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Slow design-driven innovation: A response to our future in the Anthropocene epoch

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Human activities have changed the Earth System to the point where we are in a new geological epoch, the Anthropocene. This is characterized as a climate crisis with the practices and meanings associated with innovation being challenged. 'Slow Designers', including those living in the most climatically vulnerable parts of the Earth, are innovating design practices by building on the heritage and history of local communities and using eco-friendly materials. These craft-inspired approaches could mitigate our over reliance on the Earth System. Slow design-driven innovation (DDI), by translating communities' heritage, history and territorial importance, creates sustainable products that customers love and care for. We contribute to the theory of DDI by bringing together concepts from the Slow Food movement and DDI, coining the term 'Slow Design-Driven Innovation'. Slow DDI consists of four actions: *envisaging* the heritage, *featuring* the biodiversity in the product, *translating* traditional techniques into processes for innovative products and *narrating a story* about the products and their makers to promote new meanings. Managerially, this contributes to a model of responsible production that confronts current practices in today's climate crisis, as the products are long-lasting, high quality and are created using local organic materials, thereby protecting biodiversity.

KEYWORDS
Anthropocene, craft, ethnic minorities, slow design, slow design-driven innovation, sustainability, Vietnam

1 | INTRODUCTION

Geological data provide evidence that humans have affected the Earth System to the point that we have transitioned from the Holocene and entered the Anthropocene (Williams et al., 2019; Zalasiewicz, Waters, Williams, & Summerhayes, 2019). The Anthropocene, a term created by Nobel Prize winner Professor Paul Crutzen, describes the period of time during which human actions have had a drastic effect on the Earth and its ecosystem (Zalasiewicz, Williams, Haywood, & Ellis, 2011), on climate and on the very evolution of the geological strata (Steffen, Crutzen, & McNeill, 2007; Steffen, Grinevald, Crutzen, & McNeill, 2011). Our modes of production and consumption have led to this new epoch, and its consequences require us to urgently rethink the business system, before it is too late (Scranton, 2015) and, indeed, management learning and education (Gasparin et al., in press; O'Doherty, in press). Many organizations including Greenpeace, the Green Parties and the United Nations have for decades been calling for actions to fight climate change. In 2019, several governments pronounced a climate emergency, catalysed by extreme weather, school children (Thurnberg, 2019), climate activism (e.g., Extinction Rebellion) and social media pressures. Furthermore, the COVID-19 pandemic has led to questions over whether the pre-COVID-19 business system needs to be reconsidered.

Entire countries have adopted a social distancing strategy using a population lockdown tactic to avoid transmission of the virus. These tactics and resulting impact on supply chains have led to questions over current modes of production and consumption. *The Economist* (8/4/2020) reports that 50% of the world's gross domestic product is in lockdown, and the resulting closure of commercial activities is more severe than any previous financial crisis. For firms to survive the new post-COVID-19 environment, *The Economist* emphasises three new trends: increasing adoption of new technologies, retreat from the global supply chain and a rise in new oligopolies (Ibid.). In the post-pandemic world, organizations and policymakers will be faced with a series of stark choices—not least as to whether we wish to return to the system of globalized supply chains and associated ways of working that, while important for our way of life, have accelerated the spread of the pandemic.

The Guardian (12/04/2020) reports that 'the speed of the "return to normal" is not the only thing that matters. The manner in which the world's leaders manage the colossal economic and political shocks caused by the virus is also of the utmost importance. And at the top of their list of priorities, alongside human welfare, must be the biosphere and its future'. The spread of COVID-19 is but one symptom of the current model of resource exploitation. It raises questions over whether a global economic recovery that is truly sustainable is possible, by incorporating, in the financial models, the social and environmental dimensions that are currently missing.

The current models of production, distribution and consumption have stimulated and been stimulated by a culture of overconsumption and exhaustion of the natural resources, causing climate change, biodiversity loss, natural resources degradation (Dalby, 2015), ethical issues (Introna, 2009), increased poverty in disadvantaged communities (Szerszynski, 2010), waste management problems (Hird, 2017), excessive and inefficient energy use (Urry, 2014) and increased vulnerability for many developing countries in which globalized products are manufactured (Siegle, 2011). However, very few companies and very few managers are responsive to the ecological crisis and do not adopt an innovative approach to reduce their impact on the Earth System (Nyberg & Wright, 2020).

Companies cannot continue to do 'business as usual' in the Anthropocene, as new radical solutions are needed to move innovation forward in order to mitigate this crisis (Gasparin et al., 2020). The future is so stark that we need to be radical in our thinking in relation to how firms innovate in the future, moving beyond the business as usual approach that they have been adopting. Business as usual is a popular term in the management literature, indicating the continuity of operations of the business despite some difficulties or disturbances in the environment. Business as usual indicates the 'real' activities that take place behind the well-formulated ethical rules (Palazzo & Richter, 2005). The unethical procedures become rationalized in organizations through socialization practices, as individuals believe that they are moral and ethical individuals and thereby allow themselves to continue engaging in environmental and damaging practices without feeling any wrongdoing, pang of conscience or guilt (Anand, Blake, & Mahendra, 2004). The 'business as usual' approach involves both environmental and societal wrongdoings. In this paper, we focus on the work of a group of designers that have challenged this 'business as usual' approach in their design practices. We undertook a qualitative research project to explore: In the time of the Anthropocene, how do designers innovate the design process to move away from a 'business as usual' approach?

To answer this question, we mobilize the literature on design-driven innovation (DDI), as the notion of 'business as usual' needs to systematically change in order to become 'business in the Anthropocene'. This means that the design process needs to embrace a new meaning; we build on DDI as it facilitates radical innovations through meaning (Dell'Era & Verganti, 2010; Gasparin & Green, 2018). DDI is a framework that supports the interpretation of emerging socio-cultural norms and enables the proposal of radical new meanings (Dell'Era, Altuna, & Verganti, 2018) for new products that customers will love (Verganti, 2016) and also for reinvigorating the life cycle of long-standing products (Gasparin & Green, 2018; Sehnem, Piekas, Dal Magro, Fabris, & Leite, 2020).

