
Transformation of Business Strategies for Art Galleries in The Industry 4.0 Era : Embracing The Digital Trend and Economic Impact

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Abstract:

This research was conducted at a painting gallery in Bali with the aim of finding answers about the adoption of digital transformation in the development of business strategies in the Industrial Era 4.0. The method used is a qualitative method using data collection techniques in the form of in-depth interviews and field observations. Interviews were conducted with 6 informants as gallery owners/managers/staff and gallery visitors. The results found that the digital transformation carried out is still limited using social media for product marketing, AR and VR technology is still very limited considering the cost limitations. Using technology, especially social media, helps marketing effectiveness and expands the market. However, on the one hand, there are concerns that digital transformation will erode the value of traditional arts and culture. So what needs to be emphasized is the proper use of technology to continue to support the introduction of existing art and culture.

Keywords: *Digital Transformation, Effectiveness, Business Efficiency*

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1. Introduction

In today's increasingly digital world, business transformation is a hot topic for companies everywhere. Advances in information technology and shifts in consumer behavior have changed business models significantly. To adapt to these changes and stay competitive in today's increasingly digital market, businesses must be able to utilize information technology effectively. With today's fast-paced development of technology and information, it will be easy to ignore the need to invest in digital business development (Rochmawati et al., 2023). As is done today, the development of digital business is currently trending in a positive direction. Companies must immediately start preparing for digital transformation.

The term 'new media' emerged in the late 20th century to refer to a new form of media that combines elements of traditional media with the internet. In recent years, new media has been highlighted by the development of social networking sites, which

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provide a platform in cyberspace to build communities and networks of friends that can be accessed by individuals from all over the world.

The digital transformation process in the business world encourages entrepreneurs to initiate and apply innovative technologies and business models to achieve competitive advantage. At the same time, they must also evaluate the costs incurred, the benefits obtained, and the potential risks involved (Banjarnahor et al., 2022). By adapting business processes into the online environment, modern bettors seek to increase the value they offer to customers in the context of increasing demand for better products and services, as well as expansion into international markets. Digital transformation can be explained as the use of digital technology in various aspects of modern society that involves more than just the level of digital literacy and competence. This is related to the ability of companies to successfully implement new technologies and procedures to improve the operational efficiency of their business (Alam, M.S., Arsibal, S.P & Wahyudistira, 2023).

In a theoretical context, digital transformation refers to the process of shifting from analog to digital formats. This transformation has actually taken place for a long time, even without many people realizing it. In the business realm, digital transformation refers to the use of technology in various aspects of business processes. The level of complexity of digital transformation in a business can vary, depending on the size and type of organization involved. For example, if an organization operating in the manufacturing sector intends to carry out digital transformation, many aspects of its business processes need to be transformed into a digital format. This includes how interactions with customers are conducted, as well as the management of logistics and product delivery to customers. Some researchers, such as Bouncken et al (2021), argue that Digital Transformation involves fundamental changes in business operations, products, and processes. In some situations, such changes can even result in entirely new business models. Therefore, all types of organizations and companies, regardless of size or type, must be prepared to adapt or even replace existing business processes with newer ones (Scheppeler, B., & Weber, 2020) which does not necessarily make them comfortable.

Along with digital transformation efforts to maintain business continuity operations, the role of an efficient strategy is increasingly important in adapting to the demands of contemporary society in achieving the Sustainable Development Goals (SDGs) which are part of a competitive advantage. A number of literature shows that research on Digital Transformation aims to capture the latest developments and trends, and is often an emerging research area. However, it is not surprising that until now there has not been a widely accepted definition of the term Digital Transformation (Knudsen, 2020).

