


**INTELLIGENT MARKETING MANAGEMENT APPROACH IN THE INDUSTRIAL BUSINESS SECTORS**

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p><b>Received</b> 10 March 2023</p> <p><b>Accepted</b> 06 June 2023</p>	<p><b>Purpose:</b> In the midst of constantly evolving economic conditions, organisations in the industrial sector are facing intense competition. Therefore, it becomes imperative for these organisations to adopt effective marketing strategies in order to secure a competitive advantage. This research aims to study intelligent marketing management strategies in the industrial sector, and subsequently develop a structural equation model.</p>
<p><b>Keywords:</b></p> <p>Marketing Insights; Servitization; Alliance Centric; Marketing Transformation; Structural Equation Model.</p>	<p><b>Theoretical framework:</b> Based on the concepts and theories, the approaches for intelligent marketing management, in the industrial sector, are categorised into four components: marketing insights, alliance centric, servitization, and marketing transformation, as illustrated.</p> <p><b>Design/methodology/approach:</b> The mixed research methodology was employed by starting with qualitative research based on in-depth interviews with nine experts to create tools for quantitative research and conducting a group discussion with 11 experts to find a consensus on the model of this research.</p>
	<p><b>Findings:</b> The analysis conducted based on the structural equation model shows that the model meets the goodness of fit criteria with the empirical data, exhibiting a chi-square probability of 0.072, a relative chi-square (normed chi-square) value of 1.128, and a goodness of fit index of 0.954, along with a root mean square error of approximation of 0.016.</p> <p><b>Research, Practical &amp; Social implications:</b> Intelligent Marketing Management Approach in the Industrial Business Sectors for senior citizens are explored in this research. A quantitative study is performed through surveys, using questionnaires which target 500 marketing executives in the industrial sector. Data analysis is performed using descriptive, inferential, and multivariate statistical methods.</p> <p><b>Originality/value:</b> The research findings highlight the significance of intelligent marketing management strategies in the industrial sector to enhance marketing capabilities and improve overall efficiency. These approaches aim to identify the principles and factors that contribute to successful management practices, ultimately leading to the achievement of organisational goals. In today's highly competitive global economy, implementing intelligent marketing management approaches becomes crucial for businesses to ensure sustainability and secure a competitive advantage.</p> <p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i6.2496">https://doi.org/10.26668/businessreview/2023.v8i6.2496</a></p>

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## ABORDAGEM INTELIGENTE DE GERENCIAMENTO DE MARKETING NOS SETORES DE NEGÓCIOS INDUSTRIAIS

### RESUMO

**Objetivo:** Em meio a condições econômicas em constante evolução, as organizações do setor industrial enfrentam intensa concorrência. Portanto, torna-se imperativo que essas organizações adotem estratégias de marketing eficazes para garantir uma vantagem competitiva. Esta pesquisa tem como objetivo estudar estratégias inteligentes de gestão de marketing no setor industrial e, posteriormente, desenvolver um modelo de equação estrutural.

**Estrutura teórica:** Com base nos conceitos e nas teorias, as abordagens para a gestão inteligente de marketing no setor industrial são categorizadas em quatro componentes: insights de marketing, centrado em alianças, servitização e transformação de marketing, conforme ilustrado.

**Projeto/metodologia/abordagem:** A metodologia de pesquisa mista foi empregada, começando com a pesquisa qualitativa baseada em entrevistas aprofundadas com nove especialistas para criar ferramentas para a pesquisa quantitativa e conduzindo uma discussão em grupo com 11 especialistas para chegar a um consenso sobre o modelo desta pesquisa.

**Resultados:** A análise conduzida com base no modelo de equação estrutural mostra que o modelo atende aos critérios de adequação com os dados empíricos, exibindo uma probabilidade de qui-quadrado de 0,072, um valor de qui-quadrado relativo (qui-quadrado normalizado) de 1,128 e um índice de adequação de 0,954, juntamente com um erro quadrático médio de aproximação de 0,016.

**Implicações sociais, práticas e de pesquisa:** A abordagem de gestão inteligente de marketing nos setores de negócios industriais para idosos é explorada nesta pesquisa. Um estudo quantitativo é realizado por meio de pesquisas, usando questionários direcionados a 500 executivos de marketing do setor industrial. A análise dos dados é feita por meio de métodos estatísticos descritivos, inferenciais e multivariados.

**Originalidade/valor:** Os resultados da pesquisa destacam a importância de estratégias inteligentes de gestão de marketing no setor industrial para aprimorar os recursos de marketing e melhorar a eficiência geral. Essas abordagens visam identificar os princípios e fatores que contribuem para práticas de gestão bem-sucedidas, levando, em última análise, à realização das metas organizacionais. Na economia global altamente competitiva de hoje, a implementação de abordagens inteligentes de gestão de marketing torna-se crucial para que as empresas garantam a sustentabilidade e assegurem uma vantagem competitiva.

**Palavras-chave:** Insights de Marketing, Servitização, Centrado na Aliança, Transformação de Marketing, Modelo de Equação Estrutural.

## ENFOQUE INTELIGENTE DE LA GESTIÓN DE MARKETING EN SECTORES EMPRESARIALES INDUSTRIALES

### RESUMEN

**Objetivo:** En medio de unas condiciones económicas en constante evolución, las organizaciones del sector industrial se enfrentan a una intensa competencia. Por lo tanto, resulta imperativo que estas organizaciones adopten estrategias de marketing eficaces para asegurarse una ventaja competitiva. El objetivo de esta investigación es estudiar las estrategias inteligentes de gestión del marketing en el sector industrial y desarrollar posteriormente un modelo de ecuaciones estructurales.

