MaCuDE
Management Curriculum for the Digital Era

Marketing Task Force

Phase II Report of the MaCuDE project[1]

Skills Needed by MBA Graduates and Recommendations on How to Deliver Them

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Marketing Disciplinary Task Force
Phase II Report of the MaCuDE project: Industry perspectives on the new curriculum

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1) Executive Summary

The business practice of marketing is changing dramatically, transformed by new technologies that permit far greater personalization for individual customers than was feasible in the past, greater agility and efficiency in decision-making, and universality of data and analytics in marketing operations. Under the initiative of the Management Curriculum for the Digital Era (MaCuDE), the marketing task force consulted with industry leaders on questions pertaining to emerging needs for skills, roles, and university education (undergraduate and MBA). Based on industry input, key skills identified included a grasp of omnichannel distribution, analytics basics, ethics, and digital advertising fundamentals. Underlying these was the foundational skill centering on Artificial Intelligence (AI) and its transformative role in marketing. Key emerging marketing roles identified were that of a Digital Strategist, Generalist Translator, and Marketing Analyst. With the goal of building these skills, the task force identified a need for university course content centered on omnichannel, marketing analytics, ethics, and digital advertising basics.

2) Discipline Impacts due to Digital Technologies

AI and Hyperpersonalization: The marketing function is undergoing a period of enormous change. The advent of new technological solutions has utterly transformed the practice of marketing within many organizations. Competition is intensifying, with the winners being those companies that are best able to exploit the efficiencies and new modes of value creation afforded by new digital technologies. Although a list of such new technologies might include AI (e. g., machine learning), internet of things, robotics, blockchain, and drones (this is the list summarized in Kumar, 2021), it is AI that stands front and center in marketing. AI automates, accelerates, and vastly increases the precision of targeting, defined as the matching of a company's offerings to specific customer segments or profiles. Whereas prior eras saw targeting in terms of large groups of people (segments), the current era of hypertargeting involves what we might call hyperpersonalization, meaning that both the product itself, and the messaging that advertises that product, may be customized to address an individual's, rather than a group's, specific idiosyncratic preferences.

Precision, speed, and efficiency in marketing decision-making: The chief benefit of AI is in the realm of predictive analytics, which is to say, the ability to marshal vast quantities of data to extract statistical summaries of interactive relations among input factors (e.g., customer demographics, captured prior behaviors) that are effective at forecasting future demand. The result is that companies that deploy AI are able to meet that demand with greater speed and efficiency than was previously

possible. Precision is a key benefit of AI: "The automated decision-making of AI reduces manual guesswork from marketers who try to personalize a customer's experience. This presents various marketing opportunities in the areas of content strategy, campaign strategy, product delivery, sales strategy, sales intent, retargeting, and more." (Kumar, 2021, p. 37).

Algorithm-based ad buying: The speed of networked connectivity has changed the advertising market from one of slow purchases of blocks of media time to an automated auction-based marketplace in which advertisers buy digital ad placement by way of algorithms rather than human interaction. Speed is pivotal: "… Instead of meeting every morning to review the responses to your campaign and decide on how to revise and update your campaigns, with AI in place, the machine runs in the background and updates itself constantly, making continuous optimizations instead of episodic decisions" (Venkatesan & Lecinski, 2021, p. 185).

Universality of data and analytics in marketing operations: At the heart of marketing is the idea of a customer insight, defined as the company's recognition of a customer's unmet need that may be satisfied by the company's offerings. Translating customer feedback derived from social media at scale involves automated systems that extract customer sentiment, providing faster input into the ideation stage of new product development. Traditionally, many companies have been siloed, such that the marketing function only sparesly communicates directly with developers and/or product teams. More broadly, the term "digital marketing" may well be obsolete. We are at the threshold at which there is simply marketing with all key functions operationalized via digital tools and platforms. If not now, then soon, all marketing will depend on the wrangling of large data and the leveraging AI to personalize product development, messaging, and distribution. In short order, "digital" marketing will be as quaintly redundant as "color" television. Going forward, the assumption for business schools is that all marketing courses will be infused with a digital framework and a recognition of the value of data and analytics.

