

# **Developing Digital Marketing Maturity Index Indicator In The Training Industry**

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## **Abstract**

Digital business transactions in Indonesia reached US\$ 1.6 billion in 2021. It showed that the Internet is a very strategic digital marketing tool. From the initial observations of this research, 95% of the fifty training industries in Jakarta stated that digital marketing was very much-needed, and only 20% of the training industry partially implemented digital marketing. This study aims to provide an instrument for establishing digital marketing maturity index indicators. By using a mixed-methods approach, this study concludes that there are six dimensions and twenty-five indicators that represent the digital marketing maturity index, namely: interconnectivity (Business to Business, Customer to Customer, Business to Customer), platform & technology (social media, digital technology, channel), digital relations (digital communication through two-way social media, real-time communication, influencers), leadership and management (vision, mission, plans, programs, and strategies), human resources and human resources (availability of budget, availability of digital skill qualifications), organizational orientation (campaign, and measurement).

**Keywords:** maturity index, digital marketing, mixed methods, training industry

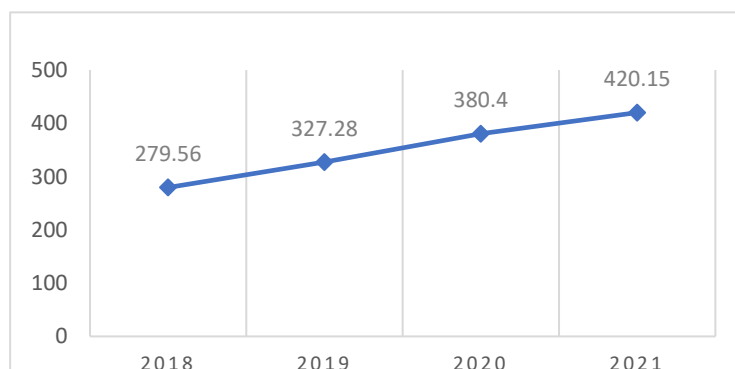
## **1. Introduction**

The growth of internet users in the world has increased from 4.66 billion up to 316 million users. It means 7.3% in 2020 and experienced a significant increase during the Covid-19 pandemic, with 59.5% in 2021 (The Digital Global Overview Report, 2021). The growth of internet users will continue to rise and grow along with the implementation and developments in Industry 4.0, which gives birth to integration from all lines. The increase in internet users every year to the ease of accessing various information, entertainment, transactions, and communications from multiple parts of the world. Internet users by simply clicking on the available pages. By writing simple keywords, internet users can find all the information through the available search engines. Internet users can find all the information they want.

It can be easy to access various information, but the Internet can also penetrate space and time so that anyone can access the Internet anywhere and anytime. The development of the internet world has led to several revolutions in the use of digital media platforms available on

the Internet, one of which is digital marketing as a medium for marketing products and services sold. Digital marketing refers to digital marketing as "The use of digital technology to create integrated, targeted, and measurable communications that help acquire and retain customers while building deeper relationships with them (Royle & Laing, 2014). The application of digital marketing is needed to increase sales volume and be able to reach a vast market than using traditional marketing (Herhausen et al., 2020).

Figure 1 shows the growth of Digital Marketing in Indonesia. The increase in internet users and the increasing buying and selling power on the Internet have prompted significant changes in advertising, especially digital marketing. Digital marketing, following developments from time to time, has increased in terms of the tools or tools used, the market share with the target, and the estimated number. Digital Marketing promotes sales of products or services using digital media already available on several platforms or social media and will dominate throughout the Internet or in the world.



**Fig.1 Digital Marketing Growth Data in Indonesia**  
**Source:** *Technology for Indonesia 2021*

The Internet has become so widespread in the modern business environment that social media and the continuous evolution of the types and forms of customer interaction, especially in digital marketing (Kohler, T., Fueller, J., Stieger, D., & Matzler et al., n.d.). Hardly any company, large or small, can escape its influence, making the Internet stronger than ever, more accessible, and more vital. Digital business transactions in Indonesia reached US\$ 1.6 billion in 2021. It showed that the Internet is a very strategic digital marketing tool. From the initial observations of this research, 95% of the fifty training industries in Jakarta stated that digital marketing was very much-needed, and only 20% of the training industry partially implemented digital marketing. Digital marketing is essential for the training industry to boost the market and competitive advantage. This study aims to provide an instrument for establishing digital marketing maturity index indicators.