**Marco teórico:** A partir de los conceptos y las teorías, los enfoques de la gestión inteligente del marketing en el sector industrial se clasifican en cuatro componentes: marketing insights, alliance-centric, servitization y marketing transformation, tal y como se ilustra.

**Diseño/metodología/enfoque:** Se empleó una metodología de investigación mixta, empezando por una investigación cualitativa basada en entrevistas en profundidad con nueve expertos para crear herramientas para la investigación cuantitativa y llevando a cabo un debate en grupo con 11 expertos para llegar a un consenso sobre el modelo de esta investigación.

**Resultados:** El análisis realizado a partir del modelo de ecuaciones estructurales muestra que el modelo cumple los criterios de ajuste con los datos empíricos, presentando una probabilidad chi-cuadrado de 0,072, un valor chi-cuadrado relativo (chi-cuadrado normalizado) de 1,128 y un índice de bondad de ajuste de 0,954, junto con un error cuadrático medio de aproximación de 0,016.

**Implicaciones sociales, prácticas y para la investigación:** En esta investigación se explora el enfoque de la gestión inteligente del marketing en sectores empresariales industriales para la tercera edad. Se realiza un estudio cuantitativo mediante encuestas con cuestionarios dirigidas a 500 ejecutivos de marketing del sector industrial. El análisis de los datos se realiza mediante métodos estadísticos descriptivos, inferenciales y multivariantes.

**Originalidad/valor:** Los resultados de la investigación ponen de relieve la importancia de las estrategias inteligentes de gestión del marketing en el sector industrial para potenciar los recursos de marketing y mejorar la

eficacia general. Estos enfoques pretenden identificar los principios y factores que contribuyen al éxito de las prácticas de gestión y que, en última instancia, conducen a la consecución de los objetivos de la organización. En la actual economía global altamente competitiva, la aplicación de enfoques inteligentes de gestión del marketing resulta crucial para que las empresas garanticen la sostenibilidad y se aseguren una ventaja competitiva.

**Palabras clave:** Marketing Insights, Servitización, Alliance-Centric, Transformación del Marketing, Modelo de Ecuaciones Estructurales.

## INTRODUCTION

The global importance of technology in the era of Industry 4.0, which connects automation systems within industrial organisations through digital technologies, enables all stakeholders to support collaborative work (Export-Import Bank of Thailand, 2019). The rapid growth in the use of digital technology tools and the advancement of internet network systems, that can globally interconnect communication networks, have created new channels for global trade and markets. Digital technology systems are intelligent networks that efficiently meet the needs of users. Managing organisations amidst the current wave of change has become increasingly complex and challenging, where various organisations are facing intensified competition in all dimensions. Therefore, utilising digital technologies to improve marketing capabilities becomes a vital approach for promoting, supporting, and creating opportunities to strengthen the competitive edge of businesses in the industrial sector. This serves as a driving force behind achieving marketing objectives, and aligns with the ongoing expansion trend within the industrial sector. Further, the emergence of a global community has resulted in a significant increase in purchasing power, consequently driving market growth. Furthermore, the expansion of the industrial sector, fuelled by foreign investments, has compelled business operators to adapt their marketing management approaches in order to enhance their competitiveness on a global scale (Federation of Thai Industries, 2019). Based on the data obtained from the Institute for Management Development (IMD) in Thailand, in 2022, it is observed that Thailand's overall business competitiveness ranks 33<sup>rd</sup> out of 63 global economies, which is a decrease of 5 rankings from the 28<sup>th</sup> position in 2021. When examining the underlying factors affecting Thailand's competitiveness from 2018 to 2022, it is evident that Thailand consistently ranked among the top 10 countries in terms of economic performance from 2018 and 2019. However, since 2020, there has been a persistent decline in rankings, with Thailand positioned at 34<sup>th</sup> in 2022. This decline is attributed to several factors, including the repercussions of the COVID-19 pandemic and the ongoing geopolitical tensions worldwide. These factors have resulted in a decline across various economic indicators, significantly

impacting Thailand's overall competitiveness. One specific area heavily affected by this decline is international trade, where Thailand's ranking dropped by 16 positions compared to 2021. The primary reason behind this decline in Thailand's international trade ranking is due to the lowered balance of payments indicators, which has worsened by 30 positions compared to the previous year. Further the growth rate of export value has decreased by 29 positions, and the growth rate of imports of goods and commercial services has plummeted by 27 positions in relation to 2021. With significant changes in the economic, social, and technological environment in the age of globalisation, the global economy is transitioning into a more interconnected system, where countries are becoming part of a single market rather than separate national markets (Kinicki and Williams, 2016). In the globalised world, countries and individuals are increasingly connected through information, lifestyle choices, labour markets, and business-related activities (Campling et al., 2018). As a result, industrial businesses need to adapt rapidly to the increasing pressures in the global business landscape to outperform their competitors. Effective and efficient management practices are crucial for industrial businesses to enhance their competitiveness globally. Therefore, intelligent marketing management strategies in the industrial sector play a vital role and directly influence the success or failure of industrial businesses in the face of global trade liberalisation, which has a significant impact on sustainable growth for all types of industrial businesses, in both the present and the future (Business Information Center, 2019). Recognising the importance of this matter, intelligent marketing management in the industrial sector can lead to significant leaps in growth, especially during times of crises caused by highly progressive competitor countries that could greatly affect business operations. Thus, the urgency of addressing this issue is crucial to facilitate development and ensure mutual benefits for all stakeholders involved, leading to the prosperity and sustainable growth of the nation.

