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# JOURNAL OF BUSINESS MODELS

## Business Models for Open Source Hardware Repositories

Joshua M. Pearce<sup>1</sup>

### Abstract

Free and open source hardware repositories provide massive public good, but funding their operation has proven tenuous with conventional business models. This study evaluates business models to foster that public good. Business models for online design repositories are reviewed and a new model is conceptualized to fund repository operations. The greatest added value an open hardware repository brings to the user-developer community is validation and vetting of the designs. A business model was proposed that uses revenue from the vetting process to fund validation studies and sustainable operations of the open hardware repository itself. As the return on investment of laterally-scaled open hardware that can leverage distributed manufacturing has the potential for creating enormous value, maintaining repositories for this hardware enables vast wealth generation for everyone. This is the first study specifically focused on ways to ensure economic sustainability of open hardware repositories.

### Introduction

Free and open source software (FOSS) is software that is both free software (users have the freedom to use, copy, study, and change the software in any way, as well as to sell it) and open-source (the source code is accessible). With the majority of large companies now contributing to open source software projects, it has become the dominant form of technical development in software engineering (LeClair, 2016). Free and open source hardware (FOSH) uses the same

sharing philosophy as FOSS (Powell, 2012). FOSH is hardware whose design is shared so that anyone can study, modify, distribute, make, and sell the design or hardware based on the design. FOSH provides the "source code" for physical hardware including the bill of materials (BOMs), schematics, computer aided designs (CAD), and other information such as detailed instructions needed to recreate a physical object (Gibb, 2014). As well established in FOSS development, FOSH has now demonstrated improved

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product innovation (Dosemagen, et al. 2017), which can be driven by company-community collaboration (Ezaji, et al., 2020). FOSH is growing rapidly, but is roughly 15 years behind FOSS in maturity (Pearce, 2018). At a societal level, as open source development for both FOSS and FOSH has been shown to increase innovation (Weber, 2004; Maxwell, 2006; Penin, 2011; Dosemagen, et al. 2017) and decrease costs (Riehle, 2007; Pearce, 2015; Dryden et al., 2017). For example, a recent review of hundreds of published scientific open hardware found that FOSH provides economic savings of 87% compared to equivalent or lesser proprietary tools that increased to 94% for those that used open source electronics and open source 3-D printing (Pearce, 2020). The rapid technical evolution of FOSH is already clear for both the electronics industry where many commercial firms sell FOSH (Ngo, 2019; Hannig & Teich, 2021), and the additive manufacturing industry where millions of free 3-D printable designs already exist (Wittbrodt et al., 2013).

The sheer volume of FOSH designs has become an issue. With millions of designs circulating in hundreds of databases and websites, finding high-quality vetted designs is challenging and clarifies the critical need for centralized trusted databases of vetted FOSH. When vetted designs are made possible for distributed manufacturing from local resources real value can be generated (Pearce, 2015). The efficacy of this approach on a limited scale was witnessed as a solution to the COVID-19 personal protective equipment (PPE) shortage in the U.S. that was solved in part by an agreement between the NIH, the FDA and VA. The NIH leveraged their existing 3-D Print Exchange, a database of FOSH that can be produced with additive manufacturing, to accelerate the distributed manufacturing of 3-D printed protective gear for COVID-19 response. Users share and find designs that are either community- or clinically-relevant after having been vetted by the FDA or VA. This approach supported by the maker community was readily-compatible with distributed digital manufacturing. Open Source Medical Supplies has documented how more than 48 million FOSH medical supplies were produced by the community during the 2020 COVID-19 supply chain crisis. Similarly, for any central repository for a specific kind of FOSH to

be most effective, it needs to be housed in a trusted central authority and that authority comes from vetting using openly accessible standards. The costs to vet or validate a FOSH design can vary widely. For example, some FOSH repositories that focus primarily on toys and games (e.g. 3-D printing mini-figures for board games) can rely on relatively low revenue business models and basically only cover website maintenance and hosting costs (that do increase with download volume). The standard method to vet a FOSH, however, would be to recreate the design physically from the supplied documentation and then test the device to ensure that it met the specifications of the design. So, for example, to vet an open source multichannel pipette a tester would fabricate the device and then test it for ISO 8655 compliance (Chinchane, et al., 2022). This would have a modest cost associated with the vetting. Repository owners focused on other FOSH such as those in the regulated spaces need higher revenues (e.g. to fund FDA approval for class 3 medical devices can cost millions of dollars per device). So how can a FOSH database, especially for those focusing on high-value regulated products remain economically sustainable? This article reviews existing business models used by FOSH databases and presents a novel business model that focuses specifically on enabling funding of such potentially high-cost and high-value validation work.

## Approach

As a company's long-term competitive success depends on its ability to create an innovative business model (Gassmann, et al, 2014), this analysis draws upon previous research on business model innovation, which focuses on the concept of business model configurations (Taran et al., 2016; Remane, et al., 2017). All of the business model patterns in this area fall under the digitization pattern, where a conventional physical product is offered as a digital good (Gassmann, et al, 2014), but here the method of extracting revenue for validation will be examined. In addition, the specific twist on all of the following business models is that they are supported by the core open source alliance business model, where the core content is developed by the

community (Tapscott, Lowy & Ticoll, 2000). First the current business models used to maintain FOSH databases will be reviewed and an example of each discussed and mapped to existing business model configurations. Then a new model that is able to sustainably fund the vetting process and a FOSH repository will be proposed and analyzed.

### **Model 1: Charity**

There have been business models used on the internet (Doligalski, 2018) that provide free content via a charity like Wikimedia (Rappa, 2001). The *Journal of Business Models* itself functions in part this way providing free information on business models (Nielsen, Haslam & Turcan, 2013). A good example model in this space is the Appropedia Foundation, which is a 501c3 charity that runs Appropedia, which is the largest wiki-based website that contains FOSH solutions to poverty, environmental degradation and international development. The website is organized into portals that are groups of articles arranged by topics that focus around appropriate technology for sustainable development. Topics include construction, energy, food and agriculture, health, and water. The open source appropriate technologies (OSAT) housed on Appropedia directly address the UN's sustainable development goals (SDGs) and are both contributed to and used all over the world. To maintain the website the Appropedia Foundation solicits donations and competes for grants. It generally does not seek funds for vetting technologies, but enables a volunteer mechanism where users (e.g. university labs) can alter the status of a FOSH design indicating that it has been replicated.

### **Model 2: Goodwill for parent company**

Autodesk, Inc. is a multi-billion dollar per year multinational corporation that develops software for a wide range of industries. To buy business goodwill in the burgeoning maker community, Autodesk bought and maintains Instructables, a website and platform where users can share their ideas and collaborate with a variety of do-it-yourself (DIY) and FOSH projects. Instructables has a three-part strategy: 1) make it easy to learn how to make anything, one step at a time, 2) allows users to share as everyone has skills to share; 3) making things makes people happy.

Instructables also has a formal "be nice" policy where they ask that commenters be positive and constructive. Overall, this approach has worked; Instructables is a vibrant community of curious makers, innovators, teachers, and life-long learners who love to share what they make. This relationship building is what makes it successful and is observed in other successful business models (Hollensen, Eskerod, & Ulrich, 2020). They also have prizes and contests to encourage people to provide content and use cartoon robots to make the site seem fun and approachable. Autodesk earned business goodwill in the maker community and encourages the use of its products. This business model is primarily a brand integrated content business model (Rappa, 2001), where the manufacturer of other products creates content for the sole basis of product placement. Another way of looking at this business model is an extreme version of the add on model, where a business offers a basic product at a competitive price and charges for several extras (Gassmann et al., 2014). In this case the basic product is offered free and the extras are entirely different products purchased in part because of increased goodwill. This model, however, does not provide funding for validation of any type other than users posting remakes and allowing for comments.

### **Model 3: Advertising**

Advertising based business models are well known and described in the literature (Hanson, 2000; Rappa, 2001) and in this case it is following a free content model (Osterwalder & Pigneur, 2010). Running advertising on the OS database website is a potential source of revenue as DXFProjects does on their website that houses FOSH designs that can be manufactured with a CNC mill or a CNC laser cutter. They also are supported by a link to premium designs sold on Etsy. This funding model only covers the website operation and advertising revenue does not fund testing of any kind.

### **Model 4: Premium memberships**

Membership based business models have proven successful (Tuff & Wunker, 2010). This approach to generating revenue to maintain an open source database would be to offer premium memberships that

would provide users access to Google Analytics data and other potentially valuable information. An example of this approach is Academia, which provides a database of open access preprints of academic articles. Academics can pay to have access to this analytical information, but also to spread their work more widely to improve their academic reputation. This reputation-based value creation may be of interest to some FOSH developers as employers in the open source development space often look to databases as portfolios of potential employees.

### Model 5: Host some paid-for content

Following on the advertising approach a FOSH repository can also generate revenue to host paid-for content designs. This business model is normally considered to be an online broker like Air BNB (Strauss & Frost, 2014). A good example in this space would be MyMiniFactory, which is a 3-D printing design repository that contains both FOSH designs and designs that must be purchased. The profits from the latter can fund those of the former. In addition, because the cost to fabricate most of the designs is so low, MyMiniFactory does provide a basic vetting of "is it printable" by only allow proven printed designs on their site. Most designs are tested for 3-D printing by users, but they also do some printing.