3) Changes in the Workplace

The changes taking place in the workplace for marketing are largely the same as for other units within businesses. As such, we will not elaborate on any detailed specification of work changes, and instead focus on the large scale changes, of which two are salient. First, digital management of individual work flow as well as team work flow has evolved with new technologies facilitating productivity. Second, the COVID pandemic has accelerated the practice of remote work, a trend that we expect to have lasting impacts on the marketing function.

Turning first to digital management, this was a topic touched upon by a smaller subset of the industry leaders who gave input to this report. Their emphasis was on how digital tools can enhance productivity of both the individual employee and also teams. At the same time, this technology was seen in terms of the lens of a trade-off, such that faster technology may improve productivity but it comes at the cost of the need for the individual constantly to manage oneself. The individual employee needs to learn to set limits, improve time management, and focus on discipline. In short, self-management plays a vital role. Although technology may facilitate self-management to a degree, there also needs to be introspection regarding how one manages time. In general, although technology facilitates daily tasks, it also creates a level of closeness between collaborators that can affect the boundaries between personal life and work. Accordingly, there is increasing recognition of the value of placing limits on the 24/7 mentality of constant connection to work, and to use technology in a more disciplined and regulated fashion to avoid the threat of invasion of personal space. One leader who

spoke to us commented on the example of emails and continuous reports from technological tools (Google Analytics, social bakers, Hubspot, CRM) that are "always on." In the end, technological tools may facilitate productivity but increase work stress.

Turning next to the COVID pandemic, much has been written about the stay-at-home experience during the pandemic of 2020-21, and it is clear that the lasting impact of the remote work experience has been an increase in the technical fluency with which many workers interact with Zoom and other video conferencing platforms. The ability to work productively from home, and indeed from nearly any geographical location far removed from the home office, is a new norm that is transforming many global economies. Given the increasing automation of marketing functions (especially advertising) via AI, the human oversight of marketing functions can be executed with a laptop from any location globally. The advent of work teams who are geographically dispersed yet always connected is the new norm. However, we point out again that this observation is hardly unique to marketing, but rather pervades the global information economy.

4) Emerging Business Skills

Emerging business skills may be taught at the undergraduate or MBA level, but we begin with the latter. We summarize below the input from business leaders on this key question of MBA instruction. Industry leaders gave informal input to this report in the form of interviews and focus groups. We invited them to rank order a set of digital skills presented using a Qualtrics online survey. A total of 125 industry leaders provided their response, and in Table 1 we present the summary of the top 10 ranked skills they rated centering on MBA education. (The full list of topics presented on Qualtrics is presented in Appendix A; the survey instrument appears in Appendix B).

Table 1
Ranking of digital technology skills for MBA graduates (values are mean rank).

Omnichannel platform (strategy, implementation)	3.2
Statistics basics (probability and regression)	3.4
Causal inference (role, design, and implementation of experiments)	4.2
Customer centricity analytics	4.5
Digital advertising basics (including digital segmentation and personalization)	4.7
Ethics (e.g., privacy, bias, legal and regulatory constraints)	4.8
Relevant KPI/ metrics and technical implementation of measurement in IT-systems	4.9
Software for marketing data analysis (e.g., R, Python)	5.5
Emerging technologies (e.g., augmented reality, virtual reality, voice)	5.5
AI / machine learning	5.8

From Table 1, we draw two key conclusions. First, omnichannel is an increasingly important skill, ranked number one by industry leaders. Omnichannel refers to a multiple product distribution approach to the sales function that is oriented toward optimizing customer lifetime value. In practical terms, omnichannel embraces some combination of five key go-to-market routes: 1) direct retail in stores, catalog and e-commerce, 2) wholesaler/distributor/reseller route (i.e., intermediaries or B2B, 3) direct-to-consumer (DTC) using e-commerce of branded showrooms, 4) Amazon / Alibaba platform along with their fulfillment options, and 5) other platforms, from QVC to eBay. Omnichannel reflects

the increasing appreciation for the role of platform or ecosystem approaches to business in which the marketing function is unified by a platform but nevertheless deployed in a number of ways (from advertising across different digital means of communication to distribution that embraces both retail and direct-to-consumer). Omnichannel is best executed with a single cloud-based platform that unifies data streams from customers and business collaborators, quantifies customer preference, and manages customer touchpoints in an integrated approach. As such, omnichannel centers on the total customer experience, and anticipates their flexible purchasing via multiple channels, including retail and branded direct-to-consumer web sites.