Building on grounded ethnographic research conducted to explore slow design practice, in a setting uniquely exposed to the challenges arising from business as usual in Vietnam, we contribute to the theory on DDI by theorizing a design approach that is 'slow'. 'Slow' is inspired by the Slow Food movement, which encourages and champions local high-quality organic food production and at the same time protects regional heritage.

We chose to conduct the study in Vietnam as it is widely acknowledge to be one of the 10 countries most affected by climate change (John-Baptiste, 2019).Prior research also suggests that designers in Vietnam are proactively looking for solutions and adopting innovative perspectives on sustainable and environmental design, which captured our attention (Gasparin et al., 2020).

Investigating these approaches in more detail allowed us to uncover the degree to which the concept of the 'slow' movement is embedded in the design processes and among communities. Slow design-driven organizations are producing innovative products and translating the heritage and history of the communities into new products that customers would love and care for. The products are long-lasting, high quality and created using local, organic raw materials, collected and processed in such a way that is not impacting negatively on the biosphere. During the design process, slow designers invest in communicating to the end-users the importance of the local region, heritage, consideration of the environmental impact and the reusage of objects. At the same time, through the production of slow products, designers work to rebuild and rediscover the local identity of Vietnamese culture and heritage. This can be challenging due to the colonial past and isolation of ethnic minorities.

In contrast to global companies, slow designers are not asking the workers in the supply chain to simply manufacture the raw materials and deliver them. Instead, women (who represent most of the workforce) are empowered because they become part of a design process, receive fair compensation for their work and cocreate the products by mobilizing their heritage and knowledge in the various materials to design new meaningful products that

interest customers, as these products embed a story told through the products' features. Building on this practice, we suggest that the 'Slow Design-Driven Innovation approach' could become the new 'business as usual' at this time of the Anthropocene. Thus, we propose to integrate DDI with a human, historical and Anthropocene perspective.

In this paper, we propose the following three contributions:

1. Conceptually, we advance the theory of DDI by bringing together the concepts from the Slow Food movement and DDI, coining the term 'Slow Design-Driven Innovation'. The Slow Design-Driven process consists of four actions: *envisaging* the heritage and the history of a community in order to translate them into contemporary products; *featuring* the biodiversity of the place in the product; *transferring* traditional techniques into processes for creating long-lasting quality innovative products; and *narrating a story* about the products and their makers in order to interest the customers and encourage them to care about these stories. Because the features of a product are performative (Gasparin & Green, 2018), the story is created through narratives on the design process and the explication of each product's features.
2. Empirically, we establish that Slow DDI provides an avenue for creativity and innovation management scholars to propose solutions to address the climate emergency and to promote and disseminate concepts of sustainability and sustainable production. Slow DDI reduces the use of natural resources (Beverland, 2011; Cianciullo, Realacci, & De Benedetti, 2005) and connects products with producers and end-users (Manzini & Meroni, 2007). Slow design-driven organizations invest in communicating to the end-users through storytelling the importance of the biosphere and heritage and also the importance of reducing the environmental impact of innovation at this time of the Anthropocene.
3. Managerially, we outline a model of alternative responsible production that confronts and questions current practices in today's climate crisis, perpetuated by globalization. A slow approach to innovation is intended to connect innovation to local sources, with lifestyles that are ethical and sustainable.

The paper is structured as follows: First, we present the theoretical background of the paper, followed by the method based on an ethnographic study, and the data analysis: the Slow Design-Driven Innovation process and the creation of new meanings. We conclude with a discussion and a proposal for future research.

2 | THEORETICAL BACKGROUND

The theoretical background of this paper is built on two streams of research: (i) introducing the Anthropocene as a new geological epoch and (ii) research on DDI as a strategic process for innovation. Research on the Slow DDI model allows us to integrate theoretical discussion on a new approach to slow innovation, with the aim to theorize the design projects identified in the field.

2.1 | The Anthropocene, a new geological epoch

The Anthropocene is the new geological epoch, although our colleagues from the Anthropocene Working Group have not yet formalized it completely (Subramanian, 2019), the term was created during a speech held by Professor Crutzen at a scientific meeting in Mexico in 2000. Jan Zalasiewicz explained in the Anthropocene Research Meeting (held on 1 June 2019) that 19 year as earlier, in a scientific meeting in Mexico, Professor Crutzen wanted to depict the changes in the Holocene, which are so dramatic. On the spot, he claimed that we are no longer living in the Holocene epoch, rather, we had moved into a new epoch, influenced by human impact, hence the term 'Anthropocene'. This has subsequently been conceptualized in his writings (Crutzen , 2002; Crutzen & Stoermer, 2000). Defining the Anthropocene from a scientific perspective is crucial, as it means that humans have a systematic impact on the strata of the Earth, to the point that they are modified by human activities. Thus, through understanding the Anthropocene and the modification of the strata, it is possible to understand the link between human action, climate change and the newly defined epoch.

The Holocene is a generally environmentally stable period of time that began 11 700 years ago. During this epoch, climate change has happened but in a cyclical and expected way (Wallace-Wells, 2019). What we are now experiencing is a dramatic and extreme change (Scranton, 2015). Geologically, the starting point of the Anthropocene seems to coincide with the atomic bomb; however, the Anthropocene might have started with the first industrial revolution, because the British Empire initiated depleting resources and heavily polluting cities with coal (Hamilton, Bonneuil, & Gemenne, 2015). The Anthropocene is a geological revolution caused by activities of human origin, as capitalism based on fossil fuel ignited by industrialization has had and continues to have profound effects on the chemistry of the atmosphere and oceans (Bonneuil & Fressoz, 2016), on the physical structure of the land surface and on biological communities (Zalasiewicz, Waters, Williams, & Summerhayes, 2019). Although humans have influenced the Earth System since the early days of agriculture, it is with the 'Great Acceleration' that humans have changed the Earth System at an unprecedented level. In fact, the exponential increases in human population growth, industrialization and globalization that began in the mid-20th century, have changed the chemical structure of the Earth. Among scientists, there is now a consensus that the starting time of the Anthropocene should be placed around the mid-20th century and the post-WWII 'Great Acceleration' of population (Zalasiewicz et al., 2016). There has been a 120 ppm rise in CO_2 above preindustrial levels, and the presence of markers such as artificial radionuclides, aluminium metal, flying ash particles, persistent organic pollutants and plastic are changing the Earth's stratigraphy (Zalasiewicz et al., 2016). In fact, the geologists who are working to assess the geological perspective of the Anthropocene are finding evidence that humans have inexorably changed the strata of the Earth (e.g., Waters, Zalasiewicz, Williams, Ellis, & Snelling, 2014, Waters et al., 2016; Williams et al., 2015; Zalasiewicz, Waters, Williams, & Summerhayes, 2019). These rapid and accelerating changes to the