### Model 6: Service for customers

Business models associated with providing services on top of open source software projects are well known (Shahrivar, et al., 2018) and are even starting to form for open hardware (e.g. distributed I/O as a service (Pontarolli, et al., 2022)). Service, however, can also be done for customers purchasing related products that add value. As an example, Prusa Research is a large open source 3-D printer manufacturer, which utilizes several established open hardware business models (Pearce, 2017) to be one of the most successful manufacturers in the desktop space. Prusa Research maintains Printables, a repository of FOSH that can be manufactured on their 3-D printers. This can be viewed as a shared infrastructure among competitors business model (Weill & Vitale, 2001), but Printables provides easily accessible service for their customers that directly couples to their products. Printables has a long list of features (largely based on user feedback), that include community contests, user groups,

events, rewards, and a selection of social media tools. Anyone can use the database and the FOSH even if they do not use a Prusa printer. Each design uploaded to Printables, however, de facto increases the value of the Prusa's main product as it can be used to create value for their customers. Similar to MyMiniFactory, which is in the same technical space, there is no funding for validation testing.

### A new FOSH business model is needed

The costs to validate a design can vary widely depending on the technology, from simple tests that could be completed in hundreds of university laboratories for little or no cost (e.g. mechanical properties testing), to those that are quite substantial (e.g. clinical trials of medical implants). Validation could come from external partner organizations whenever possible to minimize the vetting costs, but another approach would be for the open hardware database owner to charge for validation of open source designs. To fund these tests a new business model focused specifically on leveraging validation payments to provide for sustainable operation of a FOSH repository is presented here.

### Key Insights

The value of having a design validated can be substantially more than even the highest validation costs, particularly if it is open source and the values are summed globally. How this new business model takes advantage of this value landscape is illustrated in Figure 1.

In Figure 1, the green arrows represent a transfer of wealth and the black arrows represent a transfer of FOSH designs. Red open hardware symbols are untested designs and green-rimmed open hardware symbols have been vetted using an openly accessible standard. As can be seen in Figure 1, first a funder invests in a developer to make open hardware. This could be an open hardware company paying an employee, a philanthropist funding an NPO, a group of Kickstarter backers, or user-developers making a design they want. The developer uploads the design to the FOSH database. The FOSH design has value, but it may be relatively low because it has not yet

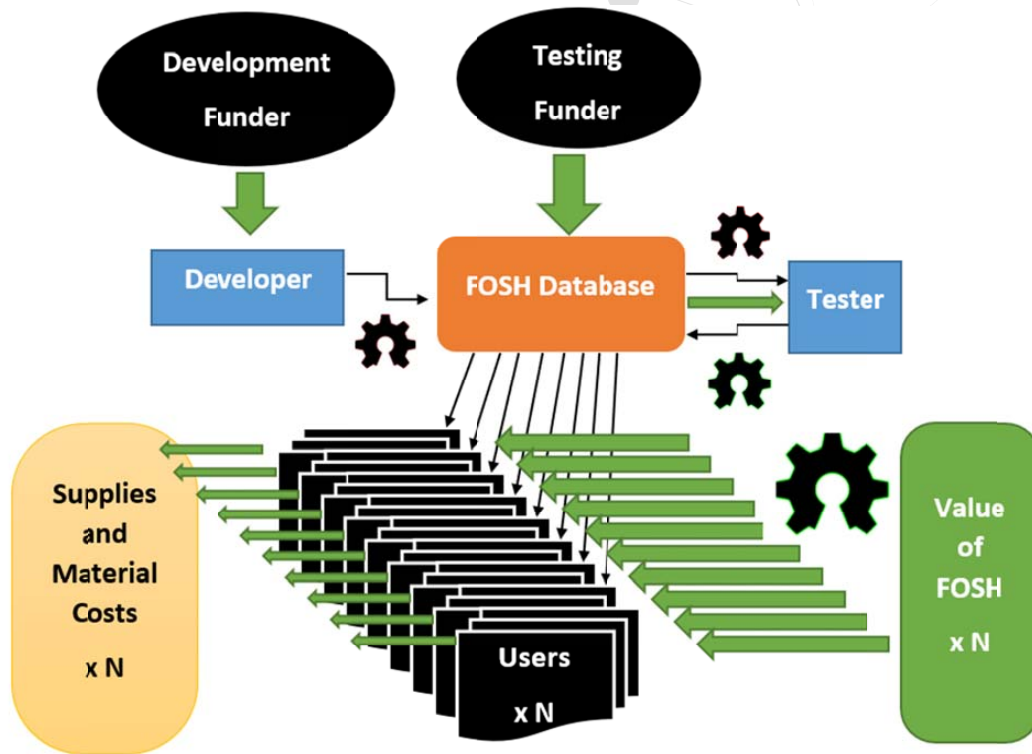


Figure 1. Proposed FOSH database business model.

been vetted (red rimmed open hardware logo). Another funder (or the same one that financed the development) anticipates additional value if the design is vetted and pays the owner of the FOSH database to have it tested. The FOSH database operator pays the tester to test it and additionally uses some of the funds to maintain the database. After testing, the potential value of the open hardware increases substantially (green rimmed open hardware logo). Users can download the FOSH design for free. Each user, however, must make a small investment (e.g. for materials, supplies and their own time), which is shown as small green arrows, and each user can expect to get about nine times their investment out by fabricating the FOSH (noted by the large green arrow of value going to the users) (Peteresen, 2017). This micro investment and ROI can be multiplied by the number of users,  $N$ , (Pearce, 2015), which can number in the millions. The ROI for an individual user is good, but the aggregate ROI for the investment of both initial funders (development and testing) can be astronomical in terms of public good and wealth generation (Pearce, 2016). For example, with millions

desktop 3-D printers being purchased annually, and the proliferation of open source digital designs for 3-D printed products, a study was conducted that analyzed the wealth generated by the top 100 most popular FOSH designs posted on the YouMagine repository (Pearce & Qian, 2022). If distributed recycling and additive manufacturing is used the means of percentage savings using commercial filament, commercial pellets, recycled commercial pellets, and self-recycled consumer plastics are 82%, 94%, 97% and 98%, respectively. If scaled to the entire U.S. from household plastic waste, the potential for wealth generation is over \$359 billion/year for offset filament purchases or over \$7 trillion/year for products (Pearce & Qian, 2022). Such scalability is important for business models in general (Lund & Nielsen, 2018) and although all of the wealth does not accrue to the primary business, value is added. The highest value products are the ones that would involve the most testing (e.g. medical equipment). The potential for wealth generation is clearly substantial, however, who will pay for the testing to extract the full value from FOSH designs?



There are several entities that would pay for such a service:

- Firms using any of established open source business models (Pearce, 2017; Gambardella, & von Hippel, 2019). These companies would want their technologies listed to sell more products by being able to claim validation for function. Many FOSH businesses already expend capital to take the time to have their products certified by the Open Source Hardware Association, which determines appropriate open source license and full FOSH documentation of the design.
- Similarly, companies with some social mission may develop technologies that are appropriate for the COSD and want them included (e.g. Google X – now the X Company).
- Nonprofit organizations wanting their technical developments to gain scale to support their mission directly and for notoriety that can benefit them by increasing donations. For example, Public Labs may want to have their PaperCraft Spectrometer validated so that it can be used in citizen science campaigns to map local pollution for a lawsuit against a polluter. This class of potential clients would also include universities that may view FOSH validation tests to being synonymous with article processing fees for academic articles and may similarly be willing to invest to scale their project and prestige within their specific technical community (Gibb, 2014).
- Nations or groups of nations (e.g. the UN) interested in solving problems for their citizens. For example, India published a list of products it needed during the pandemic and if they could be had with distributed manufacturing may have paid for the most critical designs to be validated. This is particularly important as FOSH not only can directly fulfil needs but it also can be used for capacity building for low-middle income countries (LMICs) (Bezuidenhout, et al., 2022).
- Communities of FOSH/FOSS developers ready to take their innovations global (e.g. if a particular technology appears to be gaining traction yet it is not clear it is safe, reliable, etc.).

For example, Open Source Ecology members may want to have their open source Seed Eco-Home tested and validated to expand the market to different areas with different building codes to be able to sell access to their training sessions and builds.

- Local communities or those with common interests perhaps through aggregating services and crowdfunding (Gassmann et al., 2014) like Kickstarter, GoFundMe, Patreon, Wefunder, Indiegogo, or Chuffed that want to see specific technologies scale for the betterment of the world and themselves.
- Philanthropists and philanthropic organizations that are interested in maximizing the social return on their philanthropic investments. For example, effective altruists follow a philosophy and have now developed a community focused on maximizing the good they can do through their careers, projects, and donations. Effective altruism is complimented by open source thinking (Bhandari, 2022). The ROIs for open hardware are formidable and if there are FOSH that target particular social causes they would appear to be a good match for funding both the development and testing. This is particularly true for scientific hardware, and offers the potential to transition all of science towards more plural and democratic sociotechnical systems (Arancio, 2019; Arancio et al., 2022) as well as appropriate technology for developing countries and resource constrained communities (Omer et al., 2022).

Thus, one of the primary functions of the FOSH database-related business model would be determining appropriate validation tests for FOSH, developing open standards for those tests, and then either performing or arranging for the outsourcing of such tests. There are entities that are following non-open source analogues of this business model already. For example, the Electrical Safety Authority is a self-funded non-profit association that offers electrical product safety, contractor licensing and electrical inspection for fees. Their revenue comes from their inspections both of hardware inhouse and onsite testing. FOSH database owners would use the

leverage of the higher value of validated FOSH to target customers in the seven preceding categories to pay for validation and repository maintenance.

