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Proceedings of Inaugural Designing Retail and Service Futures Colloquium

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Proceedings of the inaugural designing
retail & service futures colloquium

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Designing Retail
& Services
Futures

Reimagining
the future for retail
and
service design
theory and practices

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These proceedings were created by compiling the papers presented at the first colloquium of the **Special Interest Group (SIG) Designing Retail & Service Futures** from the Design Research Society (DRS). From the 22 papers submitted, 19 were accepted after a double blind peer review process. The 19 selected papers were asked to improve the paper based on the feedback they received from the reviewers before they were included in the proceedings.

The Designing Retail & Service Futures SIG was established in 2021 under the guidance of the Design Research Society. The SIG strives to gain a better understanding of the value of design in the commercial sector, including disciplines, such as interior design, architecture, retail and hospitality, branding, marketing, strategic design, design management and consumer psychology. Design and its value have been a subject of study for many years and from many different disciplinary perspectives (ranging from product design to marketing, business economics, service design, management, environmental psychology, (interior)architecture, etc.). However, these perspectives have been developed in a fragmented way with discrete research methods and results that present limitations to practically applying these findings holistically across the inter-related fields of design, retail, and services

Recent developments, that have been accelerated by the pandemic and the current economic crisis, show that in practice, services are becoming integral to retail and vice versa. The consumers' needs and the dedication of retailers to serve these needs have sparked new approaches that unite both service and retail design. Whether it be online or offline (or both), for a product or a service or an experience, or all together... It is only natural that the research community support the development of this field through furthering insights. This colloquium focuses on bringing together various disciplines to contribute their related knowledge and insights with the objective of calibrating terms and meanings that strive for consensus across disciplines related to retail and service design. This is to work towards knowledge and practice-based contributions that strive for a more holistic and encompassing retail and service design future.

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Designing Meaningful Retail Experiences by Adopting a Scenario-Driven Approach. The “Shaping Retail Innovation” Pilot Project.

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In a context of technological transformation impacting the production, distribution and consumption patterns, processes and dynamics of goods and services, the retail system is today strongly influenced by the overlapping of the traditional physical dimension and the new and ever-present digital layer and requires experimenting with new approaches to bring meaningful innovations into the system. Design, in particular, finds itself redefining its role in relation to the other competence domains operating in retail - among others management, marketing and IT - and having to experiment with new tools and approaches to bring meaningful innovation to the sector.

Within this framework the article presents the results of the pilot project “Shaping Retail Innovation” conducted within the FoReSeE – Forecasting Retail Service Experiences – basic research, discussing: (i) how applying Design-Orienting Scenarios could push meaningful retail solutions by envisioning how to embed advanced technology within the retail customer experience; (ii) how adopting a meta design approach could improve a multidisciplinary collaboration among design and IT promoting meaning-driven retail innovations with a long-term perspective.

Keywords: Design-driven Innovation, Retail Design, Meta Design, Design-Orienting Scenarios, Pilot Project

Introduction. The evolution of the contemporary retail environment.

The globalized economy reconfiguration (Ciravegna & Michailova, 2022), the consumption behaviors changes (Paltrinieri & Parmiggiani, 2017), the digital technology pervasiveness (AI, AR/VR/MX, Big Data, Digital Twins) (Alexander & Kent, 2021; Hoyer et al., 2020; Shankar et al., 2021), the new production system increasingly linked to new forms of diffuse and creative manufacturing and the demand for greater awareness and transparency (Lorek & Spangenberg, 2014) are at the basis of a new economic, social and cultural framework in which a changed attitude towards goods and their access can be observed.