Earth System have largely been driven by industrial, financial, business and political patterns, which have been normalized within the current globalized world. Scientists have been warning us that if we maintain this pattern and do not modify the current modes of production and consumption, within 70 years, we will have a hotter and heavily polluted planet with a degraded biosphere that will not support the present human population.

The Anthropocene has created a new 'sphere', the technosphere, which has become a competitor of the living resources on Earth (Bonneuil & Fressoz, 2016).

We define the physical technosphere as consisting of technological materials within which a human component can be distinguished, with part in active use and part being a material residue. The human signature may be recognized by characteristics including form, function and composition that result from deliberate design, manufacture and processing. This includes extraction, processing and refining raw geological materials into novel forms and combinations of elements, compounds and products. (Zalasiewicz et al., 2017, p. 4).

Human actors are now relying on the technosphere, upon which all humans depend for survival, in a parasitically harmful approach to the biosphere (Zalasiewicz, Gabbott, & Waters, 2019). Organizations are behaving like bad parasites as they are taking, using and disposing a lot of natural resources, without giving back what they take to nature, and without developing mutualistic approaches to business (Gasparin et al., in press).

Research and development advancements and the creation of technological innovations are created to increase the firms' competitiveness. Thus, innovations are happening at a very rapid pace, evolving and simultaneously changing the biosphere, causing a dangerous disequilibrium in terms of climate and living animals. To make a significant change to the current state of affairs will require a transformation of economic, financial, commercial and social practices in proportions of the kind we discuss in this paper.

2.2 | Design-driven innovation

Design is a complex concept, which presents a culture and enables humans to coordinate designers' propositions, agree on joint action and construct realities (Krippendorff, 2006). Design is a collective and networked research process of meanings and design languages (Dell'Era & Verganti, 2007). As a language, design deals with meaning, although it is not a simple linguistic operation because the features of a product are performative in explaining its materiality; a new meaning is created through a translation process, by connecting otherwise disconnected features of the product (Gasparin & Green, 2018). Designers are crucial because they provide access to a particular type of knowledge as well as to product languages and meanings, and because they are able to provide interpretation for different cultures (Dell'Era & Verganti, 2010). Designers are language brokers, as they capture and recombine socio-cultural knowledge into new product semantics (Verganti, 2003) across different social and industrial settings, creating breakthrough product meanings. Designers translate abstract knowledge into ideas and concepts. Products have meanings that are related to symbolic and emotional values (Dell'Era, Marchesi, & Verganti, 2010). In the process, companies also use interpreters to create and diffuse the new meanings, such as end-users, companies, producers, media, cultural centres, schools and artists (Dell'Era & Verganti, 2010).

The new product resulting from the design process has a unique combination of technology push and market pull and is meaningful for customers (Dell'Era, Marchesi, & Verganti, 2010). DDI interprets design as 'making sense of things' and the research and development process as the process of creating new meaning (Verganti, 2008b). It reflects on why people do things in terms of values, norms, beliefs and aspirations and how these evolve through the work of interpreters, who are actors conducting research on a specific theme.

Design deals with two kinds of meaning: the meaning that people give to products and the messages that products convey through design languages (Verganti, 2011). In DDI, design is understood as a sense-making process, as it gives and makes sense of things (Verganti, 2008b). DDI has the potential to create a significant competitive advantage as it understands the meanings for customers and has the potential to create disruptive new markets (Koomans & Hilders, 2016), because new design breaks the meaning rather than reinforcing it.

The aim of the new product development process is to develop new winning designs (Utterback et al., 2006) that not only meet but also exceed customers' expectations and satisfaction by proposing products with new meanings. Therefore, the DDI process is about making proposals (Verganti, 2008b). In fact, the design process is not concerned with the establishment or development of a new technology but with the creation of a radical new product that provides new meaning, through the technology (Verganti, 2008b).

Organizations implementing DDI need to understand and accept the establishment of design in a company (sensitization), which is practiced within a specific problem area (application), and implemented in a sustainable way (implementation) (Acklin, 2010). DDI is powerful as it is embedded in a cultural dimension (Verganti, 2008b) incorporating cultural, symbolic and evocative contents, which communicate and make sense of companies' values (Bertola, Vacca, Colombi, Iannilli, & Augello, 2016). Compared with other innovation processes, DDI is based on the semantic dimension that could lead to the creation of a radical product.

The design process develops narratives by explicating them into scenarios and semantics of components, exploring technical details, synthesizing, realizing and finally testing them (Krippendorff, 2006). In DDI, the design process is divided into three phases: listening, interpreting and addressing (Verganti, 2008b). Listening means gaining access to knowledge about possible new product meanings by interacting with interpreters; interpreting refers to developing a unique proposal and addressing the interpreters so they can communicate it (Verganti, 2008b).