## Discussion and Conclusions

The largest expense for running a high-value FOSH repository is the cost of validating FOSH, which can involve capital-intensive scientific equipment and costly expertise. To overcome this challenge, while at the same time building a self-sustaining organization to maintain the repository, a partnership model is recommended where 1) FOSH companies, 2) social-mission companies, 3) nonprofit organizations building FOSH, 4) countries or groups of nations, 5) communities of FOSH developers, 6) local communities, or 7) philanthropists or philanthropic organizations. These seven potential customer classes would provide either in-kind testing, or fund the testing of specific FOSH to advance their own interests. Thus, one of the primary functions of the FOSH repository-related business model would be determining appropriate validation tests for FOSH, developing open standards for those tests, and then either performing or arranging for the outsourcing of such tests for a fee a part of which would sustainably fund the repository. As the return on investment of laterally-scaled FOSH that can leverage distributed recycling and manufacturing has the potential for creating enormous value, maintaining repositories for this hardware enables vast wealth generation for everyone and could have a profound global social benefit.

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# JOURNAL OF BUSINESS MODELS

## Greenwashing: A Business Model Perspective

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### Abstract

Is greenwashing a business model? The paper is a conceptual effort to advance the discussions of greenwashing through the lenses of business model thinking. We argue that the business model literature can offer a useful supplement to existing conceptualisations of greenwashing by linking talk-action disconnects to the underlying business architecture. Greenwashing characterizes organisations that deliberately disconnect the promises to the stakeholders (i.e. value proposition) from the other elements of the business models. Moreover, we contend that the concept of greenwashing can contribute to the business model literature by drawing attention to organisations with imperfect business architectures, which fail to deliver on the value propositions communicated to their stakeholders. This study paves way for future research into how flawed business architectures cause greenwashing and how business models can be transformed to improve organisations' relationships with their stakeholders

Keywords: Greenwashing, business models, sustainability, decoupling, organisational hypocrisy, corporate social responsibility

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## Introduction

The integration of social and environmental issues within the organisation and in its relationship with external stakeholders is often regarded as a key goal of corporate sustainability (Hengst *et al.*, 2020). However, it is widely acknowledged that many companies pay only lip service to the sustainability agenda. Inconsistency between corporate 'talk' and 'action' on sustainability has led to accusations of greenwashing, which can be broadly defined as: '(...) communication that misleads people into adopting overly positive beliefs about an organization's environmental performance' (Lyon and Montgomery, 2015, p. 226). Greenwashing is by no means marginal phenomenon (Kim and Lyon, 2015). On the contrary, the literature has reported product greenwashing of more than 90 percent (Delmas and Burbano, 2011; Lyon and Montgomery, 2015). Recently, the European Commission (EC) stated that 42% of green claims online were exaggerated, deceptive, or false (EC, 2021). Google's global survey of over 1,500 executives also reached the following conclusion: 'Over half (58%) of executives say their organization is guilty of greenwashing – conveying a false impression or giving misleading information that says a company's products or practices are more environmentally friendly than they actually are. This is especially true in North America, where 72% of respondents believe that their organization has overstated its sustainability efforts' (Google, 2022, p. 5). Therefore, greenwashing frequently appears to be 'business as usual', rather than an exceptional case on the outskirts of the business community.

The purpose of this study is to analyse greenwashing through the lenses of business model thinking. Extant literature on greenwashing (see e.g. de Freitas Netto *et al.*, 2020; Siano *et al.*, 2017; Yang *et al.*, 2020) has made significant progress in categorising different types of greenwashing 'talk', but has paid less attention to the origin of the organisational 'action' to which the talk refers (for example, supply chain relations, manufacturing processes, distribution, etc.). Existing greenwashing taxonomies can benefit from a better understanding of the business areas that are the source of misleading environmental communication. In this regard, business model literature has the potential to enrich the greenwashing

debate by providing a framework for the underlying business architecture that enables value creation, value delivery, and value capture (Lüdeke-Freund *et al.*, 2020; Osterwalder and Pigneur, 2010; Teece, 2010). Greenwashing literature, in turn, can contribute to business model thinking by drawing attention to the plethora of organisations with inconsistent, unbalanced, and broken business models. Ultimately, greenwashing can be regarded as an indicator of organisations that fail to align their communicated value proposition with their underlying transformation system and stakeholder relationships. Furthermore, greenwashing emphasises the lack of transparency that frequently exists between different business model components. Internal and external stakeholders often have incomplete information about the entire business model, making it easier for greenwashers to make false claims about the company's social and environmental performance.

The remainder of this paper is structured as follows: The next section provides a general introduction to greenwashing, its core characteristics, and relationship with other theoretical concepts addressing talk-action disconnects, such as decoupling (Crilly *et al.*, 2016) and corporate hypocrisy (Higgins *et al.*, 2020). The conceptual introduction is then used as a springboard to propose a new categorisation of greenwashing from a business model perspective. The fashion industry is used as a brief case example to demonstrate the different components of greenwashing from a business model perspective. The final section summarises the primary findings of the study and suggests future directions for greenwashing research.

## Greenwashing and Related Concepts

Extant literature is divided on the definition of greenwashing (Kassinis and Panayiotou, 2018; Seele and Gatti, 2017; Zharfpeykan, 2021). In general, greenwashing can be defined as the act of misleading people into holding favourable opinions about an organisation's or its offerings' environmental performance (Delmas and Burbano, 2011; Lyon and Montgomery, 2015). Greenwashing takes many shapes and forms, ranging from the selective use of vague sustainability claims to outright lies

about a product's or an organisation's sustainability performance (Gacek, 2020; Lyon and Montgomery, 2015; Siano *et al.*, 2017). Greenwashing is not an unintentional error, but rather a deliberate attempt to mislead stakeholders. The Volkswagen scandal, in which the manufacturer manipulated the emission data of their cars, is a well-known example (Aurand *et al.*, 2018; Lane, 2016; Siano *et al.*, 2017).

Over the years, more specific types of greenwashing have emerged, such as CSR-washing (Pope and Wæraas, 2016), blue washing (misuse of United Nations Global Compact; Berliner and Prakash, 2015), and SDG washing (misuse of SDGs; Heras-Saizarbitoria *et al.*, 2022). Furthermore, overlapping concepts like window-dressing and smoke-screening are sometimes used as synonyms for greenwashing to describe selective disclosure of favourable environmental information that fails to provide an accurate account of a product's or company's actual environmental performance (Pedersen, 2006). Last, scholars have coined terms to describe the antidote to greenwashing, which occurs when a company intentionally under-communicates its environmental practises. For instance, the concept of brownwashing implies concealing the cost of sustainability activities through excessive modesty (Kim and Lyon, 2015). Greenhushing (Font *et al.*, 2017) and strategic silence (Carlos and Lewis, 2018) are two other terms used to describe companies that underreport rather than overreport their environmental performance.

Greenwashing crosses a variety of academic disciplines (Lyon and Montgomery, 2015). Theoretically, several other concepts also address the gap between organisational talk and actual behaviour. Several previous studies have examined *decoupling*, which was first used to describe how organisations protected their core operations from external expectations by symbolically adopting 'inefficient' policies and structures (Meyer and Rowan, 1977). In this context, decoupling refers to a disconnect between policy and implementation, which allows the organisation to continue daily operations while meeting a plethora of external expectations (Bromley and Powell, 2012; Hengst *et al.*, 2020). Decoupling has also been used in the study of sustainability and greenwashing, for example, when oil companies

divert attention away from crises and environmentally harmful business activities (Bromley and Powell, 2012; Kassinis and Panayiotou, 2018). Scholars have also discussed means-ends decoupling, which occurs when there is an element of consistency between what is said and what is done, but the latter has little to do with the organisation's core goals and processes (Bromley and Powell, 2012). Fast fashion companies, for example, organise means-ends decoupling by compartmentalising their circular economy activities from their core business practises (Stål and Corvellec, 2021). However, decoupling can only be described as greenwashing when an organisation actively tries to mislead stakeholders about its sustainability practises to improve reputation, attract resources, or hide controversial activities (Crilly *et al.*, 2016). Decoupling can also be a result of situations in which the relationships between talk and actual behaviour is complex, ambiguous, and uncertain, and it is unclear what actions will allow the company to deliver on its promises (*ibid.*). In the words of Hironaka and Schofer (2002, p. 215):

*'In certain cases, decoupling may be the product of strategic action. However, it may also reflect altruistic or norms-based action, or even incompetence, accident or chance (...). Whether or not strategic action is involved is an empirical question, not something that should be presumed.'*

Organisational *hypocrisy* is another stream of literature addressing the talk-action disconnect (Brunsson, 1993, 2002). Extant literature on hypocrisy assumes that talk-action consistency is difficult to achieve, for example, due to a lack of knowledge, resources, time, and feasibility (Brunsson, 1993). Organisations are confronted with multiple, and not always consistent, stakeholder demands, necessitating the organisation's serving of various interests through various types of talks and actions (Christensen *et al.*, 2020). Furthermore, talkers and doers may differ in organisations, resulting in inconsistency in what is said and done. In the words of Brunsson (1993, p. 496): '(...) people who are free to express ideas without having to take action can often afford to defend views that are more moral, beautiful or true, and less feasible, than the view that the actors have to be guided by'. While the term hypocrisy is commonly



associated with a lack of moral integrity, scholars content that some inconsistency between talk and action is unavoidable and a normal organisational practise (Christensen *et al.*, 2020; Higgins *et al.*, 2020). In some cases, hypocrisy may even create opportunities for change that would not have been possible otherwise (Cho *et al.*, 2015). In summary, hypocrisy and greenwashing overlap only when discrepancies between talk and action are rooted in deceptive attempts to mislead stakeholders about the organisation's sustainability performance.