Within this context, a radical transformation has characterised the retail sector over the last twenty years jointly mirroring the transformation that has taken place within the market competitiveness, the consumer horizon, and the technological readiness. In a highly interconnected system, the dematerialisation of goods and services (Semprini, 1996) impacted and drove the emergence of new distribution system’s formats and concepts thus pushing the transition from a product-centric model to a service-centric (Akaka et al., 2013, 2015; Merz et al., 2009) and experiential one (Pine & Gilmore, 1999). Retail, from being primarily focused on goods’ transactions, become capable of catalysing and promoting value co-creation within an interdependent system of service innovation, meaning generation and consumer centrality (Kustrak Korper et al., 2021). The servitisation process affecting the production and consumption system (Dinges et al., 2015) thus made the handling of different distribution’s channels and touchpoints more complex and extensive (Hickman et al., 2020; Piotrowicz & Cuthbertson, 2014).

Moreover, in recent years, the technological transformation has grown exponentially and quickly in prominence, becoming a driving force in the sector’s transformation dynamics, and promoting an increasing hybridisation and fusion of the physical and virtual dimensions of the retail experience. The “traditional” retail system evolved into an intertwined omnichannel system - with the multiplication of both physical and virtual channels and touch points - and ultimately into a more fluid and integrated “phygital” approach (Alexander & Kent, 2021; Silvestri, 2020). The current technological availability impacts all the management flows of goods, services, information, and experiences in the consumer sphere and systematically involves the entire back end (supplier management, fulfilment, CRM, etc.) and front-end (on-site and online customer experience, service assistance, etc.) process chain. Operations streamlining, seamless connection and compliance with customer expectations’ strategic goals drive the sector’s evolution paths, and technology is interpreted and exploited as a valuable and now essential enabler of such improvement measures in the retail system.

This approach aimed at the optimisation of specific and timely knots in the retail chain has widely led to the adoption of technology-push innovation rooted in a dynamic response to market needs: extensive technological shifts (IoT technologies, AR/VR, AI, Digital Twins, NFTs and blockchain among the most

impactful concerning the end-customer relationship) have introduced new and alternative solutions that, very often, “solve” and enhance exact features of the consumer experience (Deloitte Insights, 2019; Grewal et al., 2020), while rarely exploiting the possibility of introducing meaning-driven radical innovations within the retail system.

Exploring retail design processes and tools to nurture meaning-driven innovations.

Within this highly transformative context, the competence domains involved into the design of retail spaces, services and experiences are multiple and constantly redefined their roles, hierarchies, and intervention models. Retail design, marketing, management and, more recently, IT converge within a system that requires a shared and comprehensive language composed of a renewed vocabulary, grammar, and syntax. In particular, design is called upon to redefine its role, tools and approaches in response to the intervening changes in order to bring value to the system.

From a core interior design expertise – still relevant, design has embraced the major experiential paradigm shift and, secondly, the servitisation one by applying its peculiar approaches and tools to customer experience management. The Human-centred Design approach (Giacomin, 2014), which, starting from the observation of users’ needs, behaviours and habits proposes, in an iterative process, solutions capable of satisfying them, has proved to be effective and valuable at a time when widespread technological availability has demanded ever greater integration within the flows and dynamics of the distribution system. In the same way, however, the contemporary changing scenario is increasingly highlighting the limits of this approach, which certainly produces positive incremental innovation but risks losing track of both the long-term horizon (purely technological innovation is proving to be faster than systemic process innovation and with a high degree of obsolescence) and the necessary pursuit of innovations capable of encompassing and addressing the transformation dynamics of current economic and socio-cultural models. It is in this context that design today appears to be called upon to reflect on and redefine its own role precisely because of its peculiar ability to bring out and introduce meaning-driven innovations (Norman & Verganti, 2014) and to claim itself as a directing figure within an ecosystem of multilevel actors within which converge the different management, marketing, IT skills and expertise.