The skills necessary to manage selling in an omnichannel world include data expertise, and indeed embrace the next set of skills in the ranking in Table 1, bringing us to the second key conclusion. That is, the envelope of the skills ranked 2nd (statistics basics), 3rd (causal inference), and 4th (customer centricity analytics) constitutes a data analytics bucket that is central to new marketing roles that will derive from upgraded MBA training. It is instructive that although AI was ranked 10th in Table 1, the basic utility of AI infuses the top 5 skills, particularly omnichannel. For this reason, we take a closer look at AI in marketing.

AI is the pivot point of new technological challenges for marketing. We can view AI in terms of both predictive and causal analytics, which indicates the difference between correlation and causation. Predictive analytics involves extracting patterns involving large numbers of variables such that future market patterns, such as demand in specific marketplaces, may be forecasted and thus planned for. By contrast, causal analytics involves the use of experimentation to randomly assign marketing initiatives (advertising, promotion, app design, etc.) to different groups in order to test relative effectiveness in terms of sales or profitability.

As companies seek to leverage AI, they face a fundamental challenge to acquire deeper and richer data sets that capture variability in customer behavior. This challenge may be addressed by either internal means (developing in-house capabilities) or external means (outsourcing to partner data-management firms). This key decision dictates one type of skill profile, the Ph.D. data scientist, which may be seen as the foundation level of a pyramid of "new-technology skills." Accordingly, some companies (typically larger) will decide to develop internally their AI expertise and the attendant requirement of large data management, and thus will need to hire data scientists, who are typically PhDs with training in computer science and statistics. Such experts write code and understand the basic architecture of the data management system, oversee AI implementation, and develop custom statistical models to provide answers to both predictive and causal questions. Other companies (typically smaller, or newly moving into the AI space), will outsource (at least early on) data management and thus have no need for Ph.D. data scientists. In terms of changes anticipated in the near future, large companies with heavy operational challenges, such as Amazon, are increasingly hiring data scientists, but it is unlikely that this practice will become the norm among a majority of companies. Rather, in light of our discussions with industry leaders, we can summarize the vision for the near future in terms of three key roles that are present today, but expected to increase in value, prestige, and frequency in the work place in the next 10 years. These 3 roles are: 1) the Digital Strategist, 2) the Generalist Translator, and 3) The Marketing Analyst. We examine the first two in the context of MBA education, and the third one in a subsequent section centering on undergraduate education.

1) The Digital Strategist. Companies that work with AI benefit from a senior managerial (but not C-suite) position that we call the Digital Strategist. Returning to the metaphor of a pyramid of

"new-technology skills," the Digital Strategist understands the logic of marketing management but also recognizes the specific value conferred by AI and other technologies to provide enhanced personalization to customers (or more generally, better marketing outcomes in the digital era). The Digital Strategist does not have a Ph.D. but has taken MBA level courses and/or executive education courses in analytics and understands the opportunity as well as shortcomings with particular data sources vis-à-vis their power to shed light on specific business problems. The core concept of this role was profiled as a "AI champion" in a recent book:

> The AI Marketing Champion will oversee all of your AI and machine-learning marketing initiatives, and functions as a translator between marketing and data science. This "marketing technologist" will not just understand data and marketing and be excited to about possibilities that AI machine-learning can create; they'll also have some technology in their background, including some agile-based software project management experience. (Venkatesan & Lecinski, 2021, p. 129).