DDI is not created into steps, stages and gates but is a relational approach, as it relies on a network of interpreters and actors. Despite the conspicuous literature on innovation and creativity management in relation to DDI, in DDI, sustainability and climate emergency need

greater attention. Therefore, through DDI, we will develop a new model that recognizes the importance of configurating natural resources, in order to not impact too profoundly on the Earth strata, creating an unexpected conjunction of human and nonhuman elements. Innovation scholars have traditionally taught that innovation is a critical source of competitive advantage as it helps firms to survive in a changing environment (Anderson & Tushman, 1990). Innovation models and theories valorize a particular concept of disruptive innovation to sustain industrial competition (Christensen & Bower, 1996), strategic decision-making (Ansari, Garud, & Kumaraswamy, 2016) and leadership in companies that are disruptors (King & Tucci, 2002; Tellis, 2006). However, this attitude towards innovation, constant growth and fast production to increase volume and reduce costs is not informed by a systematic approach to the complexities of the impact on the Anthropocene and the reversible relations and dependencies to which it gives rise. The models fail to engage with the Earth System and the Anthropocene as a crucial actor and do not demonstrate how organizations may shift, seeking different modes of relations and the exploration of 'natural contracts'. DDI literature, because it focuses on changing the meaning of products, can help in understanding how to change the meaning of the design processes (Artusi & Bellini, 2020).

3 | METHOD

3.1 | Data collection

To answer the research question, 'In the time of the Anthropocene, how do designers innovate the design process to move away from a "business as usual" approach?', design practice is needed to be understood in the context of the working environment. To facilitate this, ethnographic research was considered most suitable to study a number of case organizations. Ethnography allows both the engagement of design practitioners with their suppliers to be studied and the construction of meaning to be interpreted through deep engagement with related actors. The lead author, Dr Marta Gasparin, lived in the practitioner environment for 6 months in order to conduct the ethnography and was active in the field for 3 months a year for 2 years from 2017 to 2019 inclusive.[1] Cases studies were identified following initial contact with a design agency based in Hanoi. Hanoi has a high number of independent design organizations with strong links to heritage. The designers within this agency put the lead author, who was in the field at the time, in contact with potential case organizations who were operating away from a 'business as usual' approach. Organizations were contacted following evaluation of their websites, including their product portfolios, and if they were launching at least one new product per year.

In collaboration with the case study organizations, the initial research aimed to establish how the design practices were going beyond 'design for business as usual'. In particular, exploring how design emerged and how the organizations managed the design processes. Most of the creative designers were working with craft communities in the rural areas and with ethnic minorities. Vietnam is a transitional economy (Gasparin et al., 2020; Gasparin & Quinn, 2020b). Although craft in Vietnam is very important and quite pervasive in establishing local cultures, it is disappearing amidst globalization and rapid development (Gasparin & Quinn, 2020a). The participating designers are keen to develop sustainable growth for ethnic and craft groups based on capacity building, by linking ethnic minorities with designers in the city, in order to create sustainable growth through an ethical supply chain. There are structural inequalities within the rural communities, particularly those based on gender and ethnicity, and some designers decided to address them by better understanding ethical practices, the sustainable supply chain and the properties of raw materials and craft practices. The participating designers would reflect on these practices and on how to address the problems faced by ethnic minorities and ensure long-term community sustainability. Craft plays an important economic role, as it was the fourth largest employer in Vietnam, but current economic policies are erasing the local heritage. As a result, the cultural heritage of ethnic minorities exemplified in traditional craft skills is being dissipated, and they live in poverty and political marginalization.

The interview protocol was constructed to understand the design practices that designers develop in order to valorize craft-making as a form of cultural heritage and to create economic development especially among women and girls from marginalized ethnic minorities. The researcher was provided access to the design workshops, allowing on-site observations, and travelled with the designers to ethnic minorities' living in remote communities. Also, she analysed the social media posts and lay audience publications, including marketing material, Facebook posts, Instagram posts, and newspaper and magazine clippings and brochures. Furthermore, scheduled semistructured interviews (n = 12) and informal ad hoc interviews (n = 25) were conducted, lasting between 60 and 150 min. The formal interviews were conducted with designers. The informal interviews were held with customers at the shops and with ethnic minorities' representatives. The interviews were conducted in English and on two occasions with the help of an interpreter. Informal interviews were first noted in a diary and then digitally transcribed.

To analyse the multiple sources of data, including the interviews that were transcribed, coding and analysis were facilitated by using Dedoose, a software product to facilitate qualitative data management. A formal thematic coding process (Saldana, 2015) was used, and themes were combined into a new thematic analysis (Table 1). These were then aggregated using the key themes emerging from the DDI literature review: design processes to create new meanings and the role of interpreters. They were then theorized into 'innovating design through slow processes' and 'the role of slow designers as interpreters'.

4 | FINDINGS

In the exploratory study, we realized that in Vietnam some designers have different approaches and sensitivities towards innovation and

TABLE 1 Codes for the analysis

First round of coding	Second round of coding	Aggregate coding
Business model-craft; core business; sustainable fashion; sustainable handcraft; creating awareness of Vietnamese craft; environmentally friendly; preserving and developing local traditions; better understanding of the supply chain; business plan; changing the working practice after the programme.	Business approach	Innovating design through slow processes
Innovating designs through heritage; gaining more knowledge on the traditional craft; connection with ethnic minorities; learning how to feel the material; little support in marketing; making craft cool; thinking about a long- term approach rather than short-term; not one off – continuing the training; protecting the plants; planting the plants; use only wild crops; earth equilibrium.	Interpreters New groups involved in the design process	
Connection with young creative people; design thinking group management; dynamics; importance of the residency; development showcase in fairs; increasing employees' number learning process; respecting nature cycles.		
Foreign customers; tourists; Vietnamese market.	Marketing	Role of slow designers as interpreters
Direct/fair; online/social media; storytelling; revival of craft; social enterprise.		
Contacts with ethnic minorities; fabric and colours; patterns used by ethnic minorities; lack of certification of origins; lack of project management; reachability; difficulty in defining sustainability; work with communities; emotional process.	Struggles in the design process	
Architecture; design; fine arts; tourism.	Educational background of the slow designers	

creativity. This observation reflects a drive to use their long-standing knowledge of innovation and heritage for effective solutions to address global and societal challenges, rather than simply to gain a competitive advantage. They design products and services that, in comparison with typical approaches, will reduce the carbon footprint, improve global health, address poverty issues and drive social change (e.g., Cajaiba-Santana, 2014; Nicholls, Simon, & Gabriel, 2015; Phills, Deiglmeier, & Miller, 2008). They also work to protect the biosphere, by using only natural resources, respecting the cycles of nature.