## **RESEARCH OBJECTIVES**

1. To examine the components comprising intelligent marketing management strategies within the industrial sector.
2. To develop a structural equation model for intelligent marketing management strategies in the industrial sector.

## LITERATURE REVIEW

### Marketing Insights

Due to the rapidly evolving consumer demands, marketing professionals are required to gather information from various sources to plan marketing strategies that effectively reach consumers and surpass competitors (Ambler et al., 2002). One technique, employed by marketing professionals, is to utilise an in-depth data analysis of the market, which involves analysing data that directly responds to consumer behaviour, to enhance business performance. Organisations now have greater access to data than ever before and use deep data to improve overall digital marketing efforts. Customer insight refers to deep and genuine customer information that influences brand decision-making, brand-consumer relationships, and the improvement of brand experiences (Florin et al., 2007). To understand customers and seek new opportunities in marketing, businesses should possess customer insight. Gartner (2019) describes big data with three key characteristics (3Vs): volume (large-scale data), velocity (rapidly changing data such as social media data), and variety (data in various formats such as text and tables). Organisations leverage the benefits of big data to process and utilise a vast amount of available data, interpret its meaning, and make well-informed decisions. Data analytics is one discipline that employs big data to drive business operations, sales, marketing, and the economy. By analysing and processing data from various sources, organisations gain deep insights to facilitate decision-making and improve work processes, marketing strategies, and product design (Dubey et al., 2016). Big data analytics in world class sustainable manufacturing framework involves analysing the relevant components associated with large-scale data in eight groups: leadership, employee involvement, legal aspects, supplier relationships, customer relationships, integrated quality management, maintenance, and lean manufacturing. These aspects influence sustainable global manufacturing processes in three dimensions: environmental, social, and economic.

### Servitization

Due to the increasing market dispersion and customer demands, organisations are offering innovative service capabilities by designing new services or improving existing ones to deliver value to customers and gain a competitive advantage, leading to sustainable organisational performance (Salunke et al., 2019). Organisations are placing importance on continuous service offerings and service processes to thrive in a constantly changing market (Witell et al., 2016). Organisations that are open to generating or improving products, through

effective idea management and timely market introduction, with attributes including high quality, low cost, and within a suitable timeframe, can gain a competitive advantage and maintain consistent operational performance (Lamberth-Cocca and Meiren, 2017). Achieving this comprises six characteristics: 1) new services that have never existed before, 2) new product lines, 3) additional supplementary services, 4) improvement and modification of existing services, 5) positioning of new products, and 6) cost reduction (Jaw et al., 2010). Servitization is the provision of services to create customer value by extending services and augmenting products with services. The development of new services enhances the competitive potential of the service business. Services have three essential characteristics: 1) inseparability, 2) heterogeneity, and 3) perishability, which need to be developed or presented differently from competitors to overcome business challenges.

### **Alliance Centric**

Building business alliances involves the exchange and sharing of resources and capabilities between businesses to develop products or services together, resulting in increased competitiveness and potential. Businesses that achieve success and create value through collaboration with alliances experience enhanced competitiveness over their competitors (Anand and Khanna, 2000; Kale, Dyer, and Singh, 2002). Having experience in partnerships correlates with achieving success, through fulfilling partnership roles and the alliance learning process which involves clear knowledge definition, knowledge processing, knowledge sharing, and the exchange of learning. (Kale and Singh, 2007). These factors influence the level of success of business alliances. Further, the business alliance learning process also serves as a bridge between partnership roles and the success of business alliances. For a company to succeed as an alliance partner, in addition to the factors involved in building alliances, the organisation must have a robust alliance learning process to facilitate the exchange of knowledge and the application of knowledge, gained from alliance partners, to enhance operational efficiency. Strategic alliances are formal agreements for joint investment between organisations to pursue predetermined goals through the sharing of resources, including shared assets, intellectual property, human resources, capital, technology, capabilities, and other resources (Cummings and Worley, 2009).

## Marketing Transformation

Marketing transformation involves changing marketing processes, from model frameworks communication approaches, incorporating strategies, technology, and data analysis to enhance marketing efficiency and create new business opportunities for organisations. Marketing transformation can be divided into three main components: 1) to remodel, which involves adjusting marketing models and processes, 2) to restructure, which focuses on restructuring the organisational structure and allocating marketing resources, and 3) to re-engineer, which entails modifying marketing operations and tools, including the use of digital technologies, and transforming the capabilities of marketing professionals.