Strategy is essential for any business, it represents a long-term plan that integrates the main objectives of the existing Painting Gallery company in Bali and a series of actions that support this goal into a 'cohesive whole' (Favari, 2023). The various 'models' of many impacts that contribute govern the decisions that modern managers take when it comes to developing various supporting strategic initiatives. The digital business strategy should be well defined based on the specific goals of the company, it should be aimed at avoiding the following risks, poor business prospect assessment or inadequate allocation of resources for various digital business initiatives,

inappropriate direction of digital business strategy due to poorly formulated business objectives, inadequate technical support, waste of resources, and so on (Correani et al., 2020). A digital business strategy, as a long-term development plan, based on the company's current performance in the market, explains how the company will allocate the resources needed to achieve its strategic goals and objectives and identify a competitive advantage in the global business market. Developing a digital business strategy involves using new approaches and creating new business models in terms of marketing strategies, human resource strategies, supply chain management strategies, information technology strategies, and more.

The regulations governing businesses in the pre-digital era have undergone significant changes. The development towards the digital era has prompted businesses to renovate their strategic thinking frameworks and review the principles of strategic planning. The impact of digital transformation can be observed in five key strategic aspects, namely in customer relationships, competition, data, innovation, and value creation. In an ever-changing business environment, to stay competitive effectively, comprehensive digital transformation is a must to drive growth and innovation. This plays a very important role, especially in the transition phase towards a more sustainable and inclusive economy in achieving the Sustainable Development Goals (SDGs). (The Sustainable Development Goals Report, 2021), which calls for a fundamental "change of mind" of businesses around the world (Sachs et al., 2021).

Digital change has changed the way people buy and sell artwork. Now, people can easily buy and sell artwork through online platforms, without having to come to a physical gallery. This has changed the business pattern of painting galleries that previously relied solely on sales in physical galleries. Painting galleries must be able to adapt to these changes and utilize technology to improve business efficiency and effectiveness. The transformation of the painting gallery business strategy can be done by utilizing digital technology to expand the market reach. With an online platform, painting galleries can reach a wider market, even abroad. In addition, painting galleries can also utilize augmented reality (AR) technology to provide customers with a more interactive experience in viewing artworks. In addition to expanding market reach, painting galleries can also utilize technology to improve service quality. For example, by leveraging big data technology, painting galleries can collect data about customer preferences and use it to provide artwork that is more tailored to customer needs. Painting galleries can also take advantage of chatbot technology to provide faster and more efficient customer service. Finally, painting galleries can also speed up the transaction process by utilizing blockchain technology. With blockchain technology, transactions can be carried out securely and transparently, without the need to go through a third party. This can speed up the transaction process and reduce transaction costs.

Along with the development of technology and digitalization, changes have occurred in almost all aspects of life, including in the world of art and the creative industry. Painting galleries as a form of business in the art industry have also undergone changes in marketing and marketing artworks to consumers. In recent years, many new digital business concepts and platforms have sprung up in the art market that also offer new opportunities for galleries. Currently, consumers tend to rely more on the internet and technology to search for information, buy artworks and also want a new

feature such as Virtual Tour, Virtual Exhibition, Blockchain, so painting galleries must be able to adapt to these changes. In the era of industry 4.0, the transformation of the business strategy of the painting gallery is a must to be able to survive and develop in the midst of increasingly fierce competition. By utilizing digital technology, painting galleries can expand market reach, improve service quality, and speed up the transaction process, thereby improving business efficiency and effectiveness.

The research conducted aims to develop an information system that has the ability to market products widely, in addition, it also provides online sales and painting ordering transaction services. This system is able to manage and present data about paintings in the gallery with high speed and accuracy. In addition, this system also has the ability to present sales, orders, and purchase transaction data quickly and accurately, and makes it easier to create reports related to sales, orders, and purchases. This is so that the resulting report can be harmonized between the amount of money received and the existing documents. Based on the background description that has been presented, therefore the author raised this research with the title "Transformation of Painting Gallery Business Strategy in the Industrial Era 4.0: Welcoming the Trend of the Digital Era".

2. Theoretical Background

Technology Acceptance Model (TAM) : derived from the Psychological Theory of Reasoned Action. He is used to predict human behavior towards some new technology (Davis D, 2011). The Technology Acceptance Model (TAM) is currently one of the most widely used models to explain the willingness of tourists to accept and use technology in tourist destination countries (Obeidy et al., 2017). TAM is currently the most widely used model for measuring user acceptance of technology, and has been widely validated in various fields (Assaker, 2020).