The basic research FoReSeE - Forecasting Retail Service Experience¹ - is being carried out in this context. The research aims to investigate the role of design as a knowledge integrator among different disciplinary domains and as a driver of retail innovation processes in a complete hybridized – physical plus digital – retail experience. In particular, the article presents the “Shaping Retail Innovation” pilot project developed in collaboration with Deutsche Telekom and its results. The pilot aimed at developing multiple design interpretations, expressed through concepts of “phygital” retail experiences, by adopting Design-Orienting Scenarios within a meta-design and multidisciplinary methodological framework. Relying on the systematisation, analysis and critical interpretation of the pilot project results, the article finally proposes to discuss how adopting a meta-design approach (Van Onck, 1964) can (i) positively nurture retail design practice and (ii) support innovation of meaning, triggered by the use of new technologies, to improve the customer experience and develop long-term perspectives.

The “Shaping Retail Innovation” pilot project: objectives and phases.

The “Shaping Retail Innovation” pilot project has the broader objective of modelling and testing a designed and future oriented operational approach capable of generating and positively nurturing innovative retail solutions in a properly phygital framework. From the design perspective, the phygital universe represents a significant and promising opportunity both to investigate and propose new design solutions capable of embedding technology within culturally relevant sense universes (Armstrong & Rutter, 2017; Iannilli & Spagnoli, 2021; Pangarkar et al., 2022) and to experiment and verify through which processes and tools design can add value within this specific setting. The pilot aims to reflect on the relationship between design-driven innovation and technology by developing highly phygital retail experience design proposals and adopting a Design-orienting scenario approach to retail concepts generation.

In particular, the pilot is aimed at: (i) reflecting on the relationship between design-driven innovation and technology considering it as an enabler of new socio-cultural and consumer dynamics and not purely as tool to respond to emerging needs; and (ii) assessing the effectiveness of a Design-Orienting Scenario approach both as a tool for promoting meaningful innovation and as a tool to improve dialogue and convergence between different disciplines (here in particular retail design and IT) to identify and agree on design trajectories to be followed.

The pilot project was carried out in cooperation with Deutsche Telekom, Customer Experience and Design area, and involved different actors: researchers from Politecnico di Milano, Design Department, fashion designers and professionals from Deutsche Telekom with a strong experience in Experience Design and Innovation. The project focused on the fashion field as it is a sector that is highly receptive to innovation and has extensively absorbed the technology’s potential to transform and improve its production and

distribution processes (Bertola & Teunissen, 2018). Deutsche Telekom, in this context, provided both technical expertise – by providing specialised knowledge on advanced technologies – and strategic expertise – by providing a medium- and long-term vision on the technological evolution and its possible impacts in the distribution area.

The pilot project resulted in 13 design proposals grouped into four design-led scenarios representing both a theoretical and applicative framework. The pilot was developed following three phases:

1) The first phase embraced and explored the changing contemporary dynamics in the social, technological, and symbolic spheres concerning mainly, but nonexclusively, the fashion product-system. The pilot's first step was functional in identifying emerging and consolidating trends, starting from the interpretation of the current transformation dynamics in terms of consumer habits and behaviors, reference value systems, emerging business models and widespread technological availability. Trends and innovation trajectories have been identified through mixed-method research (Doyle et al., 2009) rooted in scientific literature review, qualitative-quantitative case studies analysis, technological solutions' mapping, and semi-structured interviews with professionals in the field of retail design, open and tech innovation, and user experience design. The trends have been translated in visual boards (a sort of pre-design concept expressed through visual metaphors), then codified within Design-Orienting Scenarios (Manzini & Jegou, 2006) and capable of inspiring and driving the concepts' development.

2) The second phase shaped and represented design-driven retail futures informed by technology, by using a classic 2x2 scenario matrix nurtured by the visual metaphors previously developed. From a design perspective, Design-Orienting Scenarios are widely used as tools for exploring possible future alternatives within a shared framework to guide choices and help strategic conversation between different actors (Colombi & Zindato, 2019). For this reason, adopting a Design-Orienting Scenario approach could be particularly suitable and valuable. On the one hand, the current complexity of the retail system requires the ability to understand and portray a systemic and future-oriented vision of an ecosystem of instances, actors and variables in ongoing change (Hoyer et al., 2020; Shankar et al., 2021). On the other hand, the technological dimension requires more than ever to be traced and framed within flexible constellations of meaning and open to positive and far-sighted planning. Based on this premises, almost 40 visual metaphors and 4 scenarios were generated emphasizing the possible and preferable technological impacts from a future-oriented perspective: what technology enables today, in the near future and the far future. The scenarios were considered both strategic and visualisation tools and intended to represent as many positive and actionable experience retail futures.