There is also a small but growing stream of literature on organisational *bullshit*, which can be defined as corporate rhetoric that creates a positive image of someone of something regardless of the actual organisational reality. From being mostly associated with spoken language, the concept of 'bullshit' has recently been subjected to scholarly inquiry in management and organisation literature (Morgan, 2010; Spicer, 2013). A bullshitting company is distinguished by its general disregard for the truth and organisational reality (Frankfurt, 2005; Morgan, 2010; Spicer, 2013). In the words of Spicer (p. 657): *(...) a good portion of talk and text in organisations seems to be fundamentally 'empty', bearing little relationship with the reality of what goes on in the organisation'*. Bullshit can thus be defined as talk and text that is unconcerned with truth (Spicer, 2013, p. 664). However, not all organisational bullshit is a deliberate attempt to mislead its stakeholders. For instance, corporate jargons like 'disruption', 'resilience', and 'agility' are not always about plotting against others or oneself. While bullshit certainly benefits the bullshitter, some 'empty talk' and 'hot air' in organisations can also be socially acceptable codes that reflect membership in a community regardless of its proximity to the truth. Unlike a greenwashing organisation, which intentionally misleads stakeholders about its environmental practises, a bullshitting organisation is simply unconcerned about the truth and organisational reality (Morgan, 2010, p. 1577). According to Frankfurt (2005, p. 13):

*The fact about himself that the bullshitter hides (...) is that the truth-values of his statements are of no central interest to him; what we are not*

*to understand is that his intention is neither to report the truth nor to conceal it. This does not mean that his speech is anarchically impulsive, but that the motive guiding and controlling it is unconcerned with how the things about which he speaks truly are.'*

In summary, a number of terms in the management and organisation literature address gaps between an organisation's communication and its actual practises. Greenwashing differs from the concepts described above in that it focuses exclusively on environmental issues and emphasises deliberate efforts to mislead customers or other stakeholders. However, as stated by Seele and Gatti (2017), greenwashing cannot be fully understood unless the individuals or groups accusing the organisation of greenwashing are taken into account (activists, media, consumer agencies, and so on). Just as one organisation may have an incentive to greenwash, another organisation may have an incentive to accuse others of greenwashing, for example, by blaming them for not doing enough or for failing to 'walk the talk'. Therefore, a greenwashing analysis must consider both the accused and the accuser.

## A Business Model Perspective on Greenwashing

Business model thinking offers an interesting perspective to understand greenwashing and talk-action gaps more broadly. As previously stated, although existing greenwashing taxonomies provide a detailed overview of different types of misleading environmental communication, they rarely address the connection between the communication and the underlying business characteristics (e.g. manufacturing activities, input materials, or supplier relationships). In this regard, the various frameworks proposed by extant literature for conventional and sustainable business models can be used to broaden the general understanding of greenwashing (Johnson *et al.*, 2016; Lüdeke-Freund, 2009; Osterwalder and Pigneur, 2010). These frameworks share the goal of outlining the fundamental building blocks required for creating, delivering, and capturing

value. However, while the literature on conventional business models focuses on the company and its customer relationships, the literature on sustainable business models adopts a broader and more holistic approach, emphasising economic, social, and environmental value as well as a broader range of stakeholder relationships (Freudenreich et al., 2020; Pedersen et al., 2018). According to Lüdeke-Freund et al. (2018, p. 147):

*'A sustainable business model is about creating significantly increased positive effects and/or significantly reduced negative effects for the natural environment and society through changes in the way a company and its network create, deliver, and capture value.'*

The inclusion of social and environmental concerns into business model thinking has led to the expansion and redesign of existing business model typologies, such as the triple layered business model (Joyce and Paquin, 2016), beyond-profit business models (Osterwalder and Pigneur, 2010), and the sustainable business model canvas (Bocken et al., 2018). Acknowledging the differences between these frameworks, we focus on five common building blocks: the value proposition, the customer interface, the business transformation system, the finance and accounting system, and the non-market stakeholder environment (Lüdeke-Freund, 2009; Osterwalder and Pigneur, 2010). These five building blocks resemble the core structural aspects of a business model as identified by extant literature (e.g. Morris et al., 2005; Peric et al., 2017) and allow for the inclusion of social and environmental dimensions.

*Value proposition* is at the heart of any business model, describing how a company's business activities generate a set of benefits for customers and other stakeholders (Lüdeke-Freund et al., 2019; Osterwalder and Pigneur, 2010, p. 22). In this regard, companies can engage in greenwashing by deliberately creating a misalignment between the communicated promises and the realised benefits. In simple terms, the value proposition does

not correspond with the underlying business realities. *Customer interface* is concerned with the relationships that companies form with their customer segments. Companies may resort to greenwashing by attracting environmentally conscious customer segments through misleading marketing. The *business transformation system* includes the infrastructure that allows an organisation to transform inputs into outputs. Key resources, core activities, and strategic partnerships are the critical components of the business transformation system (Osterwalder and Pigneur, 2010). The economic, social, and environmental impacts of a business model are assessed by an organisation's *finance and accounting system*. The impacts include not only the costs and revenues, but also the intended and unintended consequences for stakeholders, society, and the environment. Organisations can use this business model block engage in greenwashing by publishing sustainability reports that conceal significant environmental impacts in the upstream supply chain. Finally, the *non-market stakeholder environment* encompasses all relationships that an organisation maintains with stakeholders other than those directly involved in the core business activities. Non-market stakeholders include regulatory authorities, labour market organisations, community groups, and non-governmental organisations. Companies may engage in greenwashing by exaggerating their participation in sustainability initiatives (e.g. certifications, labels, and multi-stakeholder initiatives) that require minimal commitment or cover only a fraction of business activities. Figure 1 depicts how greenwashing can manifest itself in various components of a business model. A company, for example, can make deceptive environmental measurements of its supply chain activities to meet specific standard criteria, which can then be used as input in misleading marketing activities and fraudulent sustainability reports. Furthermore, a business model is made up of multiple actors who can collaborate in greenwashing activities. For example, companies can collaborate with business partners to develop low-level environmental standards designed to mislead customers and the general public.

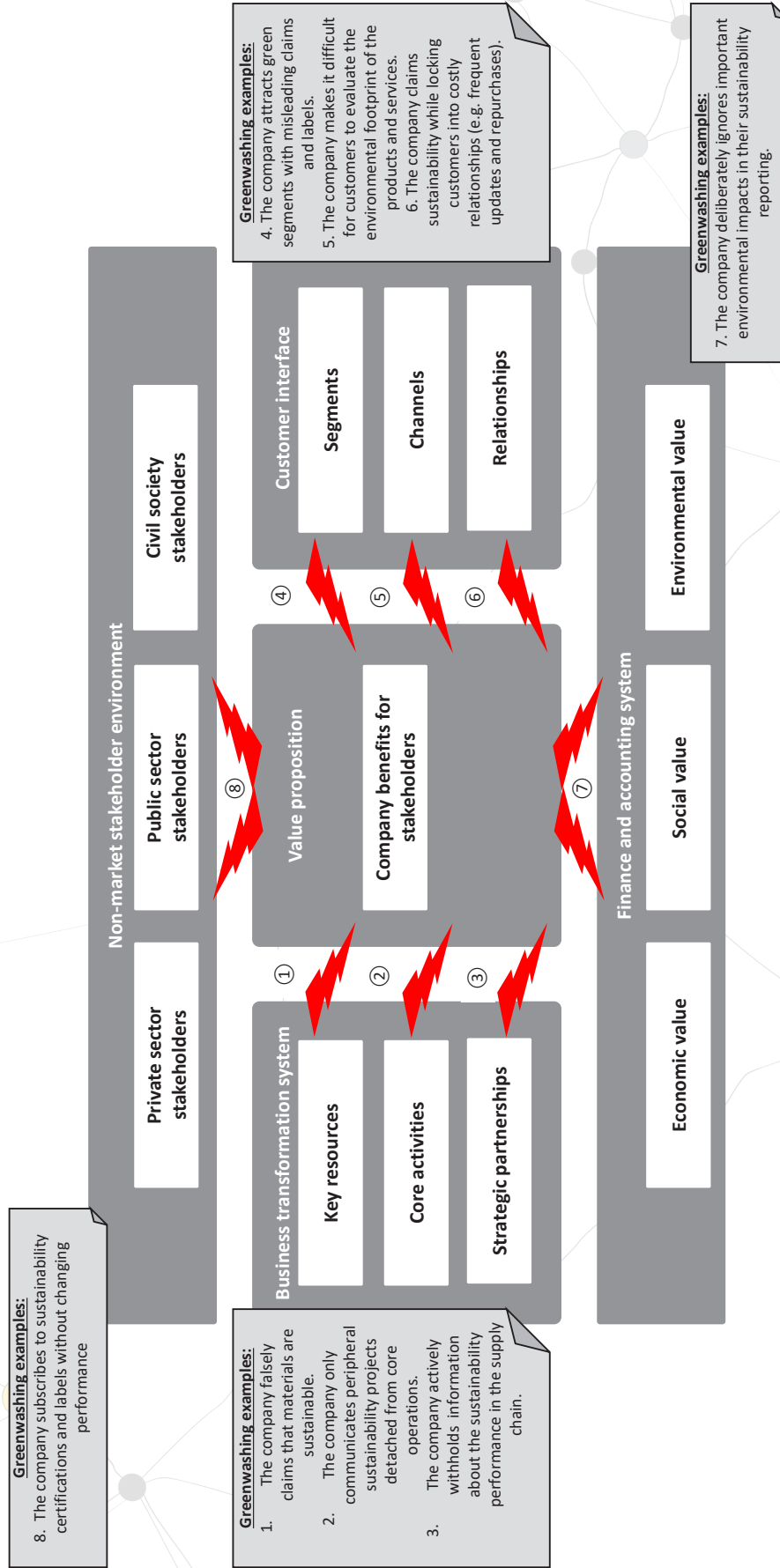


Figure 1: Greenwashing from a business model perspective.