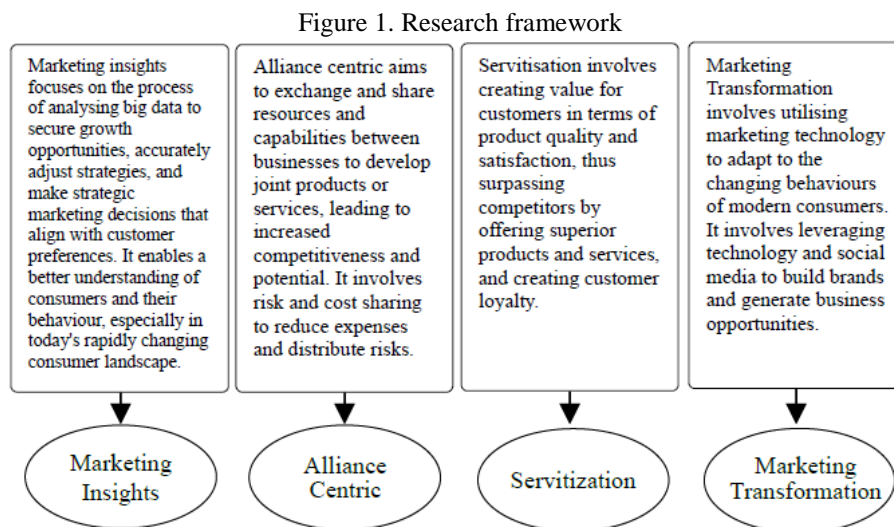
In the era of digital disruption, marketing professionals need to have a digital mindset and utilise technology and data to meet the evolving customer needs. Marketing 5.0, a fusion of Marketing 3.0 and Marketing 4.0, emphasises the use of advanced technologies to enhance human convenience. Currently, marketing development and marketing technology (MarTech) can effectively respond to the changing behaviours of modern consumers, as well as the rapidly evolving economic conditions and environment (Kotler et al., 2021). On the other hand, Marketing 4.0 originates from the changing consumer behaviour in the era of social media, driven by faster 5G internet connectivity (Kotler and Setiawan, 2017). Combined with the accessibility of sensor technology, or MarTech, technology plays a significant role in marketing processes. The key components of Marketing 4.0 include: 1) data analytics, which focuses on analysing consumer data, 2) prediction, which involves analysing and predicting risks to reduce errors, 3) creating enhanced customer experience, which entails improving customer experience in the offline world, 4) strengthening marketing and sales efficiency with MarTech, by utilising chatbots for basic enquiries and employing AI to manage questions, 5) agile marketing, or working swiftly without silos. The emergence of new technologies impacts global marketing strategies. Consumers have multiple channels to access brands and exchange information, news, and experiences. Moreover, when consumers demand clear information about products or services, this leads to the development of advanced data collection and in-depth analysis (big data) to help brands better meet consumer needs. Digital marketing involves marketing through digital media, using digital channels to communicate with consumers (Wertime and Fenwick, 2008). This establishes a two-way communication with customers, resulting in personalised interactions, where the data obtained from these interactions can benefit future customers. Additionally, incorporating customer feedback maximises consumer benefits. Therefore, using digital communication strategies to promote products through online social networks are crucial

factors in driving repeat purchases and sustaining continuous sales. This helps maintain existing customers and attract new ones, thereby increasing market share. The transformation in digital communication technology has created new communication channels, such as social networking websites, which enable interactive two-way communication (Chou et al., 2009; Selvalakshmi and et al., 2023). Digital communication strategies that promote product usage through online social networks contribute to word-of-mouth and viral marketing, thus effectively reaching target audiences and interested buyers, allowing them to produce or choose products and services independently and professionally, through the search for information via marketing communication means (Hollis, 2013).

## RESEARCH METHODOLOGY

### Synthesis of Components

Based on the concepts and theories, the approaches for intelligent marketing management, in the industrial sector, are categorised into four components: marketing insights, alliance centric, Servitization, and marketing transformation, as illustrated in Figure 1.



Source: Prepared by the authors (2023)

### Population and Sample Group

The population used in this study is determined from industrial business operators located within and outside the industrial estate area. The sample group is randomly selected to represent different regions in Thailand, whilst the total number of population groups is 73,232 (Department of Industrial Works, 2022). The sample group size is determined according to the criteria of research which involves component analyses, or structural equation modelling. The



sample size is set to 500, which is considered to be a highly adequate number according to a study conducted by Thanin Silpcharu (2020). A multi-stage sampling method, coupled with cluster sampling, is implemented by categorising industrial businesses into two types: small-to-medium sized businesses, and large-scale businesses (Thanin Silpcharu, 2020). Probability sampling technique is applied, using the lottery method, to gather data from the sample group.

### **Research Tools**

The research tool used in this study is a questionnaire in the form of a rating scale, which employs a 5-point Likert scale (Thanin Silpcharu, 2020). The researcher provided the draft questionnaire along with the assessment form to five experts who exhibit knowledge and experience in the field of study. The experts evaluated the questionnaire to assess its quality by examining the item-objective congruence (IOC) index, which measures the consistency between the questions and the research objectives. The IOC values range from 0.60 to 1.00, with a desirable value of 0.50 or higher. The study is then conducted as a trial (try-out) using the questionnaire with a sample group consisting of 30 individuals exhibiting similar characteristics to the target population of the study. The aim is to analyse the discriminatory power of the checklist-type questions and the rating scale questions using the standard deviation (S.D.) and correlation analysis, as well as to determine the reliability of the questionnaire. The discrimination values ranged from 0.49 to 1.35, and the overall reliability of the questionnaire is found to be 0.99, which is greater than 0.9, thus indicating a very high level of reliability. Subsequently, the research tool is used to collect data by requesting participants from the sample group to respond to the questionnaire.

### **Data Analysis**

The data analysis involved both descriptive and inferential statistics, using SPSS. On the other hand, multivariate statistical analysis and structural equation modelling are conducted using AMOS. The evaluation of data-model fit criteria is based on four values: 1) the probability value of the chi-square test, which should be greater than 0.05, 2) the normed chi-square, which should be less than 2.00, 3) the goodness of fit index, which should exceed 0.90, and 4) the root mean square error of approximation, which should be less than 0.08 (Thanin Silpcharu, 2020; Widiatmaka and et al.).

