, W. J., Wear, H., & Naraine, M. L. (2020). Thinking outside the 'box': A discussion of sports fans, teams, and the environment in the context of COVID-19. *Sport in Society*, 23(11), 1707-1723. doi: 10.1080/17430437.2020.1804108
- Peter, M. K., Kraft C., & Lindeque J. (2020) Strategic action field of Swiss SMEs and large enterprises. *Journal of Strategy and Management*, 13(1), 160-180. doi: 10.1108/JSMA-05-2019-0070
- Phalitnonkiat, P. (2018). The future paths of sport marketing. *Journal of Business Administration*, 41(157), 62-77.
- Poomkumarn, S., & Sonchan, W. (2018). Pattern of communication of football fans in the digital age, 12(1), 423-442. [in Thai]
- Remane, G., & Hanelt, A. (2017). Discovering digital business models in traditional industries. *Journal of Business Strategy*, 38(2), 41-55.



- Rust, R. (2020). The future of marketing. *International Journal of Research in Marketing*, 37(1), 15-26. doi: 10.1016/j.ijresmar.2019.08.002
- Teichert, R. (2019). Digital transformation maturity: A systematic review of literature. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 67(149), 1673-1687.
- Trusjaithum, P., Stotlar, D. K., Kutintara, I., & Choengklinchan, A. (2018). The Factors Contributing to Brand Image of Sport Teams in Thailand. *Asian Sport Management Review*, 13, 14-20.
- Valdez-De-Leon, O. (2016). A digital maturity model for telecommunication services provides. *Technology Innovation Management Review*, 6(8), 19-32.
- Vaska, S., Massaro, M., Bagrotto, E. M., & Dal Mass, F. (2021). The digital transformation of business model innovation: A structured literature review. *Frontiers in Psychology*, 11, 1-18. doi: 10.3389/fpsyg.2020.539363
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889-901. doi: 10.1016/j.jbusres.2019.09.022
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28(2), 118-144. doi: 10.1016/j.jsis.2019.01.003
- Weber, C., Königsberger, J., Kassner, L., & Mitschang, B. (2017). M2DDM – A maturity model for data-driven manufacturing. *Procedia CIRP*, 63, 173-178. doi: 10.1016/j.procir.2017.03.309
- Westerman, G., & McAfee, A. (2012). *The Digital Advantage: How Digital Leaders Outperform Their Peers in Every Industry*. Retrieved August 9, 2021, from MIT Sloan School of Management website: <https://rb.gy/ufpwak>
- Westermann, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: turning technology into business transformation*. Boston: Harvard Business School Publishing.
- Wilmott, P. & Jose, C. S. (2015). *McKinsey Quarterly 2015 Number 3*. Retrieved August 7, 2021, from McKinsey website: <https://mck.co/2SJK7b5>