4.1 | Innovating design through slow processes

In 1995 the United States and Vietnamese relations were normalized. Since then, Vietnamese companies have focused increasingly on market competition. The number of privately owned and international businesses increased attracting high levels of foreign direct investment. This created new markets, modernized industry, built new infrastructures (Cameron, Pham, & Atherton, 2018) and moved towards a democratic, open and innovative economy (World Bank Group & Ministry of Planning and Investment of Vietnam, 2016).

The 38 participating creative organizations produce new products and services that address challenging societal issues. These include (according to the interviewees) income provision; social and economic participation and empowerment of marginalized and vulnerable groups; generation of rich and diverse employment opportunities; maintenance of traditional, regional and national cultural identities; provision of vocational programmes; stimulation of an entrepreneurial mindset; and catalysation of debate on economic, social and environmental issues.

However, they are facing challenges, as the design process is not well understood in Vietnam. There is very little knowledge and research on what Vietnamese design looks like, feels like and does, and very little interest in researching how the emergent design process is innovated by looking forward, by way of reclaiming the Vietnamese past as the country transforms. Through the journey in the field, we had the opportunity to pause and reflect on these ideas. The Slow DDI process in slow design-driven organizations is initiated by reflecting on the relationships design has with local craft heritage. Mostly, craft consists of working with one's hands and utilizing artisanal tools rather than industrial machineries. The long tradition of Vietnamese craft is rooted in social need, which has and continues to shape the designs made in Vietnam.

Interestingly, a category of designers, which we call slow designers, has developed some sensitivities towards social and environmental issues, which do not seem to be taken into consideration by larger manufacturing industries. In fact, here, there is very little discussion and action towards reducing the impact of business growth while climate change accelerates. Vietnamese companies and organizations usually care about economic development, rather than the environmental impact of their activities. During rapid economic development in the cities, environmental protection or sustainability did not seem a relevant prerogative. But slow innovators are able to step aside from economic profits, growth, gross domestic product, investments, infrastructure development and energy production.

Analysing the data, this research uncovered the degree to which the slow movement phenomenon has emerged among local and regional communities in the Vietnamese economy.

5 | DISCUSSION

The idea of theorizing Slow DDI emerged following analyses of the interviews with designers. One notable interviewee even considered herself 'Slow' in the sense of Slow Food. Slow Food is a movement funded by Carlo Petrini which began in Italy in 1986 (Petrini, 2016), to contrast the effects of globalization in the food context, to prevent the disappearance of local species and local traditions, responding to exacerbated tensions within rural society and educating sustainable consumption. The Slow Food movement has facilitated communication to the public the importance of taste and the use of fresh, authentic and high-quality products. It has emphasized the pleasure of slowness in producing and consuming with others, and the values of artisanal, authentic, nonstandardized products. It has also been the centre of a campaign to protect biodiversity and local traditional production methods, to ensure long-term sustainability both environmentally and socially, to advocate for fair treatment and compensation for all and to protect local cultures, languages and dialects (van Bommel & Spicer, 2011). Slow Food is now present in more than 160 countries (Dumitru, Lema-Blanco, Kunze, & García-Mira, 2016). Slow Designers take inspiration from this approach to food production. This concept was then presented to 12 of the 38 designers previously interviewed, through a 1-day workshop on managing social innovations, organized by Dr Marta Gasparin. After having described the principles and processes, they accepted enthusiastically the concept of Slow, and self-identified as Slow Designers. In fact, they were using materials in ways that respect the natural cycles of materials production. Because they needed to respect the cycles and not force them, they were doing things slowly.

5.1 | Slow designers envisage local heritage

The slow designers we interviewed are working to mobilize creativity and design processes that aim to reflect upon local identity, what constitutes local heritage and how it could be embedded in the shape of the design. They are also reflexive in questioning what Vietnamese culture is and what defines local heritage, which can be challenging to uncover due to the country's colonial past. Vietnam is a fast-growing country, but much of its growth happens in the city, leaving behind the rural areas. It is experiencing increased vulnerability common to many developing communities in which globalized products are manufactured. These are mostly populated by ethnic minorities, so the fast growth not only divides cities from more rural areas but also divides along ethnic lines. Most of the ethnic minorities live in poverty, subsisting on agriculture and craft. Women are the most disadvantaged and excluded from education: usually boys are sent to school while girls stay at home working in the household. By attempting to embrace slow movement philosophies, slow designers are working closely with ethnic craft makers to cocreate design, asking them to reflect upon their heritage to create innovative products for customers. Slow designers based in Hanoi are working with women living in the craft villages in the remote mountain regions to create contemporary-looking products using traditional technology and the craft heritage of the place. They are therefore using design-driven approaches to innovate products and services inspired by local heritage and translating them into products that customers will love and care for.

One of the slow designers commented that she is developing products and services that are in cooperation with ethnic minorities, with tailors in Hanoi working with a supply chain based regionally in Lao Cai. All the resources that are used are natural and respect the cycles of nature, they are picked according to ancient knowledge of the properties of the plants and how they influence the biosphere. The ethnic minorities involved in her design process are communities that have been facing religious, political and ethnic persecution.

Slow designers are working to research these remote communities' knowledge surrounding heritage, craft practices, histories and societal norms around the craft. They then interpret this in order to incorporate within the design process, prior to translating it into innovative products. The slow designers are narrating a story about the complexity of such norms and how they are at risk of disappearing. The adoption of a slow approach to design has been having a positive impact on the preservation of cultural heritage and local traditions, through the creation of different forms of employment based on cultural products in the rural communities. Slow design-driven practices

are developing an important approach also in relation to the preservation of nature.