The Digital Strategist has a working knowledge of the economic approach to statistics, but also a working knowledge of how AI automates and accelerates the predictive and causal sides of the analytics equation. The Digital Strategist has learned from MBA and executive education courses what key questions to ask in order to ascertain the quality of data, and to how best to design internal business operational processes so as to collect the data that will shed the most light on current business challenges. The Digital Strategist works with the data scientist in a supervisory capacity. But the key defining feature, one that we heard repeatedly from industry leaders, is that the basic logic of marketing, which embraces the logic of the value exchange between company and customer, is not changing in any fundamental nature. The basic logic of marketing is not replaced by, but rather enhanced by, AI. Thus, training and expertise in the overall strategic envelope of marketing remains a key asset of any business leader. Training for marketing strategy is common at business schools today, but the next generation of marketing strategy courses will be infused with AI, not only as case examples but as part of the essential work flow that guides the strategic progression from specification of customer insight, value proposition, targeting, and tactical execution (including product design, pricing, distribution, communication, etc.). Individuals who have been incubated in the Digital Strategist role over the middle part of their careers may increasingly find their way to the C-suite over the next 20 years. To be sure, some companies currently have a Chief Digital Officer position, but in its current incarnation the position is more about digital evangelism than about operational control with a budget.

2) The Generalist Translator. The Generalist Translator is a mid-career role that is lower in the organizational structure than the Digital Strategist. The Generalist Translator is a person who understands marketing strategy but also understands AI and analytics, and has sufficient grasp of the key principles underlying them such that they can translate between personnel at the executive level versus at the data management level. More specifically, this person understands the mechanics of predictive analytics and can write code to extract insights from large data sets. This person also understands the overall marketing function in terms of the role of customer insight generation, new product development, pricing and distribution, and digital advertising. Of key importance, not only does this person understand the key terms and principles, but also has the generalist's savvy for understanding a wide range of challenges and finding data-driven solutions to those problems. A generalist knows a little bit about everything, and the basis for such knowledge may be an undergraduate degree that includes computer science, statistics, business, but also the humanities and

social sciences. Regarding the latter, a flashpoint for current marketers is the changing political and ideological polarization of societies around the world, which requires cultural sensitivity and knowledge of history. To quote one industry leader: “Marketing is becoming more quantitative but [the] best marketeers are still the ones understanding their customers and being able to express in few words, [underscoring the importance of] liberal arts and literature.” To summarize, the Generalist Translator puts a sophisticated lens of cultural knowledge in front of data-generatered insights.

To be sure, although we heard a repeated desire for some with cross-silo or cross-functional experience, not everyone favored a generalist, per se. One industry leader advocated for someone “in the middle” between a generalist and specialist. Specifically, she recommended that this role embrace not only “good enough” working knowledge of analytics and AI, but a deep understanding of the entire value chain that spans customer acquisition to retention, with the ability to cross-connect, creatively integrate, and “mash up” initiatives. In the end, she speaks of a need to see beyond silos, which brings us back to the key idea of a translator, someone who understands brand purpose, customer relationship management, and the data dashboard that provides real-time feedback on performance in market. A Generalist Translator is a person with “range,” advocated in a recent book of the same name: “As complexity increases – as technology spins the world into vaster webs of interconnected systems in which each individual only sees a small part – we also need more … people who start broad and embrace diverse experiences while they progress. People with range.” (Epstein, 2019, p. 14).

3) The Marketing Analyst. We use the term marketing analyst to identify a general, entry level position that embraces digitally-based marketing functions that may be carried out by an employee with an undergraduatre level education. Key insights are underlying this position are evident in Table 2, which ranks at number one in importance the content centering on digital advertising basics (including digital segmentation and personalization). The marketing analyst position is a “catch-all” designation that embraces an understanding of the digital marketing environment along with the basics of marketing strategy, but also a rudimentary knowledge of analytics (and perhaps coding) that permits direct interrogation of data output. Thus, we heard from our industry partners a desire for undergraduate education in marketing (and business more generally) and also in statistics and coding.

Table 2
Ranking of digital technology skills for undergraduate education (values are mean rank).