## RESULTS

The significance level of the components comprising intelligent marketing management approaches in the industrial sector revealed the following:

1. Analytical results obtained from the marketing insights component showed that, overall, the average value is high ( $\bar{X} = 4.33$ ). When considering individual sub-factors comprising the marketing insight component, it is observed that data reviewing and validation processes, conducted prior to data collection, exhibit a value of  $\bar{X} = 4.46$ .
2. Analysis of the alliance centric component revealed that, overall, indicate a high average value of  $\bar{X} = 4.40$ . When accounting for individual sub-factors, it is determined that creating common goals among business partners, associations, government agencies, and achieving mutual success, presents a value of  $\bar{X} = 4.52$ .
3. Based on the analytical results obtained from the Servitization component, the average value is determined to be the highest, at  $\bar{X} = 4.50$ . Accounting for the individual sub-factors, it is determined that, continuously cultivating a service-oriented culture among employees, to provide assistance to customers and create customer satisfaction, present a high score of  $\bar{X} = 4.63$ .
4. According to results obtained from the marketing transformation component, the overall average score is also the highest, at  $\bar{X} = 4.50$ . When accounting for individual sub-factors, it is observed that promoting organisational change, by implementing digital technology and creating more efficient and effective processes, resulted in a score of  $\bar{X} = 4.65$ .

The model is optimised using the modification indices obtained from pre-built software, along with theoretical foundations. Variables that are deemed inappropriate are sequentially removed, where the model is subsequently reanalysed. After these adjustments are made to the model, hence achieving statistical significance for all four criteria, it is determined that:

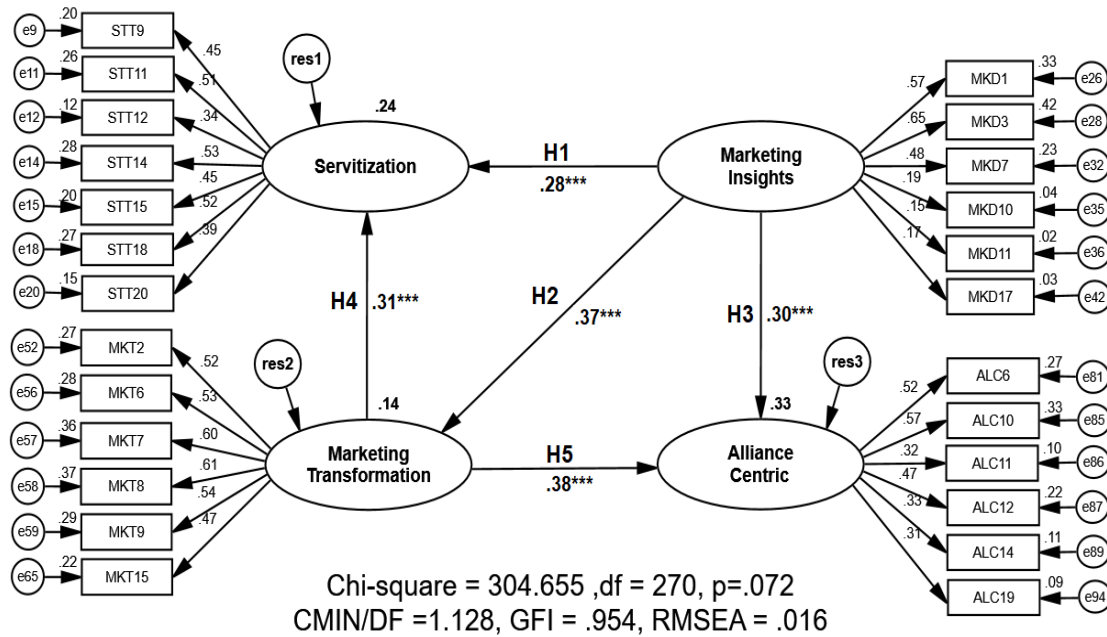
The analytical results are aligned with the objectives of the study, of intelligent marketing management approaches in the industrial sector, which consisted of four components: marketing insights, alliance centric, Servitization, and marketing transformation. These four components are derived from relevant literature reviews. The results indicate that the observed data are in agreement with the conceptual model, with the following statistical values:  $CMIN-\rho = 0.072$ ,  $CMIN/DF = 1.128$ ,  $GFI = 0.954$ , and  $RMSEA = 0.016$ , with a statistically significant p-value of 0.001. The findings are consistent with the literature and the observed data, meeting the predefined criteria, as shown in Table 1 and Figure 2.

Table 1. Observed variables for the components comprising intelligent marketing management approaches in the industrial sector.