Digital technology has become essential in training businesses to reach a vast market (Brennan & Croft, 2012). In getting a bigger market, digital marketing put digital relations play an essential role in modern business communication, social networking, and consumer relations among people (Butt, 2021). On the other hand, social media is a significant factor, especially for the younger generation, and millennials are most likely to feel the impact of social media who decides they buy the product (Blanka et al., 2022). The transformation of marketing media into digital strategy in current marketing becomes more strategic for companies or business people in exchange offers. It is made possible by a series of adaptive digital touchpoints spanning marketing activities, institutions, processes, and customers.

In this era, digital marketing describes the significant changes in marketing, which have led to several technological developments that have impacted business, research, and marketing practices (Lamberton & Stephen, 2016). Digital marketing refers to digital marketing as "The use of digital technology to create integrated, targeted, and measurable communications that help acquire and retain customers while building deeper relationships with them (Royle & Laing, 2014). Digital marketing is carried out digitally by considering activities, systems, and processes facilitated by digital technology to create, communicate, and provide information related to the sale & purchase of goods or services (Kannan & Li, 2017) (Wymbs, 2011). From all perspectives, the era of industry 4.0 has placed digital marketing as a strategy that uses digital technology to reach a larger market and interact with customers in a deep, integrated, and comprehensive manner.

Organizations can apply effective digital marketing must ensure digital maturity in their Business (Hasbullah & Bareduan, 2021). In determining the digital marketing maturity indicator, you can consider the marketing strategy used, including the planning process, implementation related to pricing, promotion, distribution, ideas, goods, and services to create exchanges that meet marketing objectives (Hamzah, 2021). The marketing strategy aims to achieve company goals, where digital marketing is a part of the strategy. In a practical step to market and increase sales by creating or displaying content (images or videos) in advertisements using the Internet through several existing platforms such as marketplaces, social media, email marketing, influencers, search engine optimization, and artificial intelligence gaining target market (Royle & Laing, 2014). Digital marketing platforms rely on the Internet, social media, and all the attributes and accompanying technology tools to reach a wider market reach.

Here are some digital marketing maturity indicators from a practical perspective. Plannuh Inc. ([www.plannuh.com](http://www.plannuh.com)) is a leading organization that reviews artificial intelligence-based marketing platforms, proposing an operational marketing index (OMI) to measure the operating performance of marketing capabilities. This index stipulates several aspects: planning, budgeting, visibility, and initiative. In addition, another leading institution ([prnewswire.com](http://prnewswire.com)) mentions digital marketing maturity to improve marketing. It sets key indicators, including marketing orientation, leadership, tools, platform, digital experience, budget, and workforce. Meanwhile, [kickframe.com](http://kickframe.com) identifies digital marketing maturity, including content, search engine optimization, demographic targets, email, and social media channels. These perspectives underline the Internet & social media as storylines in digital marketing.

Applying digital marketing means transforming conventional marketing into a digital business, popularly called digital transformation. In marketing digital, interconnection consists of B2B (*Business-to-Business*), B2C (*Business to Customer*), and C2C/Consumer to customer (Olson et al., 2021). Business to business is a model of selling products or services carried out by businesses and intended for other businesses (Dant P. Rajiv., 2008). It is also a digital marketing platform for creating Business-to-Business value (w. James., 2015). Business to Consumer is a model of the process of selling products and services directly to consumers who are end-users or end-users in general. In these retail models, products move directly from businesses to end users who buy products or services for personal use (w. James., 2015). Customer to Customer is a customer who sells other customer products through social media or social networking sites, and currently, the Customer to Customer trade has multiplied (Zhao et al., 2019). Interconnection between business and customers in marketing digital is more connected with wireless communication through the Internet of things, and information flows

in the network and the cloud. Also, information transparency creates interconnection of business to customers and quickly access all the information.