Industrial Revolution 4.0 : refers to a concept rooted in a major change in the industrial sector that is the fourth wave of the industrial revolution. The term first appeared in Germany in 2011 in the context of the Hannover Fair (Carter, M., & Carter, 2020). Germany has a significant role in this initiative and has a strong goal to always be a leader in the manufacturing sector worldwide. This industrial revolution is an integral component of Germany's development strategy, known as the High-Tech Strategy 2020. Various countries also participate in realizing this concept, although they may use different terms or names, but the goal remains consistent, which is to improve the competitiveness of the industry in each country in the face of the ever-changing global market (Berliandaldo et al., 2021).

Digital transformation: Digital transformation is the process of changing the way tasks or work are handled by utilizing information technology to achieve a better level of efficiency and effectiveness. Some of the sectors that have undergone this transformation process include education through e-learning, business through e-business, banking through e-banking, government with e-government, and many more. Its main focus is to improve efficiency and effectiveness in its work and

supporting documents by utilizing databases. The effort aims to eliminate the use of paperless, where all transaction proofs that were previously in the form of documents have been replaced by storage in databases, providing a simpler, more flexible, and anytime-accessible approach (Harding et al., 2019).

Virtual Reality and Augmented Reality : VR technology has the unique ability to provide simulated perception of real situations (Diemer et al., 2020) and allow users to navigate through virtual environments. Various VR devices/programs have been developed, such as head-mounted wearable VR screens (e.g. wearable cardboard VR viewers) and online three-dimensional (3D) virtual tours. The most comprehensive and widely adopted definition of AR comes from (Danado et al., 2020) which defines AR as a technology that allows the superimposition of synthetic images on top of real images, providing additional knowledge about the user's surrounding environment which makes tasks more enjoyable and effective for the user. Compared to fully immersive 3D experiences such as those provided by VR, AR technology emphasizes the ability to present virtual information superimposed on real-world views without sacrificing it (Han et al., 2013).

NFT: Combining and expanding the definition (Bal, M., & Ner, 2021) and (Regner et al., 2019) a non-fungible token (NFT) can be defined as a cryptographically unique, indivisible, non-fungible and verifiable token that represents a specific asset, whether digital, or physical, on the blockchain. Currently most NFTs are built on the Ethereum blockchain network (Regner et al., 2019) and are therefore Ethereum tokens; However, it should be noted that blockchain platforms are emerging. According to Ethereum founder Vitalik Buterin, his main motivation for developing Ethereum was to explore "the concept that blockchain can be used for more than just money" (Algorand, 2021).

Blockchain: Blockchain can be described as "a distributed, immutable ledger that is maintained and verified among a network of peers" (Bal, M., & Ner, 2021), or in simpler terms, the commonality of a database that is accessible to everyone and cannot be compromised by anyone. Although the influence and forerunner of blockchain technology can be traced back to the 1950s (Aste et al., 2017), the most famous blockchain "emerged from the development of Bitcoin" (Bal Ner, 2021), the popular cryptocurrency presented in the aforementioned paper by Nakamoto (Nakamoto, 2020).

Effectiveness: The word 'effective' comes from the English 'effective,' which refers to the achievement of success or successful execution well. In popular scientific dictionaries, effectiveness is defined as the level of precision of use, useful results, or contributions to achieving goals. Effectiveness is a key element in achieving goals or objectives that have been determined in various contexts such as organizations, activities, or programs. Something is considered effective when it succeeds in achieving a goal or goal that has been determined as planned (Adzim et al., 2023).

Efficiency: Efficiency is a word that indicates the success of a person or organization over the business carried out which is measured in terms of the amount of resources

used to achieve the results of the activities carried out (Regner et al., 2019). In other words, efficiency can be explained as a comparison between inputs and outputs within the framework of systems theory. Inputs that go through a certain process will produce outputs with certain sizes and criteria. For example, production efficiency in the context of Islamic banks can be seen from how efficient the costs incurred in the form of investment financing are, which is one of the banks' production mechanisms to achieve optimal investment returns (Favari, 2023).