Abbreviation	Description
<b>Marketing Insights</b>	
MKD1	Developing a database system for marketing analysis and planning opportunities
MKD3	Analysing strengths, weaknesses, opportunities, and threats to enhance marketing strategies
MKD7	Studying consumer lifestyle trends in the New Normal to guide new marketing strategies
MKD10	Creating marketing strategies suitable for the changing economic environment
MKD11	Researching and developing new products and services to meet customer demands
MKD17	Analysing product designs that better meet consumer needs and preferences
<b>Servilization</b>	
STT9	Focusing on innovation and developing new services
STT11	Developing service innovations to create new services and customer value
STT12	Establishing policies for collaborative service excellence and a service-oriented culture
STT14	Designing creative service delivery to create positive customer experiences for the organisation
STT15	Creating differentiated services to leave a memorable impression and encourage repeat purchases
STT18	Creating differentiated services to leave a memorable impression and encourage repeat purchases
STT20	Developing service personnel to achieve a shared understanding and the ability to provide consistent service
<b>Alliance Centric</b>	
ALC6	Exchanging and sharing resources and capabilities with business partners to strengthen competitiveness
ALC10	Collaboration between suppliers in assisting customers to create a positive brand image
ALC11	Promoting conferences and knowledge exchange with business partners to improve marketing practices
ALC12	Seeking cooperation from government agencies to expand markets internationally
ALC14	Promoting the development of products and services with consistent standards among business partners
ALC19	Collaborating with business partners to evaluate competitors, and study the strategies and technologies employed by competitors, to gain a competitive edge
<b>Marketing Transformation</b>	
MKT2	Automating marketing systems with modern applications
MKT6	Establishing a competitive advantage, enhancing responsiveness to consumers, and strengthening products through social network platforms
MKT7	Implementing a digital payment (E-payment) gateway to enhance convenience for customers
MKT8	Supporting up-to-date and sufficient digital equipment for the utilisation of information technology
MKT9	Enhancing efficiency in new products and services on digital technology platforms
MKT15	Developing technology for customer identity analysis (personalisation) and customer segmentation to ensure accurate and precise communication of products and services

Source: Prepared by the authors (2023)

Figure 2. Relationship pathways in the structural equation model



Source: Prepared by the authors (2023)

Figure 2 shows the overall influence analysis of latent variables in the structural equation model, of the intelligent marketing management approaches in the industrial sector, after model optimisation. The framework consists of 4 latent variables, categorised into 1 exogenous latent variable, which represents the in-depth marketing insights component, and 3 endogenous latent variables, which comprises the alliance centric component, servitization component, and marketing transformation component. Under the standardised estimate mode, after model optimisations, it is determined that the marketing insights component exhibits the most significant influence on the alliance centric component, overall, with a standardised regression weight of 0.44.

## DISCUSSION AND CONCLUSION

The research findings highlight the significance of intelligent marketing management strategies in the industrial sector to enhance marketing capabilities and improve overall efficiency. These approaches aim to identify the principles and factors that contribute to successful management practices, ultimately leading to the achievement of organisational goals. In today's highly competitive global economy, implementing intelligent marketing management approaches becomes crucial for businesses to ensure sustainability and secure a competitive advantage.

Based on the findings of this study, six points are discussed and concluded, with support or contradiction by relevant literature as follows:

1. According to the results, comparing the components comprising intelligent marketing management approaches in the industrial sector, specifically large-scale and small-to-medium sized enterprises, it is determined that there are statistically significant differences at a significance level of 0.05. This indicates that small-to-medium sized businesses focus on enhancing competitive advantages, improving responsiveness to consumers, and strengthening product competitiveness through social network platforms. These organisations employ digital technology systems to automate marketing operations using up-to-date applications. The products and services are presented through various social media channels, and modern marketing platforms are established to communicate with customers through smartphones and other communication devices. This is in line with the concept proposed by Bamey (1991), which states that the size of an organisation affects its ability to compete in a market characterised by rapid changes or technological advancements that differentiate it from competitors. This aligns with the idea presented by Meesri (2015), which states that small-to-medium sized enterprises (SMEs) are ready to drive the digital economy due to factors related to: 1) strategic leadership, 2) operational processes, 3) business models, 4) digital capabilities, and 5) government support policies; this presents a positive relationship with the readiness to adapt to digital transformation, more so than large-scale businesses. Given that innovation capability enables the potential for gaining a competitive advantage, SMEs have lower marketing capabilities, such as communication, product development, and online distribution channel management, relative to large-scale businesses. However, after implementing the internet into their organisations, SMEs have increased opportunities to communicate and establish relationships with customers. This enables SMEs with higher feasibility to search for new markets and enhance customer relationships. This aligns with the study conducted by Yunis, Tarhini and Kassir (2018), which determined that SMEs cannot improve their marketing efficiency unless they develop digital marketing capabilities to genuinely respond to customer needs (Chahal and Kaur, 2014; Prahalad and Ramaswamy, 2004). As observed by Eduardsen & Ivang (2016), it is worth noting that exhibiting high web capabilities alone is not sufficient for SMEs to enhance their marketing performance, as they also require digital marketing capabilities (Day, 1994; Yu et al., 2016). According

to Moon & Jain (2007), an organisation's digital marketing capability is a key success factor and acts as a linkage to enhance the web capabilities of SMEs, thereby improving their marketing efficiency (Jean & Kim, 2020).