### Case example: Greenwashing in the fashion industry

The fashion industry is a high-profile, consumer goods sector with a significant social and environmental footprint (Pedersen and Andersen, 2015; Pedersen *et al.*, 2018). The fashion industry has engaged in a wide range of social and environmental initiatives over the years, including experiments with new materials, development of new take-back systems, and testing of new fashion rental models (Arrigo, 2022; Hvass and Pedersen, 2019). Despite these efforts, non-governmental organisations, journalists, public agencies and community groups continue to accuse fashion brands of greenwashing.

In terms of the *value proposition*, the concept of sustainable fashion has been rejected by some stakeholders as an oxymoron or a contradiction. Specifically, the fast fashion business model has been described as incompatible with the concept of sustainability. Therefore, Greenpeace Germany (among others) calls for the fashion industry to 'slow the flow', contending that fashion brands are 'hijacking circularity for greenwashing' and stating that, 'small pilot projects and fancy circular "token" products, used mainly for marketing purposes or even greenwashing, are not enough and will not make a difference' (Greenpeace Germany, 2021, p. 24-25).

In terms of the *business transformation system*, fashion brands have often been criticised for the lack of transparency regarding their supply chain and misleading claims about the sustainability of their products. For instance, a company like Canada Goose has been under attack for deceiving consumers about their fur and trapping methods (Burns, 2012). Furthermore, due to a disconnect between its sustainability commitments and core business activities, the Chinese online fast fashion retailer SHEIN has been accused of social offsetting (Karaosman and Marshall, 2022).

In terms of *customer interface*, fashion brands have frequently been accused of making misleading sustainability claims to consumers. For example, the Norwegian Consumer Agency (NCA) charged H&M with misleading marketing of their 'conscious collection' (NRK, 2019). Another company being accused of greenwashing is Zalando, an online fashion platform that has been criticised for using sustainability labels (ASHIFT, 2021).

In terms of the *finance and accounting system*, fashion brands' reports can be opaque and only disclose partial information. For instance, a fashion brand may employ questionable methods to assess the environmental impact of their operations. For example, when the NCA banned the use of Higg Index 'sustainability profiles' in consumer marketing, the question of how to account for sustainability was brought to the forefront (Shendrunk, 2022).

In terms of *non-market stakeholder environment*, fashion brands may oversell certifications and partnerships with public and private partners, despite doing little to ensure sustainability in their business activities. For instance, the Changing Markets Foundation (CMF) examined 10 common certification schemes and concluded: 'As the fashion industry is one of the least regulated sectors in the world, these schemes partially exist as a genuine attempt to move towards sustainability in the absence of environmental legislation. But they also enable the proliferation of "greenwashing" on a remarkable scale.' (CMF, 2022, p. 9).

Greenwashing, from a business model perspective, is a deliberate misalignment between the communicated value proposition and the underlying building blocks of the business model. Greenwashing organisations challenge the assumptions about logic, consistency, and coherence that frequently underpin business model thinking. Ideal business models portray companies as having a coherent logic and a reasonable fit between their various building blocks. Attempts to formulate business model archetypes, typologies, and configurations become more difficult when an organisation's business model is imperfect, unbalanced, and broken. A business model that assumes consistency between individual building blocks, however, may fail to reflect the actual complexity and ambiguity that characterise real-life organisations. As discussed earlier, greenwashing appears to be the norm rather than the exception. Extant literature on greenwashing, decoupling, hypocrisy, and organisational bullshit consider companies as less integrated and more fragmented than business model scholars assume. More research into imperfect business models with inconsistency between the various business model components could benefit the business model literature in the future.

The core elements of greenwashing also provide critical insights into business models in practise. In a greenwashing company, decision-makers acknowledge the importance of social and environmental issues and how they benefit stakeholders. Otherwise, they would have no reason to exaggerate the company's social and environmental performance. The act of greenwashing here demonstrates how the core of a business model, the value proposition, can easily be manipulated. Furthermore, greenwashing indicates that, in the eyes of some decision-makers, the perceived costs of delivering on green promises to stakeholders outweigh the benefits. Otherwise, they would keep their promises to the stakeholders rather than deceive them. The widespread use of greenwashing sends the troubling message that many actors find the business model for greenwashing more appealing than the business model for sustainability. Moreover, greenwashing occurs when decision-makers are confident that stakeholders will not detect their opportunistic behaviour. If decision-makers were aware that the greenwashing would be exposed,

they would be less likely to engage in these activities. In this regard, greenwashing draws attention to the fact that few actors have a complete understanding of the entire business model, including the supply chain, business operations, accounting practises, and customer relations. A lack of transparency about the 'real' business model creates a conducive atmosphere for greenwashing. According to Magretta (2002, p. 4), a business model is essentially a story about how an organisation works. Greenwashing companies turn the business model into fiction by fabricating the link between the value proposition and the underlying organisational infrastructure to impress stakeholders.

## Conclusions

Greenwashing companies fail to keep their sustainability promises to their stakeholders. Based on existing typologies in the business model literature, we propose a new framework for categorising talk-action disconnects regarding sustainability issues in this study. Greenwashing can be considered as an indicator of organisations with broken business models that deliberately decouple different business model components. In general, this study draws attention to organisations with inconsistent business models, which appear to be a common occurrence in the context of corporate sustainability.

Whether the talk-action disconnect is a deliberate attempt to mislead others (i.e. greenwashing) or a consequence of something else is an empirical question that remains a major challenge for greenwashing research, which is complicated by a number of measurement issues (Hummel and Festl-Pell, 2015). Several empirical studies on greenwashing are retrospective and based on content analysis of corporate communications (Lyon and Montgomery, 2015, p. 231). Specifically, scholars struggle to grasp the intentional component of greenwashing. Other concepts used to describe talk-action discrepancies are easier to operationalise as they do not require knowledge of the motivation underlying the talk-action disconnects. More research into the practise of greenwashing is required in the future, even though this will be a difficult task as greenwashing companies seldom provide access to the organisation.

Future research on greenwashing must also investigate the organisational factors that enable and constrain greenwashing practises. The scale of greenwashing raises the question of whether the dominant business models we know today urge business personnel to exaggerate performance. After all, greenwashing is frequently a collaborative effort that necessitates the participation of multiple actors from various functions, professions, and/or organisations. The Volkswagen emission scandal, for example, was not just the result of a single scrupulous individual plotting against customers and the general public by manipulating the numbers (Higgins *et al.*, 2020). The widespread prevalence of greenwashing is most likely related to how businesses are currently organised, such as the division of labour, resource infrastructures, customer interfaces, and management control systems. Early organisational theories debated whether modern company hierarchies and structures made it difficult to address social and environmental issues (Mintzberg, 1983). While breaking down business models into interdependent building blocks improves analytical clarity, it may also inadvertently draw attention to the vertical and horizontal silos of modern organisations, which impede coordination, collaboration, and knowledge sharing. After all, greenwashing is most likely to succeed in organisations with impenetrable boundaries that prevent access to reliable information about economic, social, and environmental performance.

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# JOURNAL OF BUSINESS MODELS

## Operationalizing Collaborative Business Models: A Practitioner Capabilities Lens

Philip H. Coombes<sup>1</sup>

### Abstract

This paper offers insight into the boundary-spanning practitioners and the operationalization of their capabilities that are critical to sustainable value co-creation, delivery, and capture within collaborative business models. Few empirical studies have focused on the concept of collaborative business models - those business models in which value is co-created, delivered, and captured between practitioners outside the boundaries of a single firm - and research into the dynamic/ordinary capabilities of their boundary-spanning practitioners appears neglected. The study is centered on three firms that form a solutions collaborative (public-private) business model. A case study methodology is deployed to examine the firms as three embedded units of analysis. The data sources consist of semi-structured interviews supplemented by archives of publications. The findings advance understanding of practitioner dynamic/ordinary capabilities in solutions collaborative business models that are critical to support value co-creation, delivery, and capture.