Customer Behavior: Consumer behavior is the movement of consumers as they search, buy, use, value, and spend money on goods that can meet their needs (Viora, P., & Suyanto, 2020). There are two important elements of the meaning of consumer behavior: (1) the decision-making process, and (2) physical activity, all of which involve individuals in assessing, procuring, and using economic goods and services (Syam, 2020).

Customer Decision: The consumer decision-making process is an attempt to combine knowledge to evaluate several alternative behaviors, ultimately choosing one of them. The result of this incorporation of knowledge usually appears in the form of decisions or action choices. According to Philip Kotler, the consumer decision-making process can be divided into five stages, namely need recognition, information search, alternative evaluation, purchase decision-making, and post-purchase behavior (Wuryanta, 2019).

3. Methodology

This research uses a qualitative approach based on theory (Patton, 2015). This approach was chosen because it is able to explore the deep meaning of the human experience and understand social phenomena in their natural context. Qualitative research is exploratory-oriented, where data are collected in a naturalistic manner, without variable manipulation. This is in line with the view (Patton, 2015) that qualitative research is designed to produce a contextual, flexible, and adaptive understanding of field dynamics. This research was conducted with a focus on exploring the experiences and views of art gallery owners and customers regarding the application of digital technology in the art gallery business. With qualitative methods, this research not only aims to answer research questions, but also to explore new findings that can make theoretical and practical contributions. The following is the conceptual framework of this research:

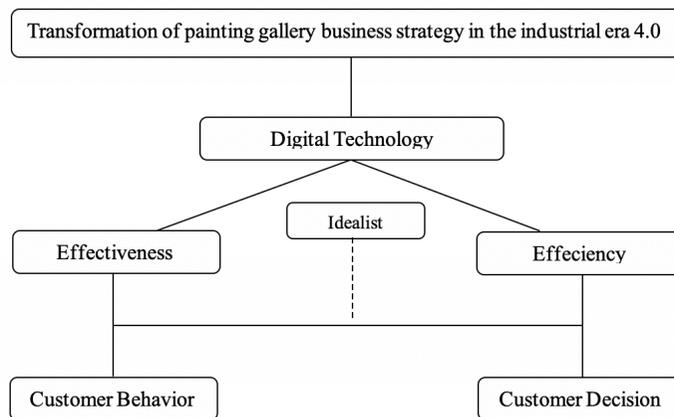


Figure 1. Conceptual framework

This research was carried out in a painting gallery in Bali. The data collection techniques used are in-depth interviews and field observations. The following are the informants of this research:

Table 1. Gallery Name and Owner or Manager or Staff

Gallery Name	Owner or Manager or Staff
Semar Kuning Community	Anak Agung Gede Agung
Djoko Sutrisno Fine Art	Djoko Sutrisno
Danaswari Painting	Bopong

Table 2. Names of Painting Gallery Visitors

Visitor Name	Profession
Yoga	Visual Communication Design
Gungun	Tattoo Artist
Rio	Digital and conventional art actors

The data analysis techniques in this study follow the approach described by (Patton, 2015), which emphasizes flexibility, openness to new findings, and the use of triangulation methods for data validation. The steps in data analysis are: open coding, data categorization, triangulation, descriptive narrative.

4. Empirical Findings/Result and Discussion

Application of Digital Technology

The application of digital technology in art galleries in Bali is carried out to face the challenges of the industrial era 4.0, where digitalization is important to increase competitiveness, enlarge the market, and increase work efficiency. Social media platforms such as Instagram, TikTok, and Facebook are the main means used by

galleries for promotion. However, the use of more advanced technologies such as Augmented Reality (AR), Virtual Reality (VR), and blockchain is still rare.

K1: Using social media as the main promotional tool. There has been no implementation of AR and VR due to resource limitations.

K2: Acknowledging that digital marketing is helpful but finding it difficult to understand new technologies such as NFTs and AI.

K3: Digital technology is considered important to compete in the global market, even though its implementation is still limited to social media.