2. According to the results obtained from the hypothesis testing, it is observed that the marketing transformation component present the highest direct influence on the alliance centric component of organisations, with a standardised regression weight of 0.38. This perceptual data demonstrates that digital technology transformation significantly affects marketing transformation. To gain a competitive advantage, it is crucial that businesses emphasise collaborations with alliances to exchange data and marketing technology that aligns with the changing environment. This is consistent with Simon Kemp (2020), as consumer behaviour in the digital era is influenced by information from various sources, including website reviews, comments on Facebook, and online data. This leads to quick and easy online transactions. Therefore, it is vital that organisations adapt to digital technology to coincide with ever-changing consumer behaviour, which leads to the significance of collaboration amongst various business networks for the exchange of data and marketing technology, as discussed by Kotler and Keller (2012). Digital marketing, in this study, refers to the use of technology in marketing activities to meet consumer needs and demands. Hence, organisations must adjust their strategies to align with the changing landscape (Lamberton and Stephen, 2016; Kietzmann et al., 2011). Internet technology has led to changes in the marketing landscape, particularly in the interaction between businesses and consumers, organisational changes, and new business opportunities for organisations of all sizes (Chaffey, 2010; Taiminen and Karjaluo, 2015). However, organisations cannot achieve their desired goals, such as increasing operational efficiency or effectively meeting consumer needs, without being up to date with digital technology. Key considerations for organisations include the nature of the business, competitive landscape, and organisational capabilities. Therefore, organisations need to be digitally prepared to adapt to changing trends, meet diverse consumer needs, and provide excellent consumer experiences. This requires increased business partnerships to rely on each other in various aspects, aligning with the study conducted by Humphrey & Ashford (2000). Given the rapid changes affecting various aspects of business operations, including technology, society, economy, and consumer behaviour, it is no longer feasible for businesses to solely manage these challenges. It requires capital, time, and effective management, which may hinder

competitiveness. Thus, collaborating with business partners is a viable solution for organisations. As stated by Robinson et al. (2016), strategic partnerships are the norm, as they provide a space for partners to collaborate and address their weaknesses when undergoing organisational changes, including changes in production, marketing, and technology. Cooperation allows partners to leverage their strengths to effectively enhance competitiveness in the market.

3. Based on the results of the hypothesis testing, it is observed that the marketing insights component exhibit the highest overall influence on the alliance centric component, with a standardised regression weight of 0.44. This indicates empirical evidence that developing a large-scale database system (big data), that can be accessed and connected to networks anytime and anywhere, is crucial for analysing marketing opportunities. Big data is derived from multiple data sources and business partner networks, to create precise marketing strategies and plans that meet consumer demands. It is consistent with Isaga's (2018) emphasis on the importance of intellectual capacity, in the industrial sector, to utilise and exchange a diverse range of accurate data to plan the production of innovative products and study the behaviour of new-age customers. This approach consists of the following characteristics: 1) courageous, which refers to the courage to think and act creatively in business, 2) good governed, which entails the use of transparent data and the ability to verify data, 3) technology driven, encompassing the use of up-to-date technology to search for big data and generate sustainable revenue, 4) initiative, which represents being a leader in embracing and utilising big data, and 5) enthusiastic, which denotes encouraging the continuous use of big data to seek new business ideas or customers; this contributes to the profitability of the organisation. In line with Buheji and Buheji (2020), the ability to develop big data contributes to becoming a leader in application development, particularly in cross-selling, which reduces costs and benefits the exchange of data between business partners (partnership), resulting in customers receiving price-related benefits in a collaborative network (collaboration). This is consistent with Kumaraswamy's (2018) study, indicating that utilising big data, to develop an ecosystem platform for communities, leads to marketing innovation and long-term sustainability for businesses. This requires international-level cooperation amongst business partners, as highlighted by Wheelen and Hunger (2010), Elmuti and Kathawala (2001), and Soares (2007), as being business partners enables organisations to acquire technologies to improve operations, share information and

expertise amongst one another, increase access to new markets, reduce costs, reduce financial risks, and enhance competitiveness. Furthermore, Yasuda (2005) emphasised the significance of being business partners, including 1) access to resources of business partners, 2) reduction in the time required for market entry, and 3) reduction in expenses. These factors depend on the efficiency of organisational operations. Consistent with the study performed by Kale and Singh (2007), learning from business partners, whether it is knowledge management or the exchange of learning, is a primary factor that influences the operational performance of organisations.

4. The results of the optimised structural equation model analysis reveal a significant correlation between two variables in intelligent marketing management approaches. Specifically, there is a strong correlation, at a value of 0.394, between having up-to-date and adequate digital equipment for utilising information technology, and the development of new products and services on digital technology platforms. This is consistent with findings from Nail and Ammar (2017) and Wishart (2018). Mobile devices, such as smartphones, tablets, and current computers, have gained immense popularity as information technology tools. The continuous development of mobile devices has provided enhanced capabilities to meet diverse operational and learning needs in business and education. With user-friendly technology and convenient access to information, mobile devices have empowered individuals to strengthen their knowledge and intelligence, leading to the creation of new innovations. This has a significant impact on enhancing the efficiency of product development and introducing new service models on digital technology platforms (Agarwal and Selen, 2013). The know-how and the application of creative ideas with various technologies, as well as modern marketing management approaches that emphasises connecting products to consumer needs through value creation methods (Chen et al., 2015), and the utilisation of up-to-date digital technologies (Li et al., 2010), are essential factors for the development of new products and services. Therefore, having up-to-date and adequate digital equipment, for the utilisation of information technology, is a crucial factor that contributes to the success and survival of businesses.