3) Based on the previously defined scenarios, the third phase developed 13 design proposals for new phygital retail environment capable of investigating and imagining new meaningful retail concepts, services, and experiences.

While the third phase mirrors the traditional process of concept generation and development (physical and digital channels identification and definition, customer journey and associated service system development, physical channels interior design etc.), the first and second phases inform concept development through an extensive meta design approach whose relevance lies in its ability to provide long-term visions, frame technology adoption in a meaningful perspective and promote a design dialogue with the various players contributing to innovation in the retail sector.

Interpretative framework. Applying Design-Orienting Scenarios to improve the design of Meaning-driven Retail concepts.

The interpretative framework presented in this article is an outcome of the second phase of the pilot project, and it aims to show how a meta design approach - based on scenario building - can be a valuable tool for proposing, guiding, and sharing future-oriented design solutions. A non-traditional backcasting approach was adopted to establish the interpretative framework. The backcasting practice is here applied in an unconventional way since, unlike the traditional backcasting methodology that aims to identify policies and programmes to act on the present (Dreborg, 1996), in this specific case, the objective is to identify and codify scenarios as representations of evolutionary macro-trends. Design can act on these trends by orienting design action towards new and valuable retail formats and services.

In order to produce the interpretative framework, a typical scenario building technique – the 2x2 matrix technique is used (Curry & Schultz, 2009) – has been applied with both a critical-interpretive and generative objective. This approach is based on identifying two variables describing many key driving forces that influence future developments and, in the case of the retail system, have significant impacts on business models, strategies and operations. Each driving force, or variable, ranges between two polarities, alternative to each other, describing the variable's spectrum possibilities. The intersection of the two variables results in a four-quadrant matrix. Each quadrant returns a valuable scenario from a design perspective to strategically steer the design action and envision its implications within a chosen time horizon. In attempting the matrix, a couple of variables were defined, referring to the varying degrees of interaction between a brand and its

community into a retail environment. Moreover, the variables result from qualitative and interpretative retail trends deepening conducted in the pilot's first phase. This interpretation assumes the user experience perspective as a preferential viewpoint, and the impacts of technology adoption according to different time horizons were also considered. More in detail, the two variables act as follows:

- the first variable, represented on the vertical axis, describes the relational model that the retail experience establishes within a user community, and the polarities vary between an *individual* and a *collective* kind of connection. On the one hand, *individual* refers to the brand's search for an exclusive connection with its end customer, who is the beneficiary of several customised service offerings and narratives. Consumer behaviour monitoring technologies, together with advanced customer relationship management (CRM) tools, combining data analysis and consumption-driven supply chains, foster tailoring servitisation (Dinges et al., 2015). On the other hand, *collective* refers to a network-type connection model that enables intra-community networking by fostering, for instance, collaborative consumption (Arrigo, 2021) and value co-creation processes (Thomas et al., 2020). In such a case, the digital dimension's pervasiveness, enabled by online communities, social media and by the metaverse, together with a sustainable consumption attitude (Lee & Huang, 2020; Shang & Wu, 2022) are among the two most relevant drivers towards this "collectivization" of the fashion consumption process.

