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Marketing Analytics Theoretical Development and Trends: The Journey of Defining Marketing Analytics

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Marketing Analytics is a novel area of marketing science that is becoming a new subject and area of expertise like other sub-branches of marketing, with the conceptual umbrella overlapping data science and the fruits of the fourth industrial revolution. The researchers crafted the linkage of Data Science, Data Analytics, Business Analytics and Marketing Analytics as an interdisciplinary phenomenon and subset of Business Analytics. A definition has been developed from academic development and trends. The area's importance in the academic world has also been detailed.

Introduction

Data analytics through Data Science

Data science involves the use of both art and science to the task of extracting useful information from massive amounts of data in order to facilitate the timely decision for sustainable competitive advantage. Data scientists, in contrast to mathematicians and data engineers, are not solely concerned with mathematical calculations or managing databases but focus on utilising data value reservoirs through in-depth knowledge of the subject at hand, supported by programming languages (R or Python), coding, data visualisation, and synthesis techniques (Pierson, 2015). Data Science is commonly known as the "practice of using analytical techniques and methodologies to derive and communicate valuable and actionable insights from raw data. Data science aims to optimise processes and support improved data-informed decision making, thereby generating an increase in value". Data science's ultimate goal is to boost productivity by enhancing data-informed decision-making and streamlining operational procedures (Pierson, 2015). Data science arose and introduced sets of data value uncapping approaches in response to the increasing rate at which data is being collected around the world as a result of an increase in systems of data gathering. The approaches' use spawned a new discipline known as data analytics (Grover & Kar, 2017).

Big data was made possible by the exponential growth in data collection points enabled by internet-connected gadgets. With the advent of big data and data science, numerous data analytical tools have emerged. These tools can be divided into descriptive, predictive, and perspective. Briefly, descriptive studies focus on elucidating and describing the issue at hand. The term 'predictive' implies that data mining is used to assist in making forecasts about the future. Finally, prescriptive describes the presentation of various remedies to the problem, along with supporting evidence for each (Ahmed, 2017).

The advent of big data has sparked a plethora of analytical methods. Some have even attempted to foretell the outcomes of likely future occurrences. Big data is defined as "data that is too big to fit on a single server, too unstructured to fit into a row-and-column database, or too continuously flowing to fit into a static data warehouse, while its size receives all the attention, the most difficult aspect of Big Data involves its lack of structure". What it means by 'structure' is information laid out in rows and columns (Excel style) for ease of use and analysis. The difficulty of working with unstructured information arises from the need to sort it into functional categories and format it so it can be presented to business analysts. Data scientists engage in this procedure, also known as 'filtering and repackaging (ibid., p.95-114).

Business Analytics through Data Analytics

The importance of business intelligence in this context cannot be overstated, as it provides the foundation upon which field observations and theoretical endeavours can be built (Wamba et al., 2017; Chen et al., 2012).

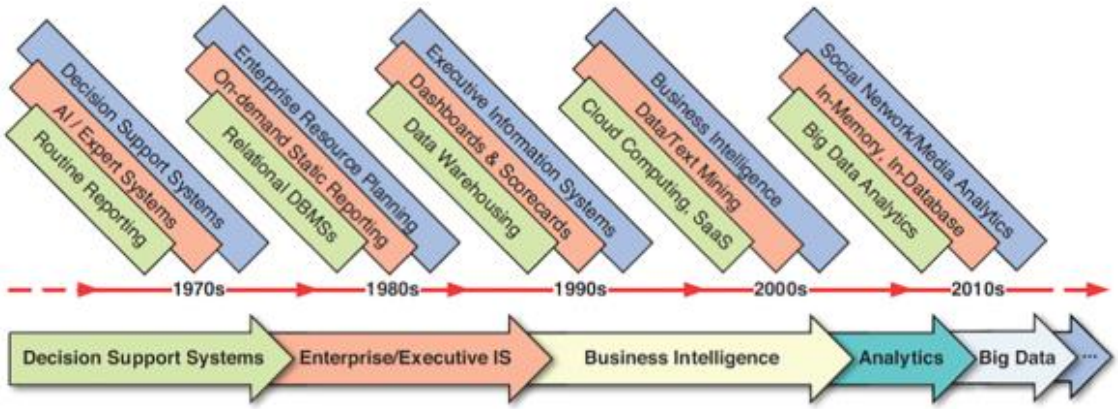
Business Intelligence (BI)

Although business analytics (BA) is the next logical step after the business intelligence (BI) stage, BI is still crucial because many companies that have used BI solutions have a high probability of effectively integrating BA into their operations. Since local players lack familiarity with these technologies, multinational companies have heavily used business intelligence (BI) and business analysis (BA) tools in developing countries. Research suggests that even small and medium-sized enterprises in emerging nations may utilise BI to create and track key performance indicators to improve their performance (Jameel et al., 2017).

According to a qualitative analysis of 15 separate scenarios involving B2B and B2C firms, the potential of internet-based online platforms is still under-appreciated, even though the number of internet users has been steadily growing since the medium's beginnings. Search engine optimisation strategies and a lively company web presence can serve as a data-backed marketing instrument (Ahmed et al., 2013).

Before delving into the theoretical intricacies of Business Analytics, it is helpful to trace the historical development that set the stage for the current line of reasoning. Delen and Zolbanin's (2018) work provides the following diagrams to highlight the distinction between BI and analytics, the various forms of analytics and the primary focus of each.

Figure No1: distinction between BI and analytics

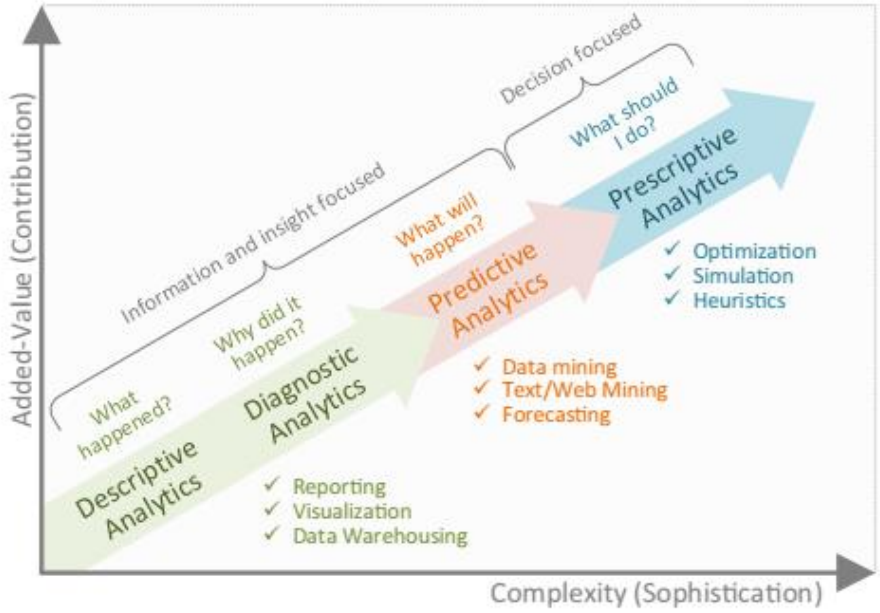


Source: Delen and Zolbanin (2018)

Elucidation

Following the chain of events, we have entered the 4.0 era, in which analytics serves as the fad du jour and the foundation for decision-making in many businesses worldwide. Beginning with decision support systems, the current phase addresses the application of analytics-based tools, methodologies, and concepts to a wide range of industries, including the study and practice of marketing analytics (ibid.).

Figure No2: Complexity



Elucidation

As seen in the preceding diagram, its complexity in analytics may be shown by its progression from descriptive to prescriptive analytics. The complexity level also necessitates the transformation of understanding into value along several dimensions of value addition. To put it briefly, the descriptive stage focuses on the past, the predictive stage looks ahead, and the prescriptive stage illustrates the optimum course of action going forward. In addition, there is a progression that businesses go through to improve their analytics-performance connection. The question "what happened?" marks the journey's beginning, with "what should I do?" as the destination.

Data Analysis in Business

Filtering and synthesising data from previously unimaginable sources in real-time is critical to modern businesses maintaining a competitive edge. Providing timely, relevant, high-quality information to aid decision-making is no longer just a marketing phrase or academic fad. Because it may make marketing efforts more efficient, business analytics acts as a wealth-conserving economic agent, allowing for the same output to be seen with less capital expenditure. The remaining funds after an investment are saved, allowing them to be used in other spheres of the economy (Rana, 2011; Udo, 2008). McKinsey & Company, one of the world's most prestigious management consultancies, has confirmed this (Brown et all., 2011). Business analytics shows how performance indicators may be integrated across departments from the factory floor to the C-suite. The logic of totality at the unit level can be described in

lay terms (IBM, 2012). In a broader context, there is compelling evidence that business analytics (BA) delivers skills that can reap untapped value, resulting in individual behaviour change and a shift in key performance indicators (Wheeler, 2002).

Several studies reflect this shift in a more comprehensive way to learn more about how to control and decrease the costs of various activities while elevating or maintaining customer retention and growth indicators (Davenport & Harris, 2007; Piccoli & Watson, 2008; Carte et al., 2008) that bring stability to businesses (Davenport & Harris, 2007). Aral and Weill (2007) released an expansion of the study begun by Davenport and Harris; they portrayed the adaptability of organisational activities to create, support, and encourage novelty in products and services given to customers. This results in a firm-level innovation-harnessing movement in line with BA-backed initiatives. Therefore, the worldwide community of business professionals' acceptance, application, and knowledge of data analytics have simplified the environment for business analytics through a combination of global perspective and local implementation.

Businesses in various sectors, from insurance to e-commerce to the media, have benefited from the widespread adoption of big data and analytics. Although there is a difference between the level of operational capability and the maturity of analytics aspects in the field and what has been documented in the form of available scholarly material in libraries, the existing literature has ritualistically explained it. Online shops in developing nations have been shown to profit from the BA analytics idea, and their interactive customer-marketer interaction is highly guarded (Chen et al., 2012; Wamba et al., 2017; Mahesar et al., 2017).

The realisation dawns that libraries everywhere are missing out on opportunities to foster two-way communication with their patrons. A great deal of intellectual property sits dormant on library shelves, or what the library should have, but is not being used to its full potential. It is also documented that the realisation of the gap, not the investment aspect, is the problem. A decade ago, analytics were pushed through with the help of combined big data, allowing publishers and e-book retailers to track the causes and effects of each book and academic article they sold (Siegel, 2013).

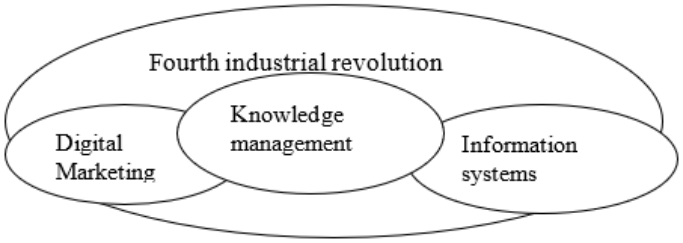
The release of "Big Data: The Next Frontier for Innovation, Competition, and Productivity" by the McKinsey Global Consultancy firm in 2011 cleared the way for the magnitude of impact and the extent of application across industries in the realm of data. This report highlights several factors that may alter our conception of data. This includes its role as a crucial component of production, the fact that the modern understanding of big data has enabled the development of entirely new business models for previously unimaginable products and services, the importance of linking different industries together, and the need to tap into previously unrealised growth and competition dimensions. It demonstrates that marketing analytics helps create cutting-edge goods and services. As a result, marketing analytics may be a viable area of focus for companies today.

Interdisciplinary Phenomenon: Marketing Analytics

It is evident from the below overlap of topics that the concept cannot be articulated without using literature from several disciplines.

Because marketing analytics lies at the intersection of data science and marketing, there are sure to be several seemingly identical study topics that are pretty distinct upon closer inspection from a theoretical and empirical vantage point.

Figure No3: Interdisciplinary Phenomenon: Marketing Analytics



(Source: Feshina et al., 2019; Holsapple et al., 2014)

Promotional Efforts in the Electronic Age

When applied to the cutting edge of digital marketing, the marketing performance measurement using an industrial scale metrics system produces previously unseen results. Preferences arising from the culture of the organisation as a whole, boardroom discussions, and sales team goals serve as barometers for the requirement for specific measurements and suitability. In addition, web analytics may serve as a valuable technique for increasing business opportunities, site visitors, and brand awareness online (Järvinen & Karjaluoto, 2015).

Since the beginning of the fourth industrial revolution, obsolete economic models from the preceding century have been revised. This economic shift ushered in the rise of data science and its widespread implementation. In addition, students undeniably need to develop a digital sensibility as part of their education in marketing courses. It has been found that many people agree that an audit of marketing curricula is necessary for light of the current economic climate (Wymbs, 2011).

By analysing sales and data from separate silos, marketers might get a feel for where things went wrong regarding ROI from advertising. Due to this, having access to complementary data wealth streams is not as valuable as it could be. The game's goal is to include customer feedback on customer behaviour in a way that is useful to the decision-makers and cannot be challenged by the upper management. The advertising duties and assigned measurable outcomes can be classified to achieve this goal, and analytics could be utilised to predict business situations. Finally, reallocation of underutilised resources in real-time to improve marketing operations. All this is done to get the marketing strategy, budget, and scale right (Nichols, 2013).

The academic community in South Asian nations has also caught wind of digital marketing's viability and practicality in business. As one pursues many of the newer growth

opportunities, it is essential to have a comprehensive set of applications, tools, and expertise in information sciences, business, and IT. Master's degree programs worldwide teach digital marketing with concentrations ranging from cyber to intelligence. To better accommodate the needs of industry and the labour market, universities in India have begun to standardise their curriculum offerings. To reap the benefits of combining information science with other desirable fields of study, it will be necessary to launch business analytics-focused degree and certificate programs in the future (Paul et al., 2018).

The intersection of Consumer Behaviour, Services Science, and Industry 4.0

Examining the service sector's tacit wealth (TW) from various angles, including societal, economic, technological, and systemic, is the focus of this field of study. In addition, efforts are made to show that the bottom line and other impacts of TW can be traced back to the use of TW. More so, STW is portrayed as a hard asset despite its origins in the intangible service sector. Similarly, Service-Dominant Logic is no longer a buzzword because it is the subject of serious academic study (Za et al., 2017; Behari et al., 2019; Feshina et al., 2019). Captivatingly, data science and business analytics intersect in their pursuit of tapping into service systems' latent innovation potential. Because of the emphasis on people in the Industry 4.0 paradigm could help us better understand customer behaviour patterns in terms of the value design propositions of services (Lusch & Vargo, 2014; Feshina et al., 2019; Peters et al., 2016). The overview of AI has been compared to a comparable situation in the published works (Kwong et al., 2016).

The Concept of Collaborative Consumption and the Sharing Economy (CC)

Companies that rely heavily on technology worldwide have been championing the idea of a sharing economy, which has become central to how they do business. Today, many internet-based firms run on the bottom-up principle, which involves allocating stock to each economic player in proportion to their contribution to value creation. As a result, the web has evolved into the IoT, or the internet of things, a network of interconnected devices used collaboratively to achieve maximum efficiency. Uber and similar services have changed the dynamics of the competition (Puschmann & Alt, 2016; Cannon & Summers, 2014). The sceptics have finally caught up with the reality of the sharing economy. Thanks to IT, we can transform our data assets into actionable business platforms and insights into new areas of potential. Data scientists and business mechanisms must pool their empirical scope. The novel business models also called for the decentralisation of data assets and the dematerialisation of organisational structures, both of which are enabled by blockchain technology (De Filippi, 2017).

An article titled "The sharing economy: Your company model's friend or foe?" provides an insightful critical analysis of the two primary concerns with the sharing economy. The first is whether the sharing economy can be implemented systematically or if it will only be successful in a few highly-technical fields. The second factor is the character of the shift needed in existing business models, particularly concerning the movement, availability, and documentation of valuables. These problems necessitate more investigation into this

multidisciplinary area, which requires expertise in service science, information science and model mapping for businesses (Kathan et al., 2016; Fournier et al., 2013). In order to better understand the sharing economy, researchers have developed the concept of "Collaborative Consumption" (CC), which occurs when two or more people exchange valuable data assets through a community-e-platform in exchange for monetary gain. This can include anything from the exchange of goods and services to the provision of resources for businesses.

According to Cheng (2016) 's analysis of the literature on the sharing economy, studying the phenomenon requires knowledge of multiple disciplines, including those dealing with tourism and hospitality, information systems, socioeconomic issues, and business management.

They were an online marketplace where unused assets could be rented out to stimulate economic growth. All sorts of things, from physical objects to immaterial concepts, are included here. Public-private partnerships and relaxed regulatory constraints can facilitate an official nod from the government. Scholars in the field of electronic government must investigate issues of potential inequality, platform authenticity, data sharing economy, and similar difficulties (Ganapati & Reddick, 2018). A similar perspective was presented at a research conference (Dillahunt et al., 2016), which focused on the differences between the east and west and between developing and developed economies.

Supported by blockchain and IoT, the smart city concept relies on several factors, including the sharing economy. A well-thought-out implementation framework is a promising step in this direction (Rahman et al., 2019). In other words, businesses have an immediate need for configurational conditioning (Cao et al., 2021) in order to align activities (Liang et al., 2022) that could enhance the systems (Osaysa, 2022). Marketing analytics is expected to be a game-changer, and a deliberate focus on avoiding "marketing analytics myopia" is necessary. (Vollrath & Villegas, 2021).

Research Methodology and Gap Reasoning

This study has adapted a qualitative inquiry by systematically observing the theoretical development and research trends along with amalgamation of the mostly used definitions of marketing analytics (Edmondson & McManus, 2007; Snyder, 2019). The researchers gathered the most relevant and impactful studies from the available literature to do inductive reasoning for the marketing analytics concept and defining it (Snyder, 2019). Till date and to the best of knowledge of the researchers, there is a sheer dearth of holistic research exercise in terms of defining the marketing analytics concept that provides a new dimension in marketing science regarding the industry 4.0 (Harish, 2023; Leiria, Dematos & Rebelo, 2023; Mansurali & Jeyanthi, 2023; Pascucci et al., 2023; Petrescu & Krishen, 2023; Stanton & Stanton, 2023).

Discussion and Synthesis

Transformation through marketing analytics

Numerous researchers have studied the research studies on different dimensions of transformation through marketing analytics, and there is more than one decade of observable research reservoir for it. Starting from the broader perspective, it has been argued by Shanks, Bekmamedova and Willcocks (2012) that business analytics, along with the relevant and targeted/context-specific metrics, can enable the movement of organisational transformation. So, the transformation at organisational, obviously having a firm perspective, is not complete without the interconnectivity of business analytics and the right metrics. Both are critical factors for a successful recipe. This advocates the research work title crafted by the researcher, carrying the marketing analytics (a subset of business analytics) and metrics side by side.

Furthermore, it has again been projected by Shanks et al. (2013) that the usage of business analytics is imperative for organisational transformation. This reiteration of the concept with a step up in research understanding by the scholars depicts that business analytics (marketing analytics) is the flight point for the organisational transformation movement. So, readiness is not an option but a necessity for it. It has been recently argued by McEwan et al. (2021) that organisational transformation can be a possibility through the firm capabilities, which are powered by business analytics. So, scholars recognise the need for recognition and planning for capabilities that could lead to the implementation. Currently et al. (2022) depicted a gap in studying the mapping of business analytics in business model transformations. They provided their input that could be of value in terms of research guide and inspiration as well as a compass for future research directions.

Interestingly, stepping backwards, even the researchers who have studied business intelligence are of the view that organisational transformation can be executed through business intelligence and by leveraging the range of opportunities as well as cultivation of data-driven culture for focusing on the data-actionable-sights capabilities (Meredith et al., 2012; Ye & Morro, 2018). Talking about the readiness levels that coincide with the theoretical paradigm of Rouse (2005), human, process and technology readiness leads to organisational transformation for industries by enabling big data analytics (Wang & Wang, 2020). The extensive research of around 1000 digital transformations at the firm level, in terms of success and statistical failure reasoning, depicted that mastery of analytics is the missing piece of the puzzle (Bughin et al., 2019). This again re-affirms the pivotal position of marketing analytics for organisational transformation. Lastly, the importance of having an ecosystem regarding the research problem concerned has been presented by De Bem Machado et al. (2022) while stating the disciplinary connections between industry 4.0 and digital transformation.

Marketing Analytics

It is concerning that there is no generally accepted definition of marketing analytics, as this lack of consensus illustrates the depth of the problem:

Table No1: Definitions of Marketing Analytics

Author(s)	Literary accumulation for defining Marketing Analytics

Hauser (2007)	Real-time monitoring from a wide range of data sources centred on the client, including but not limited to the application of hardware or software and knowledge of statistical modelling. Data-oriented-insights decision-making is the key to actionable intelligence. Marketing analytics can fill the missing dimension of research by bridging the gap between data mining, qualitative, and quantitative methods to form a research triangle with a bright future in the twenty-first century. In addition, proximity, timeliness, and precision are the backbone of marketing analytics.
Clevenger (2009)	The combination of mathematical modelling of commercial projections by marketing professionals and not the IT personnel and the database development based on clean data accompanied with themes linking to patterns and the nature of data sources.
Ozimek (2010)	Subjective considerations, theoretical application modelling, and forecasting by specialists are more important than sophisticated statistical modelling techniques coupled with specific data sets.
Furness (2011)	Modulation of the dynamics of consumer behaviour based on criterion-based descriptive and predictive analysis, with the aid of a select set of analytical software tools.
Lapointe (2012)	When making decisions based on insights, it is essential to consider the reliability, validity, and relevance of the metric used to assess the relative value proposition and messaging efficacy.
Germann et al. (2013)	Challenges in decision-making are guided by appropriate cultural foundations, skill sets, and recognition from upper management, and technological advancements, data analysis, and measurement modelling reinforce these.
Dasan (2013)	Microeconomic and macroeconomic data are coupled with theoretical and empirical models to yield reasoning insight into business competitiveness' primary drivers and obstacles.
Vorvoreanu et al. (2013)	It is essential to keep tabs on client information in real time, analyse it, report on it, and update it with the appropriate metrics to present the best possible solution using the most relevant resources.
Miles (2014)	Decisions concerning financial and non-financial measures for measuring marketer-relevant customer valuation are discussed, from the most tactical to the most strategic levels.
Berger (2016)	Accurately quantifying customer lifetime value and equity is not just the application of mathematical, statistical, marketing, or information systems skills, but all of these things are put together. There are measurable and reportable monetary aspects to data valuation as well.
Xu et al. (2016)	Knowledge fusion between conventional marketing analytics and big data analytics provides the foundation for insightful decision-making that propels the development of successful new products.
Wedel and Kannan (2016)	In the future, this field will grow academically and practically thanks to the rise of heterogeneous big-data-reservoirs (structured and unstructured) and analytical

	decisions, primarily in customer relationship management, personalisation, and the marketing mix, privacy and security at the firm level.
Nair et al. (2017)	Utilising the data to make decisions about target customers to maximise earnings and keep customers connected indefinitely while minimising the hazards associated with this level of interdependence.
Petrescu and Krishen (2017)	A hub for several data-driven applications that can help firms build real-time campaigns using the most up-to-date information.
Wilson et al. (2018)	The connection between measuring marketing's efficacy and assessing its long-term viability.
Liu and Burns (2018)	Data mining, search engine optimisation, social media analytics, big data analytics, and marketing metrics are just some tools in this toolbox.

Elucidation:

The above projection of the articles shows apparent variability in the definitions available for marketing analytics and metrics, especially concerning interpreting the phenomena. Due to the significant divergence in the interpretation of the study subject, it is necessary to investigate both theoretical and empirical patterns. In addition, there is a current requirement for in-depth research into the concept's nature of applicability to the chosen businesses.

Defining Marketing Analytics

The researchers' understanding of the definition in terms of the table above, the literary synthesis presented so far, and the extensive literary gap analysis is that:

Marketing analytics is the subset of business analytics, being a multidisciplinary and complex phenomenon that has overlapped with many areas under the umbrella of industry 4.0. It is a movement for data-driven decision-making and organisational culture through data-actionable insights that could be achieved through the alignment of need recognition, planning for implementation, strategies and corresponding initiatives, relevant and significant metrics, multi-layered issues, encounters and remedies. Finally, the interconnectivity of all these in terms of human, process, technology, culture, legality and ethical readiness to form an ecosystem.

Status of analytics in the academic world

Because of rising global rivalry and the increasing globalisation of businesses, several business schools and other departments in both the developing and developed world have begun offering programs at the bachelor's and master's degree levels in marketing analytics. With the help of professors and teachers from prestigious universities, the most prominent online platforms for skill development and certifications have launched Micro Master programs. Certified specialisations cover everything from marketing to consumer analytics (Terpstra, 1987). Market segmentation has been expanding rapidly due to the introduction and

interaction with foreign market sectors (Terpstra, 1987). In light of the changes brought about by marketing analytics techniques (Langan et al., 2019; Lim & Heinrichs, 2021; Louro et al., 2021; Kurtzke & Setkute, 2021), there is a pressing need to rethink marketing education in the classroom.

Theoretical Implications

The interdisciplinary sense of the marketing analytics concept demands that the researchers view it in terms of its interconnections and multi-layered links with data mining, bid data analytics, AI and movements of digital transformation, and the overall management excellence in the Industry 4.0 era where the marketing analytics is observable in terms of marketable actionable data-driven-insights based decision making.

Managerial Implications

The managers of the companies need to focus on the future designs of services and digital infrastructure of their businesses to reap the benefits from marketing analytics, as it is not a gamut of tools or the work of IT but a shift in thinking and managing industrial marketing from strategic to tactical level for informed future business decision making that could lead to sustainable competitive advantage, which is demanded by the shareholders and even stakeholders.

Academic Implications

Globally, there are many marketing analytics courses and even programmes that are being launched and run by universities at various regions of the world. So, there is a need to look at marketing analytics degree programmes as a cross-disciplinary in nature where faculty from data science, software engineering, project management and core business disciplines would be needed to dissect and stitch the links and concepts in order to provide an academic solution for marketing analytics. In this way, the marketing analytics programmes will be a solution for career hunt in the age of industry 4.0.

Limitations and Future Research

This research study is extracted from a PhD thesis of the first author, so there could be a possibility that any study could be missed out that has been published now. The literature has been confined to the theoretical development and marketing analytics trends and the struggle to define it. Furthermore, the area of concern is still a nascent problem, so profound research in terms of multiple systematic literature reviews regarding the diverse sub-dimensions of marketing science is the need of the current research trends.

Conclusion

Marketing Analytics is a nascent concept that overlaps with knowledge management and information systems. The literary streams of digital marketing, consumer behaviour, services science and 4.0, sharing economy & collaborative consumption (cc) and transformation through marketing analytics reflect loads of discussion points that demand

further research. Marketing Analytics thrives with the conceptual overlapping of data science, the marketing-oriented potential of the fourth industrial revolution, and the linkage of data analytics and business analytics. Being the subfield of business analytics, marketing analytics is becoming a separate sub-dimension that needs separate research studies and academic programs, other than conventional marketing, which the academic world, along with the researchers' communities and the practitioners, do recognise now.

References

Ahmed, E., Yaqoob, I., Hashem, I. A. T., Khan, I., Ahmed, A. I. A., Imran, M., & Vasilakos, A. V. (2017). The role of big data analytics in Internet of Things. *Computer Networks*, *129* (2), 459-471.

Ahmed, I., Shahzad, R. K., & Shabbir, J. (2013). Search Engine Optimisation: Evidence From Pakistan. *Asian Academy of Management Journal*, 18(2), 1-16.

Behari, S., Cater-Steel, A., & Soar, J. (2019). Data science and big data analytics in financial services: A case study. In *Web Services: Concepts, Methodologies, Tools, and Applications* (pp. 1301-1329). IGI Global.

Berger, P. D. (2016). One man's path to marketing analytics. *Journal of Marketing Analytics*, 4(1), 1-13.

Brown, B., Chui, M., & Manyika, J. (2011). Are you ready for the era of 'big data'. *McKinsey Quarterly*, 4(1), 24-35.

Bughin, J., O'Beirne, B., & Deakin, J. (2019). The anatomy of successful digital transformation: The role of analytics. *Applied Marketing Analytics*, 5(2), 121-128.

Cannon, S., & Summers, L. H. (2014). How Uber and the sharing economy can win over regulators. *Harvard business review*, 13(10), 24-28.

Cao, G., Duan, Y., & Tian, N. (2021). Identifying the configurational conditions for marketing analytics use in UK SMEs. Management Decision, 59(12), 2952-2969.

Carte, T. A., Schwarzkopf, A. B., Shaft, T. M., & Zmud, R. W. (2008). Advanced business intelligence at Cardinal Health. *MIS Quarterly Executive*, 4(4), 413-424.

Chen, D., Sain, S. L., & Guo, K. (2012). Data mining for the online retail industry: A case study of RFM model-based customer segmentation using data mining. *Journal of Database Marketing & Customer Strategy Management*, 19(3), 197-208.

Cheng, M. (2016). Sharing economy: A review and agenda for future research. *International Journal of Hospitality Management*, 57, 60-70.

Clevenger, T. (2009). Using marketing analytics to drive innovation–An interview with Trae Clevenger of Targetbase. *Journal of Digital Asset Management*, 5(4), 216-236.

Dasan, P. (2013). Small & medium enterprise assessment in Czech Republic & Russia using marketing analytics methodology. *Central European Business Review*, 2(4), 39-49.

Davenport, T. H., & Kim, J. (2013). *Keeping up with the quants: Your guide to understanding and using analytics*. Harvard Business Review Press.

Davenport, T.H. & Harris, J.G. (2007). *Competing on Analytics*. Harvard Business School Press.

De Bem Machado, A., Secinaro, S., Calandra, D., & Lanzalonga, F. (2022). Knowledge management and digital transformation for Industry 4.0: a structured literature review. *Knowledge Management Research & Practice*, 1-19.

De Filippi, P. (2017). What blockchain means for the sharing economy. *Harvard Business Review Digital Articles*, 2-5.

Delen, D., & Ram, S. (2018). Research challenges and opportunities in business analytics. *Journal of Business Analytics*, 1(1), 2-12.

Dillahunt, T., Lampinen, A., O'Neill, J., Terveen, L., & Kendrick, C. (2016, February). Does the sharing economy do any good?. In *Proceedings of the 19th ACM Conference on Computer Supported Cooperative Work and Social Computing Companion* (pp. 197-200). ACM.

Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of management review*, 32(4), 1246-1264

Feshina, S. S., Konovalova, O. V., & Sinyavsky, N. G. (2019). Industry 4.0—Transition to New Economic Reality. In *Industry 4.0: Industrial Revolution of the 21st Century* (pp. 111-120). Springer, Cham.

Fournier, S., Eckhardt, G., & Bardhi, F. (2013). Learning to play in the new 'share economy. *Harvard Business Review*, 91(7), 125-129.

Furness, P. (2011). Applications of Monte Carlo Simulation in marketing analytics. *Journal of Direct, Data and Digital Marketing Practice*, 13(2), 132-147.

Ganapati, S., & Reddick, C. G. (2018). Prospects and challenges of sharing economy for the public sector. *Government Information Quarterly*, 35(1), 77-87.

Germann, F., Lilien, G. L., & Rangaswamy, A. (2013). Performance implications of deploying marketing analytics. *International Journal of Research in Marketing*, 30(2), 114-128.

Grover, P., & Kar, A. K. (2017). Big data analytics: a review on theoretical contributions and tools used in literature. *Global Journal of Flexible Systems Management*, 18(3), 203-229.

Hamari, J., Sjöklint, M., & Ukkonen, A. (2016). The sharing economy: Why people participate in collaborative consumption. *Journal of the Association for Information Science and Technology*, 67(9), 2047-2059.

HARISH, V. (2023). Marketing Analytics and Its Applications. *Marketing Analytics: A Machine Learning Approach*, 323-340.

Hauser, W. J. (2007). Marketing analytics: the evolution of marketing research in the twenty-first century. *Direct marketing: an international journal*, 1(1), 38-54.

Holsapple, C., Lee-Post, A., & Pakath, R. (2014). A unified foundation for business analytics. *Decision Support Systems*, 64, 130-141.

IBM (2012). Mid-Market Cloud Computing and Business Analytics Survey: Adoption among content users of Inc. and The Build Network, prepared by Inc.

Jameel, F., Memon, F., Shaikh, P., & Memon, N. A. (2017). Implementing a business intelligence environment in local market of Pakistan. *Mehran University Research Journal Of Engineering & Technology*, 36(2), 333.

Järvinen, J., & Karjaluoto, H. (2015). The use of Web analytics for digital marketing performance measurement. *Industrial Marketing Management*, 50(7), 117-127.

Kathan, W., Matzler, K., & Veider, V. (2016). The sharing economy: Your business model's friend or foe?. *Business Horizons*, 59(6), 663-672.
Kurtzke, S., & Setkute, J. (2021). Analytics capability in marketing education: A practice-informed model. *Journal of Marketing Education*, 43(3), 298-316.
Kwong, C. K., Jiang, H., & Luo, X. G. (2016). AI-based methodology of integrating affective design, engineering, and marketing for defining design specifications of new products. *Engineering Applications of Artificial Intelligence*, 47, 49-60.

Langan, R., Cowley, S., & Nguyen, C. (2019). The state of digital marketing in academia: An examination of marketing curriculum's response to digital disruption. *Journal of Marketing Education*, 41(1), 32-46.
Lapointe, P. A. T. (2012). The dog ate my analysis: The hitchhiker's guide to marketing analytics. *Journal of Advertising Research*, 52(4), 395-396.
Leiria, M., Dematos, N., & Rebelo, E. (2023). Customer loyalty in the insurance industry: From traditional to analytical marketing—a bibliometric analysis. *Applied Marketing Analytics*, 8(4), 404-422.
Liang, X., Li, G., Zhang, H., Nolan, E., & Chen, F. (2022). Firm performance and marketing analytics in the Chinese context: A contingency model. *Journal of Business Research*, *141*, 589-599.
Lim, J. -., & Heinrichs, J. H. (2021). Developing context-relevant project experiences for marketing analytics students. *Decision Sciences Journal of Innovative Education*, 19(2), 150-156.
Liu, X., & Burns, A. C. (2018). Designing a marketing analytics course for the digital age. *Marketing Education Review*, 28(1), 28-40.
Louro, A. C., Brandão, M. M., & Sarcinelli, A. F. (2021). Foundations and trends in Analytics and Marketing relationship. *REMark*, 20(1), 1.
Lusch, R. F., & Vargo, S. L. (2014). *Service-dominant logic: Premises, perspectives, possibilities*. Cambridge University Press.
Mahesar, H. A., Chaudhry, N. I., & Tariq, U. (2017). Integrating customer relationship management with big data analytics in retail stores: a case of hyper-star and metro. *Journal of Business Strategies*, 11(2), 141-158.

Mansurali, A., & Jeyanthi, P. M. (2023). Introduction to Marketing Analytics. *Marketing Analytics: A Machine Learning Approach*, 1.
McEwan, M., Shi, Y., & Van Toorn, C. (2021). Business Analytics (BA)-powered transformation for environmental sustainability in organisations: A dynamic capabilities perspective. *ACIS 2021 Proceedings*. 88. Retrieved from https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1087&context=acis2021
Meredith, R., Remington, S., O'Donnell, P., & Sharma, N. (2012). Organisational transformation through business intelligence: Theory, the vendor perspective and a research agenda. *Journal of Decision Systems*, 21(3), 187-201.

Miles, D. A. (2014). Measuring customer behavior and profitability: Using marketing analytics to examine customer and marketing behavioral patterns in business ventures. *Academy of Marketing Studies Journal*, 18(1), 141-165.

Nair, H. S., Misra, S., Hornbuckle IV, W. J., Mishra, R., & Acharya, A. (2017). Big data and marketing analytics in gaming: Combining empirical models and field experimentation. *Marketing Science*, 36(5), 699-725.

Nichols, W. (2013). Advertising Analytics 2.0. *Harvard Business Review*, *91*(3), 60-68.

Osaysa, E. K. (2022). IMPROVING THE QUALITY OF MARKETING ANALYTICS SYSTEMS. *International Journal for Quality Research*, 16(1), 119.

Ozimek, J. F. (2010). Issues with statistical forecasting: The problems with climate science–And lessons to be drawn for marketing analytics. *Journal of Database Marketing & Customer Strategy Management*, 17(2), 138-150.

Pascucci, F., Savelli, E., & Gistri, G. (2023). How digital technologies reshape marketing: evidence from a qualitative investigation. *Italian Journal of Marketing*, 1-32.

Paul, P., Bhuimali, A., Aithal, P. S., & Bhowmick, S. (2018). Business Information Sciences emphasising Digital Marketing as an emerging field of Business & IT: A Study of Indian Private Universities. *IRA International Journal of Management & Social Sciences,(ISSN 2455-2267)*, 10(2), 63-73.

Peters, C., Maglio, P., Badinelli, R., Harmon, R. R., Maull, R., Spohrer, J. C., ... & Griffith, T. L. (2016). Emerging digital frontiers for service innovation. *Communications of the Association for Information Systems: CAIS*, *39*, online.

Petrescu, M., & Krishen, A. S. (2017). Marketing analytics: from practice to academia. *Journal of Marketing Analytics*, 5(2), 45-46.

Petrescu, M., & Krishen, A. S. (2023). Mapping 2022 in Journal of Marketing Analytics: what lies ahead?. *Journal of Marketing Analytics*, 1-4.

Piccoli, G., & Watson, R. T. (2008). Profit from Customer Data by Identifying Strategic Opportunities and Adopting the "Born Digital" Approach. *MIS Quarterly Executive*, 7(3), 113-122.

Pierson, L. (2015). *Data science for dummies*. John Wiley & Sons.

Puschmann, T., & Alt, R. (2016). Sharing economy. *Business & Information Systems Engineering*, 58(1), 93-99.

Rahman, M. A., Rashid, M. M., Hossain, M. S., Hassanain, E., Alhamid, M. F., & Guizani, M. (2019). Blockchain and IoT-based Cognitive Edge Framework for Sharing Economy Services in a Smart City. *IEEE Access*.

Rana, I. A., & Rehman, S. (2014). How Business Analytics Is Adding Value To Breakthroughs – A Pakistani Perspective. *International Journal of Economics, Commerce and Management*, 2(10), 1-21.

Rouse, W. B. (2005). A theory of enterprise transformation. *Systems Engineering*, 8(4), 279-295.

Shanks, G., Bekmamedova, N., & Willcocks, L. (2012). Business analytics: Enabling strategic alignment and organisational transformation. Retrieved from https://aisel.aisnet.org/ecis2012/18/

Shanks, G., Bekmamedova, N., & Willcocks, L. (2013). Using business analytics for strategic alignment and organisational transformation. *International Journal of Business Intelligence Research (IJBIR)*, 4(3), 1-15.

Siegel, E. (2013). *Predictive analytics: The power to predict who will click, buy, lie, or die*. John Wiley & Sons.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of business research*, 104, 333-339.

Stanton, A. D. A., & Stanton, W. W. (2023). A regional comparison of the skills sought by employers for entry-level marketing analytics professionals. *Applied Marketing Analytics*, 8(3), 283-301.

Terpstra, V. (1987). The evolution of international marketing. *International Marketing Review*, 4(2), 47-59

Udo, G., Bagchi, K. K., & Kirs, P. J. (2008). Diffusion of ICT in developing countries: a qualitative differential analysis of four nations. *Journal of Global Information Technology Management*, 11(1), 6-27.

Vollrath, M. D., & Villegas, S. G. (2021). Avoiding digital marketing analytics myopia: Revisiting the customer decision journey as a strategic marketing framework. *Journal of Marketing Analytics*.

Vorvoreanu, M., Boisvenue, G. A., Wojtalewicz, C. J., & Dietz, E. J. (2013). Social media marketing analytics: A case study of the public's perception of Indianapolis as Super Bowl XLVI host city. *Journal of Direct, Data and Digital Marketing Practice*, 14(4), 321-328.

Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356-365.

Wang, W. Y. C., & Wang, Y. (2020). Analytics in the era of big data: The digital transformations and value creation in industrial marketing. *Industrial Marketing Management*, 86, 12-15.

Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. *Journal of Marketing*, 80(6), 97-121.

Wilson, E. J., McCabe, C., & Smith, R. S. (2018). Curriculum Innovation for Marketing Analytics. *Marketing Education Review*, 28(1), 52-66.

Wymbs, C. (2011). Digital marketing: The time for a new "academic major" has arrived. *Journal of Marketing Education*, 33(1), 93-106.

Xu, Z., Frankwick, G. L., & Ramirez, E. (2016). Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective. *Journal of Business Research*, 69(5), 1562-1566.

Ye, Q., & Morro, R. O. (2018). From Reporting to Analytics: Leveraging Business Intelligence in enabling organisations' transformation towards becoming data-driven. Retrieved from

https://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=8958030&fileOId=8958033

Za, S., Drăgoicea, M., & Cavallari, M. (2017). *Exploring Services Science*. Springer International Publishing.

Zamani, E. D., Griva, A., & Conboy, K. (2022). Using Business Analytics for SME Business Model Transformation under Pandemic Time Pressure. *Information Systems Frontiers*, 1-22.