Mostly, countries and business organizations determine indicators of digital transformation in the I4.0 era based on dimensions from prominent references in adopting I4.0 for digital transformation, such as (Hasbullah et al., 2021):

- a. Dreamy (Dreamy is Digital Readiness Assessment Maturity Model), dimensions: organization, process, technology, monitoring & control (Anna De Carolis, 2018), (Mittal et al., 2019).
- b. Rami 4.0 (References Architectural Model for Industry 4.0), dimensions: flexibility in systems and machines, function distribution throughout networks, the participation of all hierarchy levels, communication of all participants, the product is part of the network (Singapore Economy Development Board, 2017), (Schweichhart, 2019).
- c. Acatech (Akademie der Technikwissenschaften), dimensions: organizational structure, technology, culture, information system (Günther Schuh, Reiner Anderl, Jürgen Gausemeier, Michael ten Hompel, n.d.), Industrie Maturity Index, Government of Germany 2016.
- d. Singapore Smart Industry Index, dimensions: process, technology, organizations (Singapore Economy Development Board, 2017)
- e. Simmi 4.0 (System Integration Maturity Model I4.0.), dimensions: vertical integration (organizational/strategical aspects), horizontal integration (enterprise system), digital product development (digital production), cross-sectional technology criteria (cross-sectional, technology) (Leyh et al., 2016).

Many others reference adopting I4.0 for digital transformation. In Indonesia, as a developing country, business organizations adopt INDI 4.0 (Indonesia Industry 4.0 Index) to determine digital transformation dimensions consisting of management & organization, people and culture, product and service, technology, and process operation (Ministry of Industry, Indonesia, 2018). In enhancing INDI 4.0, to capture digital transformation in adopting I4.0 more accurately and effectively, a study was developed by adding dimensions of I4.0 maturity index such as data life-cycle, design principle I4.0, technology, horizontal and vertical integration in an organization, and smart product life cycle (Hasbullah et al., 2021). The data life cycle consists of data sources, collecting, transferring, storing, processing, analyzing, and transforming into information to make the decision (Tao et al., 2018). Design principle I4.0 means four design principles in implementing digital transformation in Industry 4.0: interconnection, information transparency, decentralized decisions, and technical assistance by robots and computer systems (Hermann et al., 2016). Technology in digital transformations is a keyword that represents Industry 4.0 (I4.0), where the top four most frequently cited such as the Internet of things, big data, cloud, and cyber Physical-system (Pacchini et al., 2019). Another aspect of digital transformation is vertical integration from the bottom structure (operations level) to top management (business level) and horizontal integration from supply chain suppliers to customers. (Hasbullah et al., 2021). A smart product life-cycle means integrating smart design, planning, production, monitoring, and logistics. The product life-cycle is the whole process of providing a product from the beginning (design) to end-users (Tao et al., 2018). Digital transformation in the I4.0 era inspires digital marketing to boost sales and competitive advantage (Vilkaite-Vaitone & Sologubas, 2019).

More specifically, Herhausen determined the digital marketing dimension of channels, social media, digital relationships, and digital technology (Herhausen et al., 2020). Channel in digital marketing means e-commerce platforms to make it easier for companies or producers to market and distribute products to consumers. Companies must not only focus on suppliers, *Res Militaris*, vol.12, n°4, December Issue 2022

distributors, and consumers but also see how technological developments can change strategies in marketing. Using marketing channels in marketing digital can be chosen by developing own e-commerce or collaborating with the external existing successful giant e-commerce like Amazon, JD.com, Alibaba, Carousell, Shopee, Tokopedia, and other prominent e-commerce. Social media allows business organizations to communicate with millions of other users. It is an effective strategy in marketing digital to sell products through social media such as Facebook, Twitter, Instagram, YouTube, TikTok, Line, LinkedIn, etc.

The digital relationship is the relationship between the digital communication framework with knowing and not knowing each other in individuals, which is called a digital relationship. Interaction in digital relationships takes place dynamically and continuously between parties who depend on each other to do business. (Lambert et al., 2005). Digital Relations play an essential role in modern business communication, social networking, and consumerism relations among people in this contemporary world (Butt, 2021). A business can not ignore digital relationships if it wants to apply marketing digital successfully.