- the second variable, represented on the horizontal axis, describes the brand's strategy for organising the retail system and related services. In this case, the polarities vary from a *curatorial* to an *open-collaborative approach*. As far as the *curatorial approach* is concerned, the whole fashion distribution, display and valorisation are intended as an opportunity to deliver the multiple and interconnected narratives of fashion brands. The latter act as curators in selecting and arranging predominantly symbolic and cultural content and return a series of structured and strongly codified narratives to their audience (Iannilli & Spagnoli, 2021). In this context, the consumer accesses content assuming a cultural consumption approach. The purchasing act becomes, first and foremost, a fruition activity and the attachment to the brand is enhanced by an accountable and shared system of meanings. As far as the *open-collaborative approach* is concerned, the fashion retail ecosystem is conceived as a highly open infrastructure to contamination and consumer agency. The consumers become active subjects who "interfere", participate and shape both the communication processes – a phenomenon that originates within the social media with spill-over effects in the physical retail spaces – and the products and services offering with consequences within the manufacturing pipeline and, sometimes, the creative phase. In this context, the dematerialisation of the fashion product (supported by fashion garment 3D modelling tools and Digital Twins) impacted both the fashion supply chain and business models, multiplying opportunities for open-source innovation and crowdsourcing (Casciani et al., 2022).

Crossing such variables results in four quadrants corresponding to many scenarios within which the design-led interpretations generated in the first pilot phase were classified (Fig.1).

