

*Digital immortality.  
The emerging business of AI-based posthumous consumer services*

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**Abstract**

Digital immortality (DI) is the possibility of preserving a person's personality in a digital format after death, made feasible by recent advances in artificial intelligence (AI). Companies that commercialize AI-based posthumous services are part of the so-called "digital afterlife industry," populated by enterprises that profit from managing and selling digital human remains. Researchers are increasingly interested in understanding how DI might be possible and how the emerging afterlife business will evolve. This understanding includes examining new technologies, philosophical questions, ethical and legal issues, economic implications, and how individuals and society will need to adapt. Accordingly, DI was analyzed from various disciplinary perspectives. However, despite the relevance of the topic at the company and consumer levels, there is a dearth of marketing research on this phenomenon. Therefore, an interdisciplinary literature review on DI was conducted with the aim of integrating and analyzing the findings from previous research from a marketing perspective. The preliminary results of the present review reveal multiple and interesting themes that are worth studying by marketing scholars in the future.

**Keywords:** Digital immortality; Posthumous consumer services; Artificial intelligence; Interdisciplinary literature review.

**1. Study background**

Artificial intelligence (AI) is influencing business activities and processes, profoundly altering how companies create, deliver, and capture value (Ancillai et al., 2023). The continuous "digital presence" of individuals generates an extraordinary amount of data that, if properly utilized, can be leveraged by companies to develop new products and services that meet the evolving needs of consumers. Thus, academics and professionals are interested in investigating AI's role in enabling the value extraction from digital data to develop new value offerings (Cooper, 2024). An emerging opportunity involves developing AI-based services that use the digital footprints left by a person throughout their lifetime to create a digital replica capable of interacting with those still living, the so-called "digital immortality" (DI) (Morse, 2024).

DI is the possibility of preserving a person's personality in a digital format after death (Steinhart, 2007). It is a form of symbolic immortality (Hurtado Hurtado, 2023)

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made possible by recent advances in AI. DI creation is enhanced by the growth of powerful machine-learning algorithms capable of mining large datasets and the increasing autonomy of computer systems (Savin-Baden & Burden, 2019). The digital footprints (emails, photos, videos, social media posts, logs of online purchasing behavior, etc.) left behind by the deceased are used by AI-based computer apps that, through interfaces, simulate the deceased's conversational style and speech patterns (Jiménez-Alonso & Brescó de Luna, 2023). Thus, different from Facebook memorialized profiles of defunct users, whose walls can only be actively engaged by their social network (living) friends—one-way immortality—, two-way DI enables reciprocal communication between the dead and the living thanks to an interactive chatbot that replicates the deceased person (Morse, 2024). Companies that commercialize AI-based posthumous services are part of the so-called “digital afterlife industry” (DAI) (Öhman & Floridi, 2017), populated by commercial enterprises that profit from gathering, managing, and selling digital human remains. Researchers are increasingly interested in understanding how DI might be possible and how the emerging afterlife business will evolve (e.g., Bassett, 2022; Hurtado Hurtado, 2024). This understanding includes examining new technologies, philosophical questions, ethical and legal issues, economic implications, and how individuals and society will need to adapt (Galvão et al., 2021). Accordingly, DI was analyzed from various disciplinary perspectives in the hard and soft sciences, such as engineering and computer science, philosophy, anthropology, social science, law, humanities, and so forth. Surprisingly, despite the relevance of the topic at the company and consumer levels, there is a dearth of marketing research on this phenomenon. Therefore, an interdisciplinary literature review (Aboelela et al., 2007) on DI was conducted with the aim of synthesizing and integrating the findings from previous research from a marketing perspective. The present study also aims to underpin and inform a future research agenda on digital immortality in the marketing field.

## **2. Methodology**

The interdisciplinary literature review was adopted as a research methodology (Menken & Kestra, 2016). The present interdisciplinary review aims to integrate and examine previous knowledge in a novel way—through the lens of marketing—and falls into the typology of interdisciplinary research characterized by the slightest degree of synthesis (Aboelela et al., 2007). A modified version of the research process proposed by Menken and Kestra (2016) was used for the review as follows:

- *Orientation.* An analysis was undertaken to identify the research topic and formulate the preliminary research question.
- *Preparation.* Instead of developing a theoretical framework to systematize the examined literature, the marketing perspective was chosen to examine and integrate previous research findings. The main research question and sub-questions were finalized accordingly. The researchers shared a review protocol, and the set of keywords for article extraction was agreed upon.
- *Data.* Data were collected and analyzed. Articles retrieval was achieved using Web of Science (WoS) and Scopus (Pranckutė, 2021). Boolean logic was used to