### Introduction

The purpose of this paper is to provide empirical insight into the boundary-spanning practitioners and the operationalization of their dynamic and ordinary capabilities that are critical to sustainable value co-creation, delivery, and capture within a collaborative business model (Dreyer et al., 2017; Pedersen et al., 2021). We propose here that a business model

represents more than just the revenue model of a single firm; we view business models as a broader, pluralistic concept that has the potential to be used by practitioners in a network context (Freudenreich et al., 2020; Palo & Tahtinen, 2013). The development of sustainable business models often depends on the collaboration of multiple actors, such as customers, suppliers and other stakeholders, i.e. public agencies

Keywords: boundary-spanners, dynamic/ordinary capabilities, value co-creation.

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- in other words public-private collaboration, however such discourse appears neglected in the literature (Holm & Kringelum, 2022). For instance, Quelin et al. (2019:831) posited recently that understanding how private-sector actors engage in collaboration with public-sector agencies is particularly important "given the growing scholarly attention to these novel hybrid organizational forms." The role of these boundary-spanning actors, therefore, who facilitate cross-unit knowledge transfer within and beyond firm boundaries (Zhao & Anand, 2013), is an extremely important factor in the effective operationalization of public-sector undertakings (Nicholson & Orr, 2016). Therefore, by examining business models beyond the boundaries of a single firm, this study takes a wider perspective on business models. Research into collaborative business models - those business models in which value is co-created between practitioners outside the boundaries of a single firm - is an emergent area in the literature with few empirical studies elucidating how these models are operationalized hitherto (Coombes, 2022; De Man & Luvison, 2019). By encouraging practitioners to look beyond their own firms' boundaries, these actors can potentially bring capabilities to their own business models (Chesbrough, 2007). Whilst ordinary capabilities are best practices that typically start in one or two firms and then spread to the entire industry, conversely dynamic capabilities are higher-order competencies that enable firms to orchestrate resources to create superior firm performance (Eisenhardt & Martin, 2000; Teece, 2014, 2018). At this higher-order, dynamic capabilities consist of three clusters of processes, namely sensing opportunities, seizing the opportunities by mobilizing resources and transforming/reconfiguring by continuously renewing the firm (Teece, 2018). Furthermore, research into the capabilities of boundary-spanning practitioners within collaborative (public-private) business models also appears neglected.

This study is centered, therefore, on the boundary-spanning practitioner capabilities of three firms that form a solutions collaborative (public-private) business model. The findings advance our understanding of practitioner dynamic and ordinary capabilities in solutions collaborative (public-private) business models that are critical to support value co-creation,

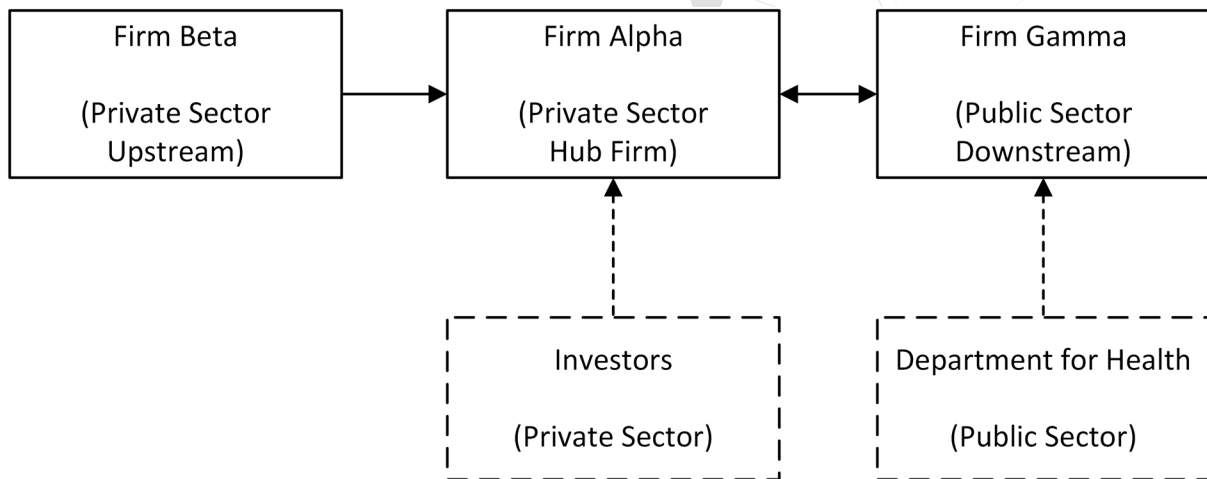
delivery, and capture. The structure of this short paper is as follows: following the introduction to the research issues, the case study methodology deployed is outlined; the case study is presented next followed by a discussion of the key insights from the study; finally, conclusions are then drawn including potential directions for future research.

## Methodology

Three firms, which have been anonymized, were examined as multiple embedded units of analysis (Yin, 2018) within a single case study context. Twenty-five semi-structured interviews of approximately one hour duration was conducted with senior executives of the three firms, majoring on these actors' practices and praxis. Additional secondary data sources were also used to provide contextual information. Purposive sampling was deployed which followed the principles of theoretical saturation (Black & Tagg, 2007; Cheung et al., 2007). Following familiarization with the three firms, the within-case thematic analysis was undertaken. This prompted further analysis of the respondents' interview transcripts and then further examination of the themes to ensure that the analysis was thorough and preconceived ideas were not being forced upon the data. To aid the coding process NVivo was deployed.

## The Case Study Context

The United Kingdom Department of Health launched the National Health Service (NHS) Local Improvement Finance Trust (LIFT) program in England in 2000 (Department of Health, 2000). At that time, NHS LIFTs were a new approach aimed at improving the then long-standing under investment in healthcare facilities. The NHS LIFT encouraged the co-location of healthcare professionals into single buildings together with a more integrated approach to primary care. The NHS LIFT examined in this study was a contractual relationship between a public-sector agency and a private-sector firm, in which the private-sector firm provided a public service and assumed substantial financial, technical, and operational risk in undertaking the project. A key component of NHS LIFT contracts was an exclusivity



**Figure 1:** The three firms that form the solutions collaborative (public-private) business model

clause giving the LIFT company the right to build all healthcare properties for a clinical commissioning group – a public agency – situated within their local authority boundaries. These contracts also enabled significant value capture by receiving guaranteed revenue streams for up to twenty-five years.

The empirical setting was focused on three firms which formed a supply chain through from upstream supplier to downstream end user – which took in and considered a public-private downstream dyadic, an upstream buyer-supplier dyad as well as the broader networked contexts of the three firms in a solutions provision collaboration. The lead firm, we call Firm Alpha, acts as the hub firm, and the two other individual firms, we call Firm Beta and Firm Gamma, act as the supplier firm and the customer firm respectively. Firm Alpha's transactions with Firm Beta took place within a single industry context. The broad supply chain context of Firm Alpha crossed multiple industry boundaries and the exchanges between Firm Alpha and Firm Gamma crossed a sector boundary between public and private sectors. Firm Alpha, as the hub firm of the study, was therefore assumed to be the primary designer of the collaborative business model (in the terms used by Storbacka et al., 2012). We posit that the three firms all participated in a collaborative (public-private) business model because these firms' practitioners all collaborated with those of other industry actors, for example, customers, suppliers, public agencies, and other co-located stakeholder actors. An illustration

of the collaborative (public-private) business model is presented in Figure 1.

Firm Alpha is a family-owned independent real-estate development, investment, and facilities management business situated in a city-region in the North of England. Firm Beta is an independent building supplies business based in the same city-region as Firm Alpha. Firm Gamma is a public agency founded as a special purpose vehicle firm under the NHS LIFT based in the same city-region as Firm Alpha and Firm Beta. There was an expectation that this collaborative project would attract private-sector practitioner capabilities as well as resources (including finance), and innovation to the provision of public-sector infrastructure, particularly healthcare facilities. Therefore, we understand collaborative business models to be a sub-class of business models in which the boundary-spanning practitioner capabilities between Firm Alpha, Firm Beta and Firm Gamma, are critical elements of the co-creation, delivery, and capture of value.

## Key Insights

Dynamic capabilities involve a firm's top management, i.e. the proprietor, managing director, or chief executive officer (CEO), sensing, seizing and/or transforming/reconfiguring opportunities and adding value through their re-organization of resources and opportunities (Eisenhardt & Martin, 2000; Teece, 2014, 2018). For instance, Firm Alpha's CEO described

one of his entrepreneurial capabilities himself using the term *maverick*, indicating a dynamic capability. In co-creating the collaborative business model, Firm Alpha's CEO displayed certain boundary-spanning dynamic capabilities by the sensing of a new NHS LIFT opportunity, the seizing of this opportunity, and the successful transformation/reconfiguration of his erstwhile construction firm to realize the opportunity by the systematic cannibalization and simultaneous co-creation of a new boundary-spanning collaborative business model with Firm Beta and Firm Gamma which was re-focused around satisfying customer needs, around the firm's new solutions products/services and around supporting the needs of its co-located communities. Therefore, Firm Alpha's CEO was also the practitioner responsible for the *systems integration*, a dynamic capability, of the firm into new product/service and market areas due to his willingness to take a risk on the new NHS LIFT opportunity in the city-region. In contrast, the findings also highlighted the existence of ordinary capabilities (Teece, 2014) within the collaborative business model. In addition to Firm Alpha's CEO, the firm's boundary-spanning directors of its various sub-divisions were seen also as the principal practitioners involved the day-to-day management of the firm. These practitioners displayed the existence of more ordinary capabilities to lead teams of people and to co-ordinate other activities and resources. Several respondents reported the firm's head office-based practitioners, who typically specialized in the administrative areas of finance, health and safety, human resources, information technology, procurement and public relations and communications, also played critical roles in the collaborative business model. For instance, these practitioners also provided administrative support capabilities to Firm Gamma.