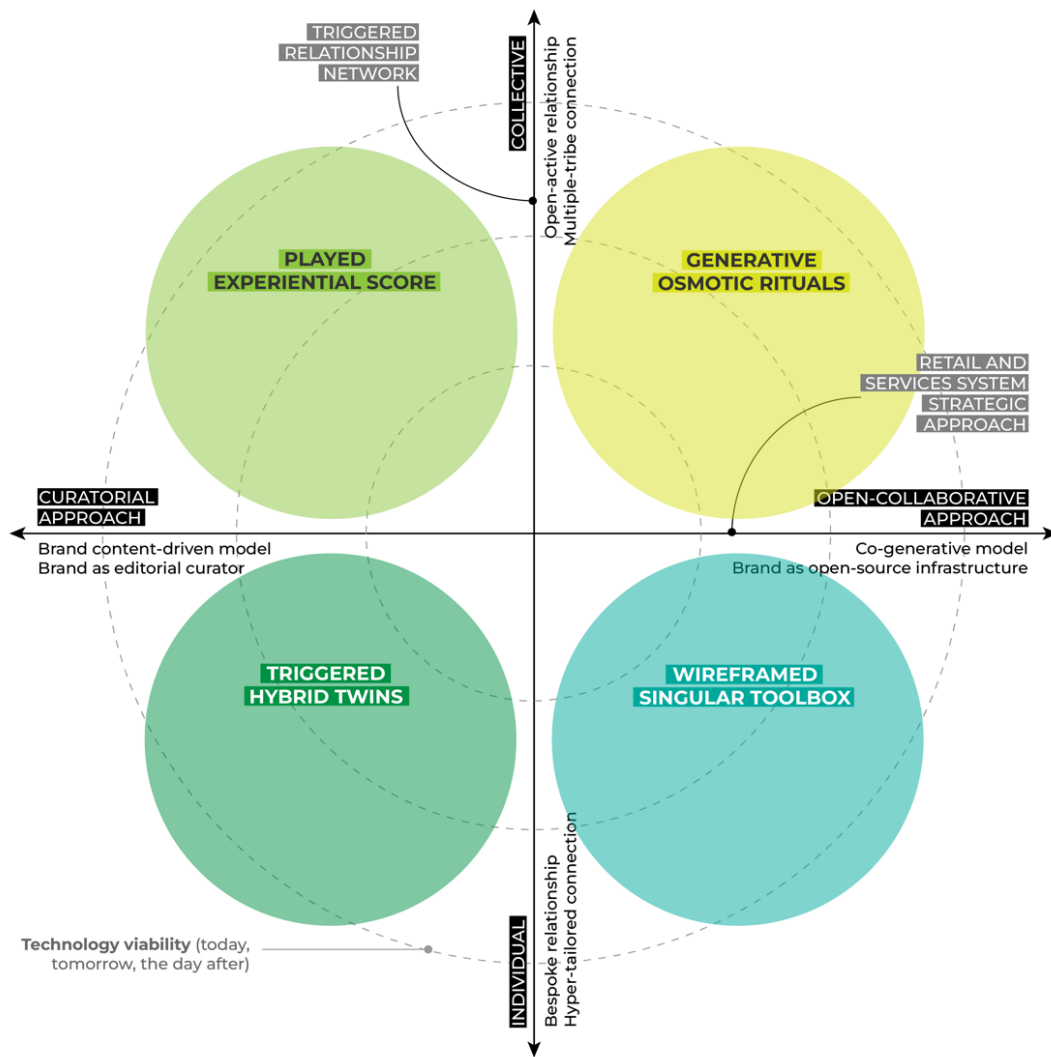


Fig.1. Design-Orienting Scenarios resulting from the pilot project implementation.

The first scenario, resulting from crossing the curatorial approach with the collective relational and experiential dimension, is called “Played Experiential Score”. The increasing multiplication of physical, virtual and mixed channels has allowed brands to experiment with new languages and formats to deliver different contents (Vaccari et al., 2020) and connect various punctual and targeted services. In this operational environment, the risk of fragmentation and parceling of brand value and meaning is high. Fashion companies should strive to maintain a coherent and identity-driven approach. In this scenario, technologies become valuable allies in building planned experiences within a firmly structured palimpsest. In particular, in-store technologies are fundamental as bridges able to guarantee smooth and consistent inter-relations between shopping experience and consumer engagement, a plurality of services and brand narratives (Alexander & Kent, 2021).

The second scenario, resulting from crossing the open-collaborative approach with the collective relational dimension, is called “Generative Osmotic Rituals”. The operational environment of this scenario refers to the growing relevance of micro-communities in orienting brand strategies and policies. The virtual environment sprawl allows aggregation through collective but exclusive experiences and self-recognition based on shared values (Burnasheva et al., 2019; Romero & Molina, 2011). Fashion brands react to these forces by multiplying touch points and adapting languages, codes, and offerings to the new digital platforms – for example, the metaverse – by implementing mimesis, colonisation or re-signification strategies in these environments.

The third scenario, resulting from crossing the curatorial approach with the individual relational and experiential dimension, is called “Triggered Hybrid Twins”. As in the first, this scenario is part of an operational environment marked by the multiplication of touch points and related realms. Unlike the former, however, the fragmentation of the customer experience becomes a strength. For example, AR/VR try-ons,

digital wardrobes, and haptic controllers allow consumers endless possibilities for bespoke customisation and manipulation. In this context, consumers' self-expression is amplified and tailored to their multiple identities.

The fourth scenario, resulting from crossing the open-collaborative approach with the individual relational dimension, is called "Wiredframed Singular Toolbox". The operational environment of this scenario confirms the centrality of the consumer; individual agency becomes the driving force behind the dynamics of retail evolution and a possible source of innovation (Dominici et al., 2017; Singh & Sirdeshmukh, 2000). The brands respond to this scenario becoming open and porous infrastructure capable of providing their audience with the tools to create and co-create value. The servitisation of the retail area (Akaka et al., 2015; Artusi & Bellini, 2020) is a crucial component of this scenario and has significant backward effects on upstream retail processes such as creative and prototyping, sourcing & manufacturing phases.

The scenarios, and the related interpretative framework, were used both as input and operational design tools to generate design proposals. All scenarios are rooted, as already described, within a theoretical discussion based on literature review and case studies analysis concerning the technological capabilities within a variable time horizon: which operations technologies enable at this moment in time, which ones will be desirable in the medium term, and finally, based on weak signals' detection and theoretical speculations, which innovations will be envisaged and desirable in the far future. Mapping the proposed design solutions concerning the identified scenarios allows to emphasise which role is assigned to the different technological solutions with the aim not to display in detail which operations are enabled – simplified workflows, shorter timeframes, reduced iterative processes, etc. – but to envision how the adoption of technology can help produce new meanings within the retail and services sector.