In fact, the local communities have a deep knowledge of which plants should be used to preserve the ecosystem, which ones are compatible with the biosystem and which have medical properties. This knowledge is mobilized by the slow designers and translated into slow design-driven processes, mindful of the preservation of natural resources. Following the traditional design process, the designers use only raw materials that are naturally made and avoid the use of pesticides and chemical products, because only natural colouring processes are used. This avoids the use of chemical dying.

5.2 | Slow designers act as interpreters

Slow designers are involved in ethical and sustainable business. In our interviews, it emerged that they need to narrate stories about the meaning of each design. The final design and the design process need to be translated for the consumers, as they might not understand it. In one interview, a designer commented on the question of her commitment towards sustainability and educating the customers:

> Yes! Absolutely! I totally believe [in this approach], because talking to you guys, who are working in the same field, and have a similar interest. I totally believe it's going to be the future movement. It's already happening, but the impact of it is going to be really wide and spread around the world, and how lucky is … a lot of places in the world, including Vietnam, we still have that [craft heritage], and some parts of Vietnam are still really, pretty much like that, florent. But we, again, the awareness and the knowledge about it [the importance of heritage] is very limited, so I think when people are more aware about it , they are going to understand it better and they are going to value it better. And I totally believe it. I'm writing about this issue at the moment, for a magazine as well. They just asked me that, 'Why did you choose this path for your career?' , Because I think consumerism is so spoiled, and it's so … we're just fed up, we're overfed, and we're overdosed, and we're overeating. It's come to the point that you realize that you don't need more, you don't need to own things, and I can see my friends and including me, I'm just looking at things around, and I try to get rid of them. We are looking for authenticity, for products with a history and stories to be told.

> The women [involved in the slow design projects] can work at their place; in this way, they don't need to leave the villages and the family to go to the city to find a job.

In explaining how she communicates the stories of the products, she says she portrays the makers of her raw materials. The craft communities in the rural areas engage with farmers who work in the corn and rice fields, as well as engaging in activities such as basket and fabric weaving, batik painting, indigo dyeing and embroidering. They are using traditional agriculture and only natural resources, although in recent years, the central government has asked them to switch to chemical products to increase the productivity of the fields. However, they seek to resist this policy, as the artificial products are destroying the locally produced crops. She explained that each community and village has a very unique identity. Each village has a specialized typology of craft that is part of their cultural identity. For example, In Lao Cai province, the Black H'mong tribes maintain their cultural identity with their dark indigo-dyed costumes and hemp weaving, the Dao with their red indigo and the Thai through silk and cotton. Each group has a unique way of expressing their cultural identity through minimalist geometrical patterns with various colour combinations. However, these craft skills are not properly preserved, and slow designers are developing pathways to support the embedding of histories, memories and traditions, through adequate state facilitation and by building stronger relations between rural communities and urban populations. Slow designers are working to create a bridge between rural and city through fashion design. This helps to keep family ties and reduce the divide between the city and rural regions. As another designer commented:

5.3 | Slow designers protect biodiversity and feature it in the products

Designers who have adopted a slow approach had previously been working for several years in the traditional fashion industry whose practices are polluting the planet. Instead, they want to work with a model of business that combines traditions with the development of a fairer place. Some of them have decided to learn how traditional garments were made in the local communities, using only natural colours and natural dyes to increase the quality of the products and make them long-lasting. They have also been reflecting on what happens to the product after it is dismissed: Artificial products cannot be recycled nor decompose (Figure 1).

This has contributed to raising the awareness on craft communities, creating services for sustainable tourism. The design and innovation processes are built on local heritage, using only locally cultivated raw and organic materials and being careful to preserve the biodiversity of the place, codeveloping the designs with the women from ethnic minorities, who possess a vast knowledge on plants: cultural and environmental heritage become a source of innovation.

Vietnam is a country with a long-standing, historical, artisanal heritage where ancient craft traditions have been retained to this day. Innovations and designs are created in a utilitarian way to make things work and function through use by the individual Slow Designer, with an emphasis on the manual capability of the Slow Designer rather than the usability of the machinery. This means

FIGURE 1 A slow designer researching the materiality of the product with a representative of the ethnic minorities

FIGURE 2 Slow designers studying the raw materials and their use with a representative of the ethnic minorities

that there is a profound heritage and knowledge about the materials, and sustainable designers and innovators spend time researching the materiality and properties of the biosphere (Figure 2).

5.4 | Aesthetics and sustainability in slow design

The innovation process is being joined by an aspiration for aesthetics and embodiment of these manual elements, as traditional craft is married with a new aesthetic sustainability and a fresh design identity. Slow DDI is a way to slow down the process and reflect on design practices, connecting the past with the future, and in this way, innovating the design materiality, its features and consequently its meaning.

Design in Vietnam has been driven by social need, with the aesthetics arriving later, as it is with many countries that have faced social development and political change. A Slow Designer, however, interprets this and creates a new meaning that brings both together. The challenges for slow designers are to translate and communicate the meaning to customers and to innovate a language that is intensely social. The value of design is reflected in the citizens and community, as the slow designers are committed to the preservation of tradition, combined with future innovation to encompass sustainability. Design in Vietnam is intensely social, iterative and experimental as designers rebuild, rediscover and introduce others to Vietnamese identity. Slow design creates a visceral connection to knowledge that is passed through generations and allows interpretation for innovative projects and for the future.

However, due to climate change, material resources are more and more difficult to obtain, and they need to be handled with extra care. For example, one of the designers used to receive 30 rolls of cloth for her designs, whereas in spring 2019 she received only five rolls. The decrease in production is due to the colder winter and drier summer; the hemp did not grow as much as in previous years. Furthermore, Sapa, the town where the community supplying the hemp was from, was aggressively transformed into a popular touristic destination, taking away land from the farmers and using the water that they normally used for the fields. In spring 2019, the highest temperature ever was registered, and there was a shortage of water. The government asked to stop cultivating the land without providing compensation for that, which created social and economic problems because the farmers did not have the means to survive. Slow designers are actively looking for solutions to add to their processes to face these new challenges.