The use of social platforms is now the most commonly used digital technology to promote galleries with the aim of showing artwork to local and international audiences, as well as increasing interaction between galleries and potential customers through features such as comments, direct messages, and promotional videos. Social platforms are becoming the most commonly used digital technology for gallery promotion. Relying solely on social platforms is not enough to provide immersive interactive experiences such as AR and VR. Therefore, social platforms only help create visibility for galleries, but their effectiveness is limited to visual marketing. Customers who want a more realistic and immersive experience need additional technologies such as AR and VR.

The Influence of Digitalization on Cultural Aspects

Digitalization in painting galleries has had a great influence on the preservation and change in Balinese traditional art culture. The study shows that the use of digital technology can have a positive impact on introducing Balinese traditional arts to the international market, but it also raises concerns about the preservation of local culture. In this section, we will explain the findings and analyses related to the impact of digitalization on cultural aspects.

One of the main advantages of digitization is its ability to expand access to traditional Balinese art. Digital technology allows art galleries to reach an international audience that was previously difficult to achieve. Social media plays an important role in promoting artwork to a wider audience, as revealed by several speakers in this study. The gallery owner notes that platforms like Instagram and TikTok help them capture the attention of a global audience at a relatively low cost. The technology also offers the opportunity to create a more interactive and engaging experience for customers. For example, AR can be used to provide cultural context to each artwork, such as telling the story behind the painting or explaining the Balinese symbolism in the work. In the context of globalization, digitization can be an important tool to ensure that Balinese traditional art remains relevant and known around the world.

Digitalization brings concern for the preservation of Balinese traditional art. This reflects the importance of a digitalization approach that supports, not replaces, cultural values. In addition, the gap between technology and culture is a big challenge. Not all artists or galleries understand digital technologies such as AR and VR, which require an investment of time and money for training. On the other hand, consumers who are not familiar with digital experiences also limit the effectiveness of this technology.

Therefore, education is crucial to improve the digital literacy skills of artists and customers, so that technology can be used to strengthen understanding and appreciation of Balinese traditional arts.

Effectiveness and Efficiency of Digital Technology

The application of digital technology in painting galleries has had a positive impact on operational effectiveness and efficiency, although there are still opportunities for further development. Social media, as the most frequently used form of digital technology, has become a major tool in expanding market reach at a relatively affordable cost. Platforms such as Instagram, TikTok, and Facebook allow galleries to showcase artwork to both local and international audiences. With compelling visual content and the right marketing strategy, social media helps galleries reach audiences that were previously difficult to reach through conventional promotional methods.

The effectiveness of digital technology is seen in its ability to speed up the marketing process while increasing interaction with customers. Gallery owners admit that social media makes it easy to communicate directly with potential buyers through features such as instant messaging and comments. Customers can also quickly access information related to artworks, including descriptions, prices, and the artist's background, without the need to visit the gallery in person. This not only saves time, but also reduces operational expenses such as the cost of printing catalogs or brochures.

In addition, digital technology has also improved operational efficiency. Digitizing inventory, for example, helps galleries record, manage, and track art collections more accurately, while reducing the risk of errors that are common in manual systems. Automation features in digital marketing, such as content scheduling and audience data analysis, also provide space for galleries to focus more on the creative aspects and business strategy development.

However, the application of more advanced technologies, such as augmented reality (AR) and virtual reality (VR), is still not widely adopted. This technology has great potential to provide a more interactive and immersive customer experience. AR, for example, can help customers visualize how a painting will look in their space, while VR allows customers to visit the gallery virtually without having to be physically present. This technology not only improves the customer experience, but also opens up opportunities to reach an international audience. Nonetheless, the adoption of this technology faces obstacles, such as the need for large investments in hardware, software, and staff training.

The effectiveness and efficiency of digital technology is also influenced by the level of technological literacy among customers. Not all customers are familiar with the use of digital technology, especially AR and VR. Therefore, galleries need to provide education to customers so that they can make the most of this technology. The education can be in the form of interactive demos, online tutorials, or workshops that allow customers to try first-hand the experience using digital technology.