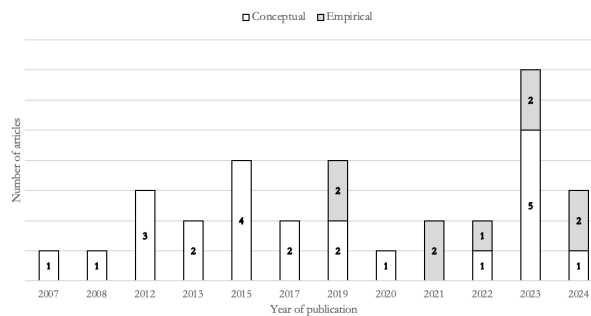
combine search terms and operators (Ensor, 1992). Title, abstract, and keywords were specified as search fields, and inclusion criteria limited the results to peer-reviewed scholarly articles, written in English. No subject area limit was set for soft sciences, whereas all hard sciences were excluded except for engineering and computer science. Finally, no timeframe restriction was set for the data extraction to include all work published before the present study (February 24, 2024). This search resulted in 635 articles (294 retrieved from WoS and 341 from Scopus). After screening, 30 articles were selected for analysis. Two additional papers were identified through snowball sampling and included in the review. Thus, in total, 32 articles were selected and archived for analysis. First, a quantitative analysis of the articles was achieved. Afterward, the articles were processed through descriptive coding, and then, through pattern coding, the main themes were identified and qualitatively analyzed.

- *Finalization.* The analysis results were interpreted, and conclusions were drawn and discussed.

### 3. Preliminary results

A quantitative analysis of the selected studies shows that the first scientific article on DI appeared in 2007 (Figure 1). From 2007 to 2018, publications have been scant, with one article published per year on average. More than half (19) of the articles have been issued from 2019 to the present, peaking in 2023 with seven publications, and three articles published in only the first two months of 2024.

Figure 1 – Number of articles per year and type



Despite the small numbers, the data reveal a growing interest in DI over the years, along with an increase in empirical investigations (9 out of 19 in 2019-24). The interdisciplinary nature of the theme of DI is witnessed by the variety of scientific domains covered by the journals where the analyzed articles were published. However, no article was published in journals covering marketing, innovation, strategy, international management, and so forth. This confirms a dearth of research on DI in management (articles classification is available upon request).

#### 4. Discussion and conclusion

The present paper provides the preliminary results of an interdisciplinary literature review on DI. While provisional, this study's outcomes reveal the complexity of the DI phenomenon and the multiple aspects that could be worth exploring from a marketing viewpoint and that are reported in Table 1.

*Table 1 – Themes and sub-themes: future research avenues*

Themes	Sub-themes
DI business structure	Industry value chain (digital data creation, gathering, storage, codification and management; app design, development, maintenance and management; posthumous digital service selling and delivery); competitive landscape of posthumous digital service providers (big techs, specialized startups, social networking platforms); collaboration networks between DI industry companies and adjacent industries actors (insurance companies, lawyers, cybersecurity experts, cloud service providers, hardware manufacturers); policymakers and lawmakers.
Marketing mix	Product features, technical, symbolic, and therapeutical functions; product differentiation; product range management (one-way and two-way communication DI); pricing strategies and models (subscription-based, freemium, installments, etc.). Service distribution, delivery, and promotion.
Technological innovation and management	Product improvement and development through AI advances affective computing (resemblance to the deceased, authenticity, empathy); new product development; technology advances (text-based chatbots, voice-based embodiments, holograms, immersive technology (AR, VR, Metaverse), humanized robots).
Consumers and target market segments	Consumer needs and motivations, psychological purchasing drivers (fear of death, nostalgia, will of continuing bonds with the dead, incapacity of managing loss); consumer socio-demographic and psychographic characteristics (age, nationality, culture, religion, attitudes, beliefs, values); barriers to adoption (uncanniness, technology acceptance, etc.); buyers and users' segments.
Legal issues	Lawless environment, inadequacy of current regulations to norm the DI business; (in)opportunity to apply existing legal frameworks (intellectual property law, privacy law, estate planning and succession law); data privacy and security, data ownership and control, informed consent, right to be forgotten, rights of the deceased's heirs.
Ethical issues	Potential misconducts of posthumous service providers, deceptive communication, deceased's data manipulation, exploitation of people's vulnerabilities, AI hallucinations, risks of data breaches and data corruption.
Cultural and societal change	Increasing ambiguity of ontological categories of life and death, changing meaning of death, dying and being dead, post-secularization, continuing vs. breaking bonds with the dead, management of loss and grieving process, mourning, etc.

First, the multiple actors that populate the DAI constitute a business ecosystem comprising a network of organizations—suppliers, distributors, digital platforms, customers, and government entities—that collaborate and partially compete in delivering posthumous consumer services. Exploring the characteristics of these actors and their relationships could help gain insights into the current structure of the DAI and its potential development. Furthermore, how individuals perceive and engage with posthumous digital services and the factors (social, cultural, religious, and so forth) that influence consumer buying decision-making could be valuably investigated to shed light on the market viability and scalability of DI. Accordingly, different consumer segments may be identified, suggesting customized targeting strategies for service

providers. Market analysis could be profitably combined with monitoring emerging technologies, trends, and their impact on the evolution of posthumous digital services, focusing on the development of advanced AI algorithms for personality replication and immersive experiences. Finally, the ethical implications of using AI technologies to create virtual reconstructions of deceased individuals are of paramount importance. Death involves grieving that makes people highly vulnerable in front of deceptive communication and misconduct on the part of companies that, after all, make profits on digital human remains. Specific attention should, therefore, be devoted to identifying measures for preventing business potential misbehaviors and guaranteeing consumer protection. The following steps of the present study consist of finalizing the qualitative analysis of previous knowledge on DI and underpin and inform a future research agenda on DI in the marketing field.

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