Vietnamese designers who are powerful advocates of environment and identity work proudly with heritage and tradition, subverting technique and changing and combining the emotional content of the old craft with the new product created. This is a way for them to reduce the impact of production on climate change.

5.5 | Opportunities for slow designers

Being a relatively young state and emerging economy means Vietnam's contemporary design field is far from being well established and filled with opportunities for designers starting out. This poses a challenge, as well as an opportunity: processes like Slow DDI can be grass roots from conception to realization by bringing forward a new concept of design, based on the heritage of the past and on the use of sustainable resources.

Vietnam is a fast-growing country, but much of its growth happens in the city, leaving behind the rural areas, which are experiencing increased vulnerability common to many developing communities in which globalized products are manufactured. These are mostly populated by ethnic minorities, so the fast growth not only divides cities from more rural areas but also divides along ethnic lines. Ethnic minorities live in poverty, subsisting on agriculture and craft. In order to address this problem, slow designers are attempting to embrace slow movement philosophies. These movements are occurring at a time when people are becoming more aware of the impact of their choices on the environment and society, as well as realizing that cheapness and greater quantity is not always better in terms of quality. Furthermore, practitioners in the slow design movement have been working towards holism: the multiplicity of meanings and experiences that artefacts should convey through their sensorial qualities; durability, attention to the 'temporality' of artefacts and their use and experience; and distinctiveness, related to local and territorial resources promoted by slowness (Lupo, 2012, p. 46).

5.6 | Theorising The emerging concept of Slow Design-Driven Innovation

Our data on Vietnam suggest that slow designers are focusing on the change of meanings in products and services and adopt their meanings to the current environmental situation (Dell'Era, Altuna, & Verganti, 2018). Focusing on researching how to innovate the *meaning* of design that is future-oriented and built on the past offers a valuable managerial perspective on how sustainable products become meaningful. Because design is socio-technological (Grint & Woolgar, 1997), product-meaning is a link between the social aspects, specific languages, sets of signs, symbols and icons associated with the product (Verganti, 2008a, 2008b), thus indicating some of the reasons (besides usefulness, aesthetics and functionality) why a product is purchased at individual and social levels (Verganti, 2011). Meaning is situated and cognitively constructed in the relationships (Gasparin & Green, 2018), and in the accounts (Neyland, 2011), within a network of actors.

Slow designers are powerful advocates of environment and identity, and work proudly with heritage and tradition, subverting unsustainable techniques and changing the emotional content of the old crafts to complement the new products created. In order to theorize the slow design-driven approach, the role of designers and how they embed slow design into their practices, we have presented the Slow DDI process. Slow designers act as interpreters, in the sense that they propose innovative products and services by mobilizing local heritage and envisaging how to translate it into contemporary products that the customers will love. They then understand and feature the biodiversity of the place in the products, respecting and caring for it. They do this by creating fewer, long-lasting high-quality products that the customers will treasure for many years and can be recycled at the end of the process. The customer will value the products over the years because they can convey a story, which would have been narrated through storytelling by the designer. Figure 3 presents the concept of slow DDI and its place in the slow design process.

The slow design sphere that emerges from the data analysis reflects on deep issues, such as how to address climate emergency and what it means to go through internal transformation rooted in a distinct identity. Slow designers are young; their work is informed by tradition, is forward thinking and could further benefit from a broader understanding of its multilayered reality.

In Slow DDI, natural resources are used as new materials in the design process, which allows a more sustainable approach to innovation, to become more knowledgeable about the supply chain and take ethnical responsibility for it. Slow designers working with ethnic minorities in the rural areas are integrating their knowledge and expertise in the supply chain by cocreating the designs, empowering women through vocational programmes and through learning-by-doing. By doing so, they understand the meaning of traditional cultural heritage, how to translate it into innovative contemporary products, and engage customers in conversations, telling their story about the meaning of crafts and territorial traditions.

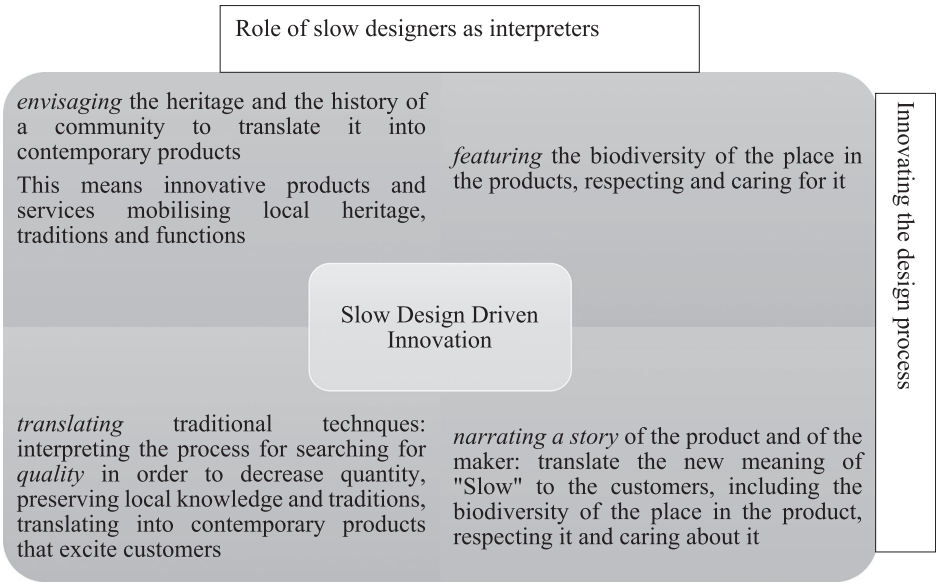

FIGURE 3 Four actions of slow design

In fact, Slow Designers invest a considerable amount of time in changing customers' behaviour so that they think about more sustainable consumption. These movements are occurring at a time when people are becoming more aware of the impact of their choices on the environment and society, as well as realizing that cheapness and more quantity is not always better in terms of quality.