Firm Beta's CEO also evidenced the possession of dynamic capabilities. In a similar finding to Firm Alpha, the notion of collaboration was displayed by Firm Beta's CEO. This actor was also seen as the principal practitioner responsible for the creation of a resource base in ways that other types of practitioners could not have achieved by converting a new business idea into a successful venture due to his readiness to take risks, and which involved a boundary-spanning collaboration with Firm Alpha. However,

unlike Firm Alpha, Firm Beta's CEO was reluctant to accept the label of an entrepreneur. In addition to Firm Beta's CEO, the firm's branch directors, recruited because of their experience and knowledge managing other firms in the same industry sector as Firm Beta, also displayed certain entrepreneurial capabilities. These practitioners displayed the existence of ordinary capabilities to lead teams of people and to coordinate other activities and resources. Several respondents used the metaphor *hungry* to describe the determination of these practitioners to achieve success. However, unlike Firm Alpha's CEO and Firm Beta's CEO, the branch directors were not required to demonstrate risk tolerance and therefore the risk-taking capabilities normally associated with entrepreneurial practitioners were not evidenced. All the risk related to the operationalization of the firm's decentralized network of branches was borne centrally by Firm Beta. These practitioners' entrepreneurial capabilities appeared, therefore, to be semantically different to the entrepreneurial capabilities of both Firm Alpha and Firm Beta's CEOs. However, some respondents cautioned on the use of the term *entrepreneur* when describing these branch directors stating that not every branch director displayed entrepreneurial capabilities. In addition to Firm Beta's CEO and branch directors, respondents from the firm also reported that its head office-based practitioners, whose capabilities typically specialized in disciplines such as finance, human resources, information technology, marketing, and procurement, were also seen as the principal practitioners involved the operationalization of the firm. These practitioners thereby evidenced ordinary capabilities in terms of the delivery of professional services to Firm Beta. However, apart from Firm Beta's CEO and branch directors, unlike with Firm Alpha, Firm Beta's practitioners at the lower-ranking levels displayed little evidence of boundary-spanning collaborations between the two firms.

Finally, Firm Gamma's CEO further displayed the possession of dynamic capabilities. Whilst this practitioner did not appear to accept the label of an entrepreneur, this actor displayed other innovative and opportunistic capabilities. In co-creating the business model with Firm Alpha, collaboration was evidenced by the CEOs of Firm Alpha and Firm

Gamma who created and developed new boundary-spanning relationships where value was co-created through their resource transforming/reconfiguring capabilities. Firm Gamma's senior- and middle-managerial-level practitioners also appeared to evidence various boundary-spanning business development capabilities. These practitioners were, typically, real-estate development and investment professionals who displayed ordinary capabilities in terms of the administration of the NHS LIFT contract with Firm Alpha. In addition to support capabilities, which consisted of disciplines such as finance, health and safety, human resources, information technology, and public relations and communications, provided by Firm Alpha as surrogates, this collaboration with Firm Gamma was necessary because the firm was small with a flat organizational structure and a corresponding small headcount. In addition to Firm Alpha, Firm Gamma was also reliant on a large team of external actors, i.e. legal firms, to deliver its new solutions products/services in the marketplace.

## Conclusions, and Future Research

This study has built on an evolving body of literature considering collaborative business models and presents an *early* empirical study into practitioner capabilities in the context of a solutions collaborative (public-private) business model. A central practitioner type identified in the business model was the *boundary-spanning practitioner*. In co-creating the collaborative business model, Firm Alpha's

practitioners displayed certain dynamic and ordinary capabilities by the sensing and seizing of new boundary-spanning relationships with Firm Beta and Firm Gamma where value was co-created through the transforming/reconfiguring capabilities between the three firms. We have advanced knowledge of solutions collaborative (public-private) business models by the discovery that various practitioner capabilities contribute to the existence of innovation and opportunism within the business model. Boundary-spanning practitioner dynamic capabilities were further indicative of both the existence and absence of *systems integration* capabilities (see for instance Davies et al., 2007; Jacobides & MacDuffie, 2013) within the solutions collaborative (public-private) business model. Whilst the primary role of boundary-spanners is concerned with working within collaborative cross-firm and cross-sector contexts, such studies have not hitherto been set in the context of a solutions collaborative (public-private) business model. We conclude; therefore, the solutions collaborative (public-private) business model needed dynamic capabilities and ordinary capabilities as the metaphorical glue to sustainably exist.

In the future, we contend a particularly attractive direction for further research could include an examination into the practitioner capabilities of firms that both compete and collaborate with each other. The notion of *coopetition* (see for instance Gernsheimer et al., 2021; Lundgren-Henriksson & Kock, 2016) posits that cooperation and competition function simultaneously in inter-organizational relationships.



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# JOURNAL OF BUSINESS MODELS

## Business Models as Complex Nonlinear Systems: Providing a Conceptual Framework for Growth and Innovation

Carmen Cutri<sup>1</sup>

### Abstract

**Purpose:** This study conducts a comparative analysis between complex nonlinear systems and business models.

**Findings:** Drawing from early research and current debates on complex systems, the paper links business models' qualities such as emergent properties, feedback loops, interdependency of its components and sensitivity to initial conditions under the umbrella of complexity theory. The paper also introduces the concept of attractors and non-equilibrium in business models.

**Originality/Value:** The value of directly addressing the construct's nonlinear dynamic is twofold. First, it will try to resolve the conceptual ambiguity that has traditionally surrounded the discipline of business model and business model innovation by providing a new method to study the construct. Also, by linking the business models' qualities under the umbrella of complexity theory, this paper hopes to resolve the disconnect in the current research effort and to encourage further dialogue and studies on the subject of business model and complexity.

**Practical Implications:** By attempting to represent the business model construct as complex system, the paper opens up the study of business model to novel possibilities to understand its dynamic and evolution. Also, by introducing the concept of business model's attractors the paper seeks to find a framework to support and understand business model's innovation and evolution.

**Research Limitations/Implications:** Limitations are inherent to the non-empirical nature of this study. Furthermore, the paper sole objective is to introduce an overview of how different aspects of complexity relate to business models, therefore this study lacks of depth in the analysis of each of aspects.

Keywords: Business Model, Complex Nonlinear Systems, Business Model Innovation.

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## The Classical School of Thought: The Linear Business Model

Since the end of the 17<sup>th</sup> century, reductionism has been the dominant method of enquiry in almost all sciences. In an endless quest for simplicity, the reductionist method argued that the knowledge of the system as a whole, could be deduced from an adequate understanding of its constituent parts, and its macro-dynamics could be inferred by understanding its micro-dynamics.

This same method of enquiry—strictly linked to the concept of linearity and proportionality (Zensho, 2010)—has been implicitly applied to business model studies where, by entrusting a leading role to its components, researchers and practitioners have emphasised the construct's modular characteristics. In this context, business models have been understood and recognised as collections of single units that can be assembled or dismantled upon request. Relevant scholars supported this idea; Osterwalder and Pigneur (2010) created the 'Business Model Canvas' with nine building blocks: value proposition, partners, activities, resources, customer relationships, channels, customer segments, cost structure, and revenue streams; Demil and Lecocq (2010) divided the business model into resources, competencies, organisational structure, and propositions for value delivery; Amit and Zott (2001) split the business model into the design of transactional content, structure, and governance.

The traditional reductionist approach, albeit foundation of numerous scientific methods and discoveries for over two centuries, displays an important limitation—it fails in environments dominated by complex behaviour. Here, tight interconnections, continuous feedback loops, and emergent properties do not allow us to adequately describe the system's global dynamics by breaking it down into its constituent elements. In business model studies, while linearisation is adequate to understand the system's elements in isolation and provide a reliable picture of the status quo, it fails to describe the system's true potential, presenting several important limitations.

First, the business model thus described is only adequate for understanding and predicting the

behaviour of single elements, neglecting their intrinsic sense of connection and their continuous interaction with the external environment (Casadesus-Masanell et al., 2010). It has been noted that *the processes through which new business models are created and existing ones transformed take place within the business context* (Ahokangas & Myllykoski, 2014 p.9), and such a process *cannot be assessed in the abstract, as its suitability can only be determined against a particular business environment or context* (Teece, 2010. p.191).

In addition, the traditional approach encounters significant difficulties in relating the macrosystem (business model) to its microsystems (constituent elements). Assessing a business model's profitability based on a construct of preselected and equally-relevant elements would reduce it to an unequal and distorted representation of the business logic. In fact, the relevance of a given element can only fully emerge from a macro-level picture of the construct and not from a single-element breakdown. For example, evaluating the impact of a specific distribution system on a company's business logic is more important than breaking down equally relevant elements in the business model. As Siggelkow (2002) observed, *the specification of core elements ex ante ... assumes that the same elements are equally central or core in all the firms [...] and also implies that the number of core elements is constant across different firms and constant over time for any given firm* (p.126).

The tendency to apply linear models has also led to the recognition of cycles and various types of periodicities (DaSilva et al., 2010, Bertuglia et al., 2003). However, as business models are strictly linked to the environment in which they operate, a repetition of two identical business models with the same degree of profitability and efficiency is highly unlikely. What works in one industry or market may not work in another with different segments or competitors.