Digital advertising basics (including digital segmentation and personalization)	2.9
Omni-channel platform (strategy, implementation)	3.1
Ethics (e.g., privacy, bias, legal and regulatory constraints)	4.0
Statistics basics (probability and regression)	4.3
Social media analytics	4.5
Relevant KPI/ metrics and technical implementation of measurement in IT-systems	5.0
Customer centricity analytics	5.1
Search engine optimization	5.2
Emerging technologies (e.g., augmented reality, virtual reality, voice)	6.0
Attribution analytics (e.g., multi-touch attribution)	6.3

Table 2 gives the ranking of key skills situated at the undergraduate level. At number one is training in digital advertising basics, to which we will return in section 6. At number two is omnichannel, which echoes our earlier discussion of the importance of omnichannel training at the MBA level. At number three is ethics, to which we turn in section 5.

5) Ethics and Privacy Knowledge

Ethics education is a key need identified by many of the industry leaders with whom we spoke. We may specify ethics in terms of three levels, one being the privacy in light of the relentless collection of data about individual consumers, the second encompassing the inherent biases and consequent problems of marketplace discrimination, and the third is moral foundations more broadly conceived. To be sure, privacy and discrimination also embrace the moral level, but privacy was perhaps the more crucial concern for industry leaders. Ethics spanning all three levels is assuming greater importance among companies around the world. The unregulated growth of AI and surveillance capitalism continues to pose unexpected challenges. At its core, AI involves automated data-based decisions that lack any semblance of ethical compass, unless human designers explicitly design ethics into the algorithm. Accordingly, some governments are taking a closer look at the need to regulate AI deployment, as in the recent case of the European Union exploring benefits of regulating regulators are taking a closer look a stronger stance on ensuring non-discrimination, privacy and data protection, and the sustainable use of resources (https://digital-strategy.ec.europa.eu/en/policies/ai-people).

In terms of privacy, there is a recognition that access to customer data entails accesss sometimes to highly personal information (e.g., medical history), and that current practice involves rampant data collection with minimal consent and control by customers. Moreover, intercultural competence demands an understanding of privacy rights, laws, and traditions in different regions of the world (e.g., the EU fundamentally different from the U.S. in this regard). Indeed, some observers point to the rise of surveillance capitalism as the revolutionary practice of extracting without compensation innumerable details about individual customers' lives to be monetized via predictive analytics, creating "wealth by predicting, influencing, and controlling human behavior" (Zuboff, 2019, p. 190). The generation of enormous wealth by the top U.S. tech firms, especially Google, Facebook,

Amazon, Microsoft, and Apple, rests importantly on such acquisition of personal data. “Without any explicit debate, personalized, mobile, always-on, networked devices have allowed tech platforms to appropriate [customers’] personal information as something they can own” (Deibert, 2020, p. 79). The danger is that sheer invasiveness may create an atmosphere of fear and mistrust. On the other hand, an ethical approach that prioritizes the protection of personal data is a potential opportunity: “In today’s environment, data privacy is a strength in your marketing strategy, and thus needs to be addressed as such” (Venkatesan & Lecinski, 2021, p. 107).

Looking to Table 2, we see the remarkable result that education in ethics was ranked as number one for undergraduate training (compare to Table 1, in which ethics is ranked number six for MBA education). Business leaders are recognizing the market differentiating position of a strongly ethical basis of business, and we see this ranking result as a recognition that the next generation of business leaders will benefit from being steeped in ethics and morality as an early, not later, part of their university education.

6) Skills Needed for Early Career Graduates

In this section we focus further on skills needed at the undergraduate level. Earlier, we described the role Marketing Analyst, and here we explore in further detail the educational requirements of this role. In Table 2, we presented the mean ranking of skills from the input given by industry leaders. We have already discussed omnichannel (ranked number two) and ethics (ranked number three), and so here we focus on the number one ranked skill (digital advertising basics) and also the statistics-analytics skills that were ranked at number four.