Indeed, customers are becoming more aware that current social and political configurations are shaped by the interests of multinational corporations (Chatterjee, 2016), which are influencing global economic orientation and the growing integration of national economies (Frenkel, 2001). Globalization was accelerated by the denationalization of the regulations (Osborne, 2018), which made the world economy highly unstable and subjected to predatory practices (Negri et al., 2008) impacting all levels of economic and social activities.

6 | CONCLUSION

Neo-liberal economic approaches have been promoting the Western delocalization of productive activities as a win–win situation, with Western countries cutting their production costs and emerging companies being empowered though job creation and improvement of their economic situation. However, the situation has created extreme imbalance (Siegle, 2011), concentrating wealth in the hands of a minority of people who are exploiting the less well-off. This is particularly relevant in countries eligible to receive official development assistance (ODA), which are transitional economies (Gasparin et al., 2020), but still are absorbing the ethical and environmental costs of delocalizing the supply chain. It has affected mundane and daily purchases, leaning towards a performative logic of goods consumption based on advertising, desire, compulsion and standardization of tastes by offering the same products everywhere, and causing the disappearance of local cultures (Ritzer & Jurgenson, 2010). Globalized production has reduced access to local resources, endangered local species, and placed stress on the environment with increased use of pesticides and monocultures to increase the production rate (Debs, 2013). Promoting a more productive and homogeneous system has fragmented local cultural identities (Cutcher, 2014). The system has also created and accelerated the climate emergency.

To contrast the climate emergency and create alternatives to the Anthropocene, inspired by Slow Food, Slow DDI is emerging. This is not an isolated case, as other slow movements have arisen, such as slow gardening, slow goods, a slower pace in cities (Cittaslow), slow dating, slow travel (Honoré, 2005), slow science (Stengers, 2017) and slow research (Almond & Connolly, 2020; Berg & Seeber, 2016). These slow movements are cultural movements focusing on rhetorical action that avoids confrontation in favour of creating new relationships within a broader community united by a collective identity, a sense of belonging, a belief in shared ideals and a notion of heading in the same direction (Dumitru, Lema-Blanco, Kunze, & García-Mira, 2016). These movements focus on renewing the modes of production, promoting local diversities and working towards protection of local traditions that modernization has condemned (Stengers, 2015).

Slow movements propose an alternative approach to that of globalized corporations, whose concern is maximizing their returns in a hypercompetitive landscape through cutting costs and rapidly launching new products and ancillary services across the globe (Harvey & Griffith, 2007).

In this paper, we have identified a new approach to answer the climate emergency and 'business as usual' during this time of the Anthropocene. On the basis of the practices we have observed in the field, we have theorized through the lens of DDI. We have called the approach 'Slow Design-Driven Innovation'.

Previous research has focused on the emergence of design and innovation, how value is created and the role of the actors in the innovation and design processes (Gasparin & Green, 2018): the objects, for managers, in organizations and with designers. In this

study, conducted in Vietnam, one of the countries most affected by climate change, we propose an innovation model, Slow DDI, that takes into consideration Anthropocene issues and acknowledges a new typology of designer—Slow Designers. It recognizes the attention and discussion that needs to be put in place for our innovation ecosystem that impacts on our environment. Conceptually, we advanced the theory of DDI by bringing together the concepts from the Slow Food movement and DDI, coining the term 'Slow Design-Driven Innovation'.

The Slow DDI process consists of four actions: *envisaging* the heritage and history of a community in order to translate them into contemporary products; *featuring* the biodiversity of the place in the product; *transferring* traditional techniques into processes for creating long-lasting quality innovative products, and *narrating a story* about the products and their makers in order to capture the attention of the customers and encourage them to care about these stories and the products. Slow design-driven organizations invest in communicating to their customers the importance of the territory and heritage, and the importance of considering the environmental impact and reusing objects. Managerially, we outline a model of alternative responsible production which confronts and questions the practices of today's globalization. A slow approach to innovation that is intended to connect innovation to local sources and become ethical and sustainable, coupled with a new model of business, could be an alternative to the current ways of producing, which are unsustainable in the long term.

Slow Designers use only naturally sourced and organic materials to reduce the environmental impact, they engage customers in conversations about crafts and territorial traditions, narrating a story that enables them to care about the slow-designed products. We found that Vietnamese slow designers invest a considerable amount of time in engaging with their consumers to purchase more responsibly, explaining the role of the Earth System and biosphere in their creation process.

Slow DDI therefore emerges at the intersection between innovation management, design studies and the Anthropocene, in order to propose concrete business-oriented responses to the climate crises. However, it needs a new form of business model that will support sustainable growth and tackle climate emergency. Currently, organizations and entrepreneurs working with 'slow' principles are struggling, for three primary reasons: (1) a lack of a critical understanding of what constitutes slow innovation and how it differs from traditional innovation; (2) a lack of business models or 'slow business models' appropriate to capture current social, ecological and economic values; and (3) a lack of appropriate financial tools suitable for financing slow innovations, because the current tools aim to rapidly maximize shareholder profit, which restricts funding opportunities for slow organizations.

Future research should look into these issues and also the development of a 'slow economy'. Slow designers need to finance their activities, but with their modus operandi being different from established firms, they experience difficulties in accessing capital to finance their activities. Indeed, in a consumption-oriented society, economic growth implies a high level of production combined with short-term purposes.

The link between customers' excitement and product meaning has been demonstrated (Artusi & Bellini, 2020; Gasparin & Green, 2018; Verganti, 2016). Our case studies, however, suggest that customer excitement emerged from meaning association with heritage and the use of environmentally friendly raw material. In this context, current theory on DDI (Artusi & Bellini, 2020; Gasparin & Green, 2018; Verganti, 2016) is extended by arguing that meaning encompasses not only new experiences but the mobilization and association with tradition. In our examples, building on an organic use of heritage, as well as local history. The designers, recombining the past and the history with new visions, are able to produce radical innovations, as the new designs set a new vision that redefines the problems worth addressing and new value propositions. These observations should be considered further.

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ENDNOTE

[1] The ethnography was suspended in 2020 due to the Coronavirus emergency.

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