In this sense, the use of Design-Orienting Scenarios proved to be a helpful tool to promote the design of new, valuable retail concepts by allowing the designers involved in the pilot to shift their focus from a retail space-centred design (retail interior design) to a retail experience-centred design (user experience design) by nurturing and leading the conversation with experts in advanced technological solutions.

Conclusions

This article presents how adopting a Scenario-based design-driven approach has been a useful tool for designers to develop future-oriented fashion retail concepts and formats in the context of an increasingly widespread digital experience mediated by advanced technologies. (AR/VR, IoT systems, AI and blockchain, Digital Twins among the most relevant in the front-end management of the consumer experience). The study's central hypothesis is that although a huge and widespread availability of technology, which has already affected retail operations at many levels, needs to be matched by adequate consideration of how the technology should bring innovative insights into the retail sector. Faced with a predominantly technology-driven innovation, which forces retail to a continuous recourse and adaptation process to remain competitive, it is necessary to find new ways and opportunities to trigger meaning-driven innovations that result in new formats, concepts, and retail experiences. Within this framework, design, which is required to reconsider its role and redefine practical operational approaches, may once again become a relevant player thanks to its natural capacity to trigger meaning-driven innovations.

A pilot project was conducted to explore and evaluate the effectiveness of adopting a scenario-driven approach involving one of European most relevant technology providers, Deutsche Telekom. This perspective shift, which focuses on the technology's capabilities to trigger new and future-oriented customer experiences instead of the conventional pre-designed conversation with the company or brand, is interesting as the technologies are placed within a medium- and long-term evolutionary perspective. Within this operational and interpretative framework, technologies have taken on different roles and meanings:

- Supportive technologies: technology is considered purely as instrumental to functions and operations that support retail sales and services such as shopping experience, payment system, info/product display or information search (Pantano & Vannucci, 2019). Adopting this perspective hardly promotes radical innovations of meaning; much more frequently, it allows the technology to penetrate and be sharpened for specific tasks on an ongoing and incremental basis.

- Narrative technologies: technology is conceived as a channel for broadcasting narrative fragments. In this regard, the narrative is to be understood as a knowledge and value generator (Bruner, 1991) by activating experiences' elaborations, understanding and interpretations (purchasing experiences, in this specific case). In the progressive fragmentation of channels, formats and platforms of communication, distribution and engagement, considering technology as a narrative tool in its own right means experimenting and unhooking established dynamics of use and playing with new grammars and syntaxes (Iannilli et al., 2019).

- Generative technologies: the concept of generative technology is closely related to that of technological agency, namely "a special type of human-computer relation, in which a technology is used to act and make decisions on behalf of a user for social affairs" (Yu et al., 2021). This framework, within which the leading

actor is AI, is not entirely new (think, for instance, of the use of AI for recommendation agents or automated shopping assistants) but may prove to be the most promising for generating significant innovations in the field (Shankar, 2018). In this sense, the challenge is to bring together human and technological agencies to experiment with new creative production and distribution models through widespread value co-creation processes.

Limitations to this research are represented by the need for more involvement of the management domain within the pilot that could be biased in exploring the multiple implications of using scenarios for retail concept generation. The management domain is relevant here because of the process of complexification that has affected the system of production, distribution, and consumption, together with the multiplication of channels and touchpoints which makes its expertise significant in the dynamics of value creation. Similarly, the IT expertise was mainly involved in the initial inquiry research phase. In contrast, their more operational involvement in the scenario validation and design proposal development phases would have been suitable. Finally, a significant limitation derives from the non-involvement of the final consumers in the pilot project. In fact, on the one hand, the pilot benefited from an extensive analysis of consumption trends; on the other, it was oriented towards testing the Scenario-driven approach in the context of professional experts. Future research directions will consider the involvement of end users to verify this approach and develop additional tools in a broader co-design context.

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