All literature and references above put technology as an essential dimension in digital transformation and marketing. Digital technology includes all types of technology such as electronic equipment, systems, robots, artificial intelligence, big data processing, and other applications. As mentioned above, technology elements in digital transformations, especially marketing digital, are a significant factor representing Industry 4.0. The most frequently cited include the Internet of things, big data, cloud, and cyber Physical-system (Pacchini et al., 2019). This study put technology as a leading dimension to developing digital marketing maturity as confirmation of previous research and literature.

The purpose of this study is to identify dimensions of digital marketing maturity. It focused on the essential factors of digital marketing applications by considering the literature analysis and practical perspective in identifying key elements in the digital marketing maturity concept. These facts of this study appear to explore the dimension of marketing digital maturity based on comparing the existing maturity digital used by business organizations and literature review. The study hopes to contribute to the industry, academics, and practitioners adopting digital marketing by improving the digital maturity level.

## **2. Material & Method**

Mixed methods provide a set of assumptions about knowledge and inquiry underpinning the research approach (Hasbullah et al., 2021). It distinguishes from quantitative and qualitative approaches based on a philosophy of positivism and interpretivism. This study used mixed methods according to research objectives. It is associated with the pragmatism paradigm that can answer these research questions correctly: What dimensions and indicators indicate digital marketing maturity levels?

In answering this research question, the first phase of this research is a qualitative approach by exploring various leading literature to collect data and information on crucial digital marketing dimensions and indicators. Then analyze and select digital marketing maturity indicators through factual observations, focus group discussions (FGD), and interviews with three prominent marketing business leaders, two digital marketing academics, and two professionals and practitioners.

The second phase uses a quantitative approach through surveys to evaluate dimensions and indicators offered from this study to fifty (purposive samples) practitioners, academics of



digital marketing managers, and professionals who work, deeply understand, and are experience in digital marketing. So this approach used in this study is a mixed-method by combining quantitative and qualitative methods, specifically called exploratory mixed-method (Creswell, W. J., & Plano Clark, 2009).

**Table 1.** *Marketing Digital Dimensions and Indicators*

(1)	Dimensi	(2)	Indikator	(3)	References	(4) Approval Confirmation Survey of Indicator of Digital Marketing Maturity)
Interconnection		1.	B2B (Business to Business)		(Olson et al., 2021), (Hermann et al., 2016).	71,34% (High + Very High)
		2.	B2C (Business to Customers)			70,12% (High + Very High)
		3.	C2C (Customers to Customers)			44,66% (High + Very High)
Technology elements		1.	Internet of things		(Herhausen et al., 2020), (Hermann et al., 2016), (Tao et al., 2018), (Pacchini et al., 2019)	86,43% (High + Very High)
		2.	Data life-cycle technology			84,86% (High + Very High)
		3.	Integrated system			81,09% (High + Very High)
Digital Relationship		1.	Internal organization		(Lambert et al., 2005), (Herhausen et al., 2020), (Butt, 2021).	78,74% (High + Very High)
		2.	External organization			71,97% (High + Very High)
		3.	Involving digital influencer			25,76% (High + Very High)
Leadership & Management		1.	Top Management commitment on digital business		(Singapore Economy Development Board, 2017), (Schweichhart, 2019), (Ministry of Industry, Indonesia, 2018).	67,87% (High + Very High)
		2.	Digital vision			44,13% (High + Very High)
		3.	Program and strategy			58,16% (High + Very High)
Resources and manpower		1.	Financial support		(Herhausen et al., 2020), (Mittal et al., 2019), (Leyh et al., 2016).	57,26% (High + Very High)
		2.	Staff and expert's availability			69,11% (High + Very High)
		3.	Facility & infrastrucrure			68,76% (High + Very High)
Channel		1.	Applying E-commerce		(Jennings et al., 2015), (Herhausen et al., 2020), (Pelton et al., 2002)	79,39% (High + Very High)
		2.	Digital sells, orders, transactions, administration, and delivery			88,15 (High + Very High)