Customer Behavior on Digital Technology

Digital technology brings a new, more interactive and personalized experience to art gallery consumers. As a major digital promotional tool, social media has transformed the way consumers find and explore artwork. Through platforms like Instagram and TikTok, consumers can access a wide range of art collections without being hindered by geographical restrictions. Photos and videos of artworks accompanied by short and informative descriptions make consumers more involved in the exploration process.

Augmented reality (AR) technology has also changed the way consumers interact with artwork. With AR, consumers can visualize how a painting would look if placed on the wall of their home. This technology creates a more personalized experience, allowing consumers to feel closer to the artwork before making a purchase decision. Consumers are no longer passive observers, but have the opportunity to interact directly with artwork in digital format. As an illustration, one of the informants (K4) mentioned that the AR feature is very helpful in understanding the scale and color of the artwork, so that it can ensure conformity with the planned space.

However, not all consumers are comfortable with digital experiences. Some customers, especially those who are used to conventional approaches, prefer direct interaction with the artwork physically. This condition shows that the application of digital technology requires an inclusive approach to meet the needs of consumers with diverse preferences.

Customer Advice on Digital Technology

Digital technology significantly influences the way consumers make purchasing decisions. Easy access to information through social media or gallery websites makes it easier for consumers to compare artworks efficiently. A complete description of the artist's dimensions, materials, techniques, and background is an important factor that supports consumers in the decision-making process. This clear and transparent information helps consumers feel more confident when buying art.

Technologies such as augmented reality (AR) and virtual reality (VR) make a major contribution in strengthening purchasing decisions. With AR, consumers can view artworks in the context of their own space, providing a real visualization of how the artwork will look. One of the informants (K5) revealed that visual simulation through AR really helps them feel more confident when choosing a certain painting, because they can see the match between the artwork and the home décor. This technology reduces the uncertainty that is often an obstacle in the buying process.

In addition, digital technology also increases convenience in transactions. Some galleries have adopted secure digital payment systems, thus speeding up and simplifying the purchasing process. This convenience encourages consumers to make a purchase immediately after finding a suitable artwork. However, while digital technology offers various advantages, some consumers face difficulties in using this feature. The lack of digital literacy or discomfort with new technologies makes some consumers hesitant to utilize AR or VR. Therefore, customer education is an important step so that digital technology can provide maximum benefits in supporting purchase decisions.

Overall, digital technology has revolutionized consumer behavior by creating a more personalized and interactive experience. On the other hand, the technology also strengthens purchasing decisions through clear information, supportive visualizations, and easier transaction processes. While challenges in digital literacy remain, an inclusive and educational approach can ensure digital technology has the maximum positive impact on consumer behavior and decisions.

5. Conclusions

The application of digital technology in painting galleries in Bali is still largely limited to the use of social media as a promotional tool. Advanced technologies such as Augmented Reality (AR), Virtual Reality (VR), and blockchain have not been widely adopted due to budget constraints, human resources, and technical understanding. However, this technology is considered to have great potential to improve customer experience and global competitiveness. Digitalization brings challenges in maintaining the value of Balinese traditional art and culture. Some informants expressed concern that the use of modern technology could reduce cultural elements in painting. However, technology is also seen as an opportunity to introduce traditional Balinese art to an international audience if applied strategically.

The use of digital technology, especially social media, has increased marketing effectiveness and operational efficiency. This technology allows galleries to reach a wider audience at a lower cost than traditional marketing methods. However, the application of more advanced technology is needed to optimize operational processes and accelerate business growth. Technologies such as AR and VR are influencing consumer behavior by providing a more personalized and interactive experience. Features such as artwork simulations in the customer room and digital descriptions of artwork help increase consumer comfort and confidence in making purchasing decisions.

The author's suggestion is that the painting gallery is expected to invest in training human resources to effectively adopt digital technology, develop collaborations with the government and technology partners to gain access to advanced infrastructure and software, and maintain a balance between the adoption of modern technology and the preservation of the value of Balinese traditional art.

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