5. The marketing transformation component, which comprises intelligent marketing management approaches, exhibit an average value of 4.50 (S.D. = 0.252), which is the highest relative to other components. This reflects its importance in a rapidly changing business world that gives rise to disruption trends, requiring organisations to transform



themselves in all aspects to thrive in the changing competitive environment. Marketing is a critical area that demands adaptability due to its vulnerability to technological advancements, shifts in the business environment, and changes in consumer behaviour. Consequently, marketing professionals need to continuously adjust and enhance their skills to stay abreast of these rapid changes. As consumer behaviour continues to shift towards online platforms (Veleva and Tsvetanova, 2020), it is essential for organisations to undergo digital transformation in their marketing strategies. This transformation involves leveraging information technology and effective communication with consumers to meet their crucial needs and create customer satisfaction. Further, having efficient digital technology tools allows for continuous management of customer relationships through digital marketing, establishing interaction and responsiveness to user or consumer demands. This leads to the creation of value in terms of revenue and profit from sales, while also increasing customer satisfaction through the organisation's assistance and responsiveness to their needs (Alcácer & Cruz-Machado, 2019; Queiroz et al., 2020; Chen et al., 2018; Dedehayir et al., 2017). Digital transformation helps organisations to enhance efficiency and flexibility, enabling them to optimise work processes, adapt production methods, create value within innovation ecosystems, and promptly respond to market needs. Additionally, the shift from traditional marketing to digital platforms plays a pivotal role in boosting competitiveness and staying at the cutting edge of technological innovation (Bertello et al., 2021). Digital technology enables the transformation of organisational processes, practices, and strategies. Elevating technological capabilities, particularly in internet access, leads to the emergence of interconnectivity as a global value chain. Hence, organisations place high importance on and provide support for digital technology capabilities to enhance their ability to promptly meet consumer needs. This ultimately results in improved business competitiveness and sustainable operations within the dynamic business landscape. Such efforts reflect the preparedness and ongoing development of organisations, driven by data as data-driven entities capable of thriving in a globalised business environment.

6. Analyses, performed on the individual sub-factors comprising intelligent marketing management approaches, indicate that promoting changes in work processes through the implementation of digital technology fosters the creation of more efficient and effective processes within the organisation, exhibiting an average value of 4.65, indicating its highest significance. It is crucial for organisations to adapt their new

operational framework to coincide with emerging technologies to foster employee attitudes and adaptability towards advanced technologies. This involves cultivating a culture of learning and innovation, empowering employees to stay abreast of technological advancements. Additionally, it entails providing updated digital tools and robust technological infrastructure to facilitate information technology utilisation. Furthermore, aligning Key Performance Indicators (KPIs) with the utilisation of digital technologies within the organisation reinforces the integration of digital technologies into the organisational workflow. The continuous transformation of digital systems within the organisation brings about various impacts on employees at different levels. Thus, it is necessary for employees to receive continuous training and professional development that conforms to the organisation's strategies, to enable them to keep pace with digital technologies Gow and MacDonald (2006). The integration of network connections allows employees to perform tasks remotely, transcending the constraints of physical office spaces. However, the implementation of emerging digital technologies has significant implications for employees at lower hierarchical levels, as the advent of artificial intelligence (AI) technologies leads to workforce displacement and task automation. Whilst Schuchmann and Seufert (2015), Tamm (2015); Foerster-Metz and Golowko (2017) emphasise the impact of digital transformation on employees within the organisation, Bouee (2015), on the other hand, argues that employees should not be overlooked when organisations transition to digitalisation. Organisations must equip employees with digital knowledge and skills to enhance work performance. This clearly demonstrates that digital transformation affects employees within the organisation. Westerman (2011) further highlights the significance of cultivating an organisational culture that encourages risk-taking and establishes a foundation for digital innovation. Such a culture not only stimulates employees' creative thinking but also fosters their motivation to enhance the organisation's digital maturity. This leads to positive implications for the success of digital transformation processes. Moreover, the ideas presented by Berman and Marshall (2014), Schuchmann and Seufert (2015), and Morakanyane et al. (2017) further support the notion that digital transformation contributes to changes in organisational culture. To propel organisations towards their objectives, it is imperative to have proficient employees equipped with digital skills and establish processes for nurturing the capabilities of both current and incoming staff. This is crucial for enhancing employees' adaptability, to effectively leverage digital

technologies in their work. Encouraging and supporting employees to adopt a digital mindset, characterised by embracing and incorporating digitalisation in their work within evolving conditions, will foster the development of a digital organisation with a digital-centric culture.

In conclusion, intelligent marketing management strategies, including digital transformation, collaboration with alliances, utilization of big data, and promoting changes in work processes through digital technology, are crucial for enhancing marketing capabilities and achieving organizational goals in the industrial sector. Implementing these strategies helps organizations stay competitive, adapt to changing consumer behavior, and improve overall efficiency.

## **SUGGESTIONS**

1. The industrial business sector should prioritise investments in up-to-date and globally standardised technology, as well as adopt technologies that are aligned with their specific business operations, to enhance the capabilities of organisations in meeting customer needs. The rapid technological advancements have prompted executives in the industrial and service sectors to acknowledge the urgent significance of addressing potential business disruptions caused by technology. Digital technology has a profound influence on both customers and employees within organisations. Consequently, business leaders must embrace and leverage technology as a catalyst for organisational progress, while also ensuring the organisation's readiness to effectively navigate the changes it brings forth.
2. The industrial business sector should establish an Innovation Ecosystem that adapts to the unpredictable global economic conditions in the era of globalisation. This can be achieved by exploring potential opportunities from small-to-medium sized enterprises, which serve as valuable sources of novel ideas and significant innovations. Such collaboration aims to facilitate expansion, drive market growth, and enhance the innovation capabilities of the country.
3. The industrial business sector should accelerate towards an everything-as-a-service model, going beyond traditional product manufacturing and venturing into the realm of providing additional services. By adopting Servitization, businesses can overcome operational limitations and explore new opportunities. This approach enables businesses

to acquire knowledge, enhance their expertise, and develop unique assets that possess higher value than before, thus establishing a competitive edge over their rivals.

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