First, a focus on teaching digital advertising basics reflect the recognition that much of the current advertising function now operates by way of digitally automated auctions. Advertising buying is conducted using a digital dashboard, with ever-evolving interfaces and capabilities. To operate an ad dashboard requires modest training and can be managed by new undergraduate hires. However, what is needed here is an understanding of how the advertising process fits within the overall marketing function (which rests on providing superior value to the target consumer). An undergraduate course that situates the advertising buying function within the larger context of marketing strategy was seen to be a useful curricular addition.

Second, statistics and analytics are seen to be as important at the undergraduate as MBA level, albeit at a correspondingly lower level of sophistication. Nevertheless, we saw a growing need for a new role that embraces undergraduate education in marketing (and business more generally) alongside the computing science skills that embody the logic of coding.

7) Curricular Impact of New Skill Requirements

We summarize the key take-aways from this report in terms of how the rise of new skill requirements translate into specific course offerings.

Omnichannel. A standalone course on omnichannel makes sense at both the undergrad and MBA level. In essence, this is a refurbished marketing channels course (i.e., means of distribution of goods and services) that is retooled for the modern digital environment. Below is an example of an MBA omnichannel course description (newly offered in 2021 at the Kellogg School of Management, Northwestern University):

> **Omnichannel Experience Strategy (MKTG-451-0).** In a world saturated with new commerce options, consumers and business buyers are radically changing their expectations and behaviors

> across the entire cycle of learning, shopping, buying, and using products and services. How does a modern business manage its brands across the vast array of new channel models, from brick and mortar showroom stores to e-commerce sites to experiential pop-ups and apps? In this course, students will learn how to structure and manage networks of partners into cohesive, brand-enhancing omnichannel ecosystems that reach end-customers any place and any time, whether through social commerce channels, mobile devices, in-person store environments, platform apps, or product story, photo and video sharing sites. Like the fast-evolving business models we will be studying, this class is both strategic and practical, and most of the situations we will analyze are from real-world developments and managerial problems. The course takes a senior leadership perspective, offering frameworks and analytical tools for effectively moving an organization outside the comfort zone of legacy beliefs and relationships, and into the new omnichannel world.

Marketing analytics. A marketing analytics course teaches the basic statistical techniques widely used by economists as applied to marketing problems, such as optimizing pricing and promotional activities so as to maximize customer lifetime value. Such courses are offered at many business schools today; in the near future, we see their contribution as a fundamental platform for training the roles of Digital Strategist (MBA) and Marketing Analyst (undergraduate).

Ethics. We see an increasing need for a standalone ethics course both the undergrad and MBA level. The coverage of the course would include privacy but also the foundations of moral psychology. A current concern is that ethics is often covered in conjunction with law content, yet the potential insights are rather different if the starting point is law versus philosophy versus moral psychology. Ideally, a standalone course would embrace all of these plus other perspectives, but framed by the fundamental context of surveillance capitalism and the accelerating acquisition by large companies of of personal data.

Digital advertising basics. Although training on current software platforms (dashboards) may be achieved easily by companies, the deeper opportunity at the undergraduate level aims to give an understanding of how the advertising process fits within the overall marketing function.

Generalists. We noted the rise of the role of Generalist Translator, and this role speaks to an increasing need for a broad knowledge base that spans the unique specialties of marketing and data science. By its very nature, a multiple course pathway would be needed, one that may go so far as to combine computer science and marketing as a double major at the undergraduate level. More generally, marketing education at the undergrad level continues to be well situated within the classic liberal arts tradition, meaning simultaneous exposure to a broad range of ideas from the humanities and social sciences. Great marketers are great observers of local culture.

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Appendix A
List of topics presented in Qualtrics survey (results in Tables 1 and 2).