Social Media	3.	Involving leading digital business application		26,36% (High + Very High)
	1.	Customer relation		68,14% (High + Very High)
	2.	Advertising	(Herhausen et al., 2020), (Pelton et al., 2002)	47,16% (High + Very High)
	3.	Sales & Marketing		77,16% (High + Very High)

### 3. Result and Discussion

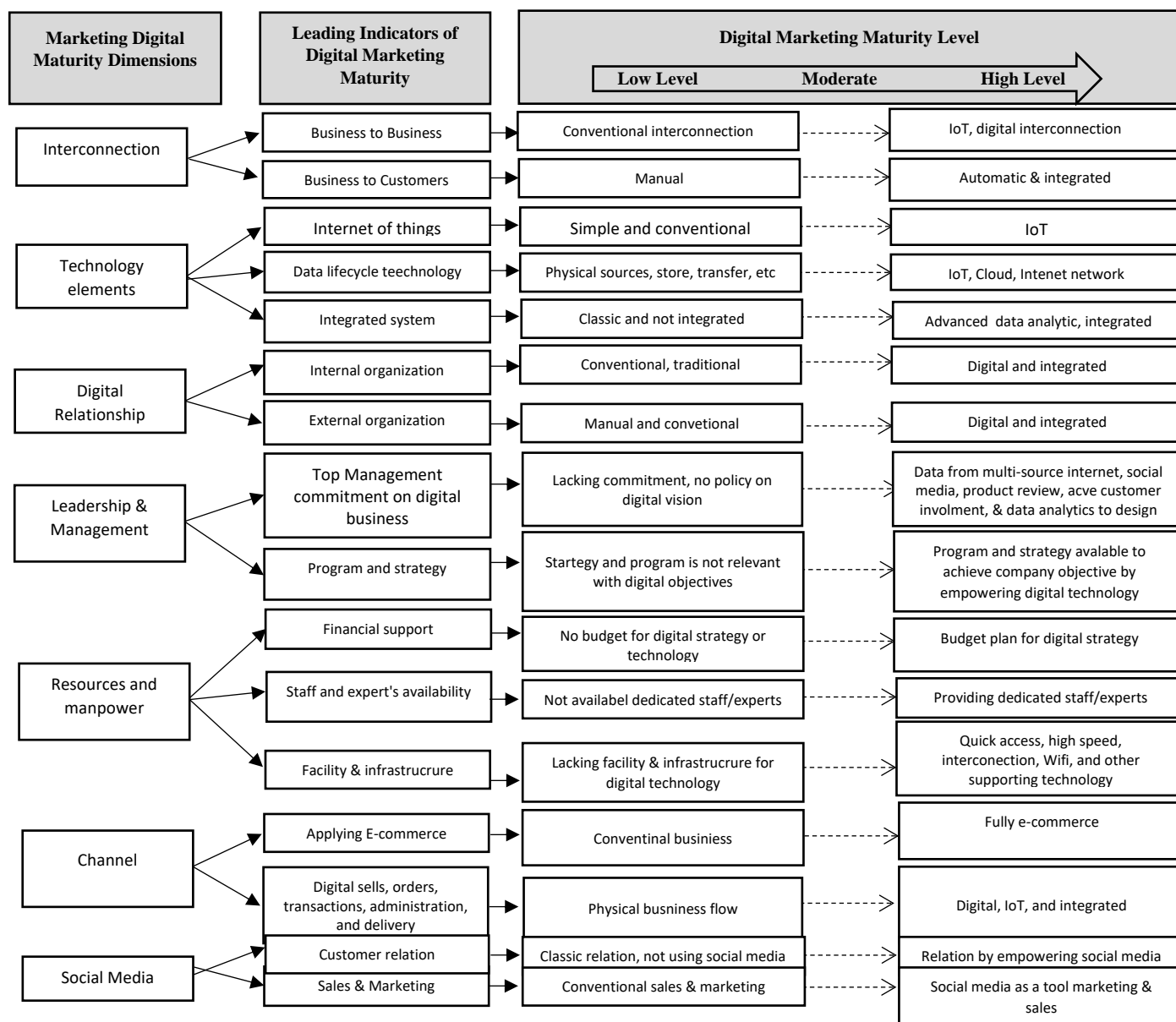
This research question is: What dimensions and indicators indicate digital marketing maturity levels?. By exploring some training industries in Jakarta's capital city area, they lack capturing marketing digital essential features as displayed in literature and digital marketing practices of leading prominent industries. These findings of this study were confirmed and validated by experts and practitioners as FGD results. Based on the analysis of the literature on digital marketing maturity, this study proposes dimensions and indicator that reflect the maturity level of marketing digital as shown in Table 1. below:

After extracting relevant dimensions and indicators, Reflecting digital marketing maturity from some pieces of literature, business practices, and internet sources, focus group discussion results validated seven dimensions and twenty-one indicators representing digital marketing maturity (columns 1 & 2 in Table 1). FGD consisted of three prominent marketing business leaders, two digital marketing academics, and two professionals and practitioners in digital marketing. Then this study evaluated all indicators of digital marketing maturity by a survey to judge the level of importance for all indicators whether all indicators are relevant to digital marketing maturity with the Likert scale of importance level : 0 = Not relevant, 1 = Low, 2 = moderate, 3 = high, 4 = very high. Recommendation from FGD this study took indicators of marketing digital maturity with high and very high importance only with a percentage from respondents more than 50%.

In this study, the answers from respondents are verified by visiting the digital marketing business and observing relevant indicators from a business practice perspective. Although some indicators still lack the same perception and importance of terminology and definition, all agreed about the indicators that are offered. This study proposed terms and descriptions based on literature, and practitioners have other words, calls, and definitions based on company perception. Finally, this study found indicators that represent digital marketing maturity with sixteen indicators from seven dimensions, as shown in Table1. Column 4 in Table 1 shows sixteen from twenty-one indicators with the level of importance at high and very high, with respondent's approval of more than 50%. So, from this result, Figure 1. below represents the framework of digital marketing maturity indicators.

Seven dimensions represent the digital marketing maturity index consisting of interconnections, technology elements, digital relationships, management & leadership, resources and manpower, channel, and social media. From seven dimensions becomes sixteen indicators as a detailed breakdown, such as B2B (Business to Business), B2C (Business to Customers), Internet of things, Data life-cycle technology, Integrated system, Internal organization, External organization, Top Management commitment on digital business, Program and strategy, Financial support, Staff and expert's availability, Facility &

infrastructure, Applying E-commerce, Digital sells, orders, transactions, administration, and delivery, Customer relation, and Sales & Marketing. Indicators excluded from this framework are C2C (Customers to Customers), Involving digital influencers, Digital vision, Involving leading digital business applications, and advertising. These indicators are excluded because they got less than 50% approval in the evaluation survey, as shown in Table 1—column 4.



**Figure 1:** Framework of leading indicators of digital marketing maturity levels

## 4. Conclusion

This study identified indicators that are able to capture readiness levels in digital marketing maturity. This statement was confirmed by more than 50% approval and confirmation of a survey to agree on seven dimensions and sixteen indicators representing digital marketing maturity. The measurement shall refer to the main feature of digital marketing



maturity represented by interconnections, technology elements, digital relationships, management & leadership, resources and manpower, channel, and social media.

This paper completed all dimensions of digital marketing maturity by sixteen indicators to capture maturity level. The user can enhance the accuracy and effectiveness of this instrument, and indicators can be detailed into specific questions (in the survey instrument) to capture the level of digital marketing maturity. This study requires more exploration to complete accuracy and deeper analysis of how a business organization prepares to apply digital marketing.

This paper aims to provide an instrument and framework to measure digital marketing maturity level, especially in the training industry and can be applied to other industries. Furthermore, this study's findings provide a reference for academics and industry to consider selecting indicators of digital marketing maturity in the context of further investigations. Limitations of the paper focus on digital marketing maturity in the training industry, besides significant other dimensions not mentioned and referred. This paper requires more exploration in other aspects and perspectives, welcoming to investigate further, revising, and improving in measuring digital marketing maturity.

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