Therefore, embracing the idea of a business model *that can be constructed and adjusted to achieve particular ends* (Johnson, 1994. p. 322), ignores both the construct's intrinsically dynamic nature and its ability to interact with the external environmental, thus delivering an inadequate representation of the

business logic and failing to create an effective and reliable model for innovation.

## From Linear to Nonlinear Business Models

Over the last few decades, academics and practitioners have examined organisations through the lens of complexity theory. Emphasising the need to balance organisational structure and flexibility, relevant authors (among others: Priesmeyer, 1992; Lewis, 1994; Johnson et al., 1994; Tetenbaum, 1998; Marion, 1999; McCarthy, 2000; Black, 2000; Stacey, 2003; Burnes, 2005) have argued that organisations are complex, nonlinear systems whose members can shape their present and future behaviour through spontaneous self-organising [behaviours] underpinned by a set of simple order-generating rules (Burnes, 2005. p.81). Business model theory has also been evolving in this direction and scholars and researchers have so far implicitly drawn from the notion of complexity and complex systems to better understand the construct. Authors such as Lecocq and Demil (2010), Casadesus-Masarell and Ricart (2010), Abdelkafi and Taeuscher (2015), Foss and Saebi (2017), Velu (2017), Massa, Viscusi, and Tucci (2018) and Dentoni et al. (2021) have relied on the notions of emergent properties, feedback loops, interdependency between components and self-organization tiptoeing around the link between business models and complexity science to explain the dynamic of the business models' constructs.

In the specific, Demil Lecocq addresses the concept of emergent property explaining that the business model's building blocks *"will be continually reacting with each other, and with other constituent parts of the firm's structure... in [a] unique combinations to determine the firm's idiosyncratic bundle of capabilities that differentiate it from others in its sector"* (p. 230);

Casadesus-Masarell (2010) addresses the business model's feedback cycle stating that *organizations affect each other when acting within the bounds set by their own business models [...] leading to consequences for both [ in this context] the feedback to the rest of the system is determined not only by the focal*

*firm's choices, but by the choices of the other firm as well.* ( p. 202).

The concept of feedback loops in business model was also analysed by Abdelkafi and Taeuscher (2015) that noted how *the relationship between different business model dimensions induces self-reinforcing feedback loops that leads to constant growth* (p.7)

Many relevant authors have also addressed the concept of interdependency in business models.

Foss and Saebi (2017) infers that the relationship between business model components can be described *in terms of their independency or complementarity* (pg 16).

This view was also reiterated by Massa, Viscusi, and Tucci (2018) that refers to the *web of complex interdependencies [that] have important implications for business model innovation* (p. 63). Last but not least, Dentoni 2021 highlights the self-organizing nature of the business model that leads its elements to *spontaneously and continuously reorganize their interactions* (p. 1202). Such view has been also endorsed by Velu 2017 who highlights that *a business model is an activity system consisting of a set of interdependent organizational activities centred on the focal firm and its constituent partners and customers* (p.14)

For analytical tractability, however the construct's nonlinear dynamic has never been considered a viable method of enquiry (Atkova et al., 2020; Anderson, 1999).

Linear models enable relatively precise predictions. They can be broken down, recombined, and do not display sensitive dependence to the initial conditions. However, a system exposed to intense internal and environmental feedback absorbs increased nonlinearity, making it too tangled to be analysed and predicted using traditional analytical tools, or any tool at all. Furthermore, nonlinear systems are also sensitive to initial conditions, generally making them subject only to a wide range of approximations that *worsen the further into the future we try to predict* (Bertuglia et al., 2003. p.45). Such a low degree of control and prediction has troubled researchers

and practitioners, who continue to be resistant to *loosely applying nonlinear dynamical theories to organisations* (Johnson, 1994, p.1).

Nonlinear models are characterised by an emergent property only identifiable in the system as a whole. Here, it is not the system's elements in isolation that matter (Meadows, 2008), but the way these elements are assembled, their interlocking, and the nature of their relationship that creates a value greater (or lesser) than the sum of their parts. In a nonlinear system each element is characterised by large-scale structures and cannot be fully isolated from the rest. By blurring the boundaries between single units and the whole, analysing a nonlinear system as a collection of individual parts is nearly impossible (Gabbay et al., 2011). They are all unique, behave quite differently from each other, and need to be understood on their own terms (Gharajedaghi, 2012). An analogous pattern of behaviour can be observed in business models where various building blocks coupled differently, and/or applied to different industries or markets, produce various degrees of profitability and call for different rules. For example, the *lock-in* model may work well in a product-service relationship (Teece, 2010), or for high-end products, but not well enough for products in low-loyalty industries (Brem et al., 2016). Additionally, some business models can be less sensitive to one or more components in one industry, but highly sensitive to the same relationship under different conditions and/or in other industries or markets, making the construct open to various combinations and solutions.

This study focuses on three aspects of nonlinear systems yet to be explored in relation to business model theory: feedback cycle, sensitivity to initial conditions, and equilibrium.

### Feedback Cycles

Once in the environment, nonlinear systems are exposed to various influences and forces called feedback cycles. Through this mechanism, the system selectively acquires information from the environment in which it operates, only to return a different, processed output to the environment. Here, current inputs are dependent on previous outputs. Current outputs affect future inputs, resulting in a

self-reinforcing process of change and evolution of the system and the environment in which it operates.

Abdelkafi and Täuscher (2015) extensively discussed feedback systems in business models. However, it is worth noting here that introducing nonlinearities in the form of positive feedback generates increased growth that can affect the system's operational environment, eventually altering the growth process itself. Here, the nonlinear system displays its ability to *change the relative strength of feedback loops, where the exponential growth caused by a dominant reinforcing loop is followed by a decline caused by a suddenly dominant balancing loop [...], flipping the system from one mode of behaviour (reinforcing) to another (self-correcting)* (Meadow, 2008 p.92).

Transposing this dynamic in the context of business models, we see that the introduction of an innovative construct has the potential to significantly change the market and industry in which the company operates. Such changes will, in turn, be fed back to the business model, eventually shaping its future state, and encouraging a different pattern of behaviour. However, if the construct fails to evolve with the market, this dynamic increases the risk of the business model system flipping from one mode of behaviour (i.e. growth and innovation) to another (i.e. non-growth and non-innovation), altering its evolution process and, consequently, the company growth.

### Equilibrium

The assumption of nonlinearity also challenges the traditional notion of equilibrium.

Complexity theory demonstrates that complex systems are creative only when they are far from equilibrium, in a specific region known as the *edge of chaos* (Langdon, 1990) where order-generating rules maintain complex nonlinear systems at the border between order and chaos (Burnes, 2005).

This concept is acknowledged in organisational theory, in which numerous authors (Lewis, 1994; Brown & Eisenhardt, 1997; Stickland, 1998; Anderson, 1999; Marion, 1999; MacIntosh & MacLean, 1999, 2001; Siggelkow, 2002; Stacey, 2011) have argued that

organisations must operate at the edge of chaos to continuously respond to environmental changes. *By staying in this intermediate zone, [complex systems] never quite settle into a stable equilibrium, but never quite fall apart. Rather [they] exhibit the most prolific, complex, and continuous change* (Brown et al., 1997, p.29). Here, *the organisation is sufficiently rigid to carry information about itself and perform its core task adequately, but at the same time, sufficiently chaotic to allow it to use its information creatively to explore new strategies for survival and change* (Marion, 1999 p.88). In the context of business models, far from the equilibrium and orderliness of any analytical analysis, the edge of chaos is a zone of maximum complexity where disorder and emergence dominate the dynamics driving the construct to innovation. Within this zone, business models are assumed to evolve through spontaneous market dynamics. Instead, they are locked into a mechanical framework in which some components are picked and chosen *a priori* to describe their behaviour. Here, instead of encouraging chaos and evolution, the traditional view anchors the company to past solutions and known paths, generating a gravitational pull towards the status quo and making it difficult to break orbit and move towards new and innovative solutions.

### Sensitivity to Initial Conditions

The assumption of nonlinearity also questions the idea of linear causality, showing that the link between cause-and-effect dissolves in the long-term and cannot be identified (Bertuglia et al., 2003). This phenomenon is known as sensitivity to initial conditions, where small input's differences amplify into largely disproportionate differences or not at all. Here, each position of the system is based on a previous movement, making long-term forecasting intrinsically impossible (Priesmeyer, 1992). Sensitivity to initial conditions has profound implications for business models because *two entities with very similar initial states can follow radically divergent paths over time* (Anderson, 1999 p.217) and, as a result, *diverge exponentially rather than converge stably* (Marion, 1999 p.67). For simplicity, let's assume that two business models with similar characteristics operate in the same environment. As they interact with the environment and are exposed to different influences (e.g. consumers, market, industry), they

will necessarily evolve following different paths, distancing themselves from one another, *diverging exponentially rather than converging stably* (Marion, 1999 p.67).

Such a high degree of complexity, changeability, and uncertainty exposes business models to an astronomical number of possibilities, making the formulation of a general framework exceptionally challenging, if not impossible.

To fully understand the subtle difference between linear and nonlinear perspectives and the way each impacts business models' dynamics, we use a metaphor already adopted by Ramon Casadesus-Masanell and Ricart (2010, p.197). The authors note that *to make progress towards understanding the dynamics of business models, it is helpful to use the analogy of an automobile made of