A/B testing (e.g., user engagement, funnel conversions)
AI / machine learning
Attribution analytics (e.g., multi-touch attribution)
Causal inference (role, design, and implementation of experiments)
Coding
Customer centricity analytics
Data visualization software (e.g., Data Studio, Power Bi, Tableau)
Digital advertising basics (including digital segmentation and personalization)
Emerging technologies (e.g., augmented reality, virtual reality, voice)
Ethics (e.g., privacy, bias, legal and regulatory constraints)
Google marketing platform and data studio
Neural net / deep learning
Omni-channel platform (strategy, implementation)
Relevant KPI/ metrics and technical implementation of measurement in IT-systems
Search engine optimization
Sentiment tracking
Social media analytics
Software for marketing data analysis (e.g., R, Python)
Statistics basics (probability and regression)
Survey software (e.g., Question Pro, Qualtrics, Survey monkey)
Virtual assistants and chat bots

Appendix B
Survey instrument (Qualtrics)

Macude Phase 2

Start of Block: Default Question Block

Q1 This quick survey collects your opinions on emerging needs in digital education.

We will give you a list of topics that may possibly be taught in university courses. Taking the perspective of what you want to see in new hires at your firm, please rank these in order of importance.

You will see the same set of topics TWICE - the first ranking is for UNDERGRADUATE (4-year Bachelors) education, and the second is for MBA education.

Finally, there will be a text box in which you can add whatever further thoughts you have.

Page Break

Q5
A: UNDERGRADUATE EDUCATION1) Drag and drop the topics listed below to the right-hand box if you think they are important for marketing education; 2) Rank the ones you picked in order of decreasing importance by dragging each topic inside the right-hand box.

Topics of importance for UNDERGRADUATE education
_____ Digital advertising basics (including digital segmentation and personalization) (1)
_____ Social media analytics (2)
_____ Sentiment tracking (3)
_____ Search engine optimization (4)
_____ Virtual assistants and chat bots (5)
_____ Omni-channel platform (strategy, implementation) (6)
_____ Attribution analytics (e.g., multi-touch attribution) (7)
_____ Google marketing platform and data studio (8)
_____ Emerging technologies (e.g., augmented reality, virtual reality, voice) (9)

_____ Statistics basics (probability and regression) (10)

_____ Causal inference (role, design, and implementation of experiments) (11)

_____ AI / machine learning (12)

_____ Neural net / deep learning (13)

_____ Coding (14)

_____ Software for marketing data analysis (e.g., R, Python) (15)

_____ Customer centricity analytics (16)

_____ A/B testing (e.g., user engagement, funnel conversions) (17)

_____ Relevant KPI/ metrics and technical implementation of measurement in IT-systems (across platforms) (18)

_____ Data visualization software (e.g., Data Studio, Power Bi, Tableau) (19)

_____ Survey software (e.g., Question Pro, Qualtrics, Survey monkey) (20)

_____ Ethics (e.g., privacy, bias, legal and regulatory constraints) (21)

Page Break

Q3

A: MBA EDUCATION1) Drag and drop the topics listed below to the right-hand box if you think they are important for marketing education; 2) Rank the ones you picked in order of decreasing importance by dragging each topic inside the right-hand box.

Topics of importance for MBA education

_____ Digital advertising basics (including digital segmentation and personalization) (1)

_____ Social media analytics (2)

_____ Sentiment tracking (3)

_____ Search engine optimization (4)

_____ Virtual assistants and chat bots (5)

_____ Omni-channel platform (strategy, implementation) (6)

_____ Attribution analytics (e.g., multi-touch attribution) (7)

_____ Google marketing platform and data studio (8)

_____ Emerging technologies (e.g., augmented reality, virtual reality, voice) (9)

_____ Statistics basics (probability and regression) (10)

_____ Causal inference (role, design, and implementation of experiments) (11)

_____ AI / machine learning (12)

_____ Neural net / deep learning (13)

_____ Coding (14)

_____ Software for marketing data analysis (e.g., R, Python) (15)

_____ Customer centricity analytics (16)

_____ A/B testing (e.g., user engagement, funnel conversions) (17)

_____ Relevant KPI/ metrics and technical implementation of measurement in IT-systems (across platforms) (18)

_____ Data visualization software (e.g., Data Studio, Power Bi, Tableau) (19)

_____ Survey software (e.g., Question Pro, Qualtrics, Survey monkey) (20)

_____ Ethics (e.g., privacy, bias, legal and regulatory constraints) (21)

Page Break

Q4 Please share any further insights in the box below.

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_____

End of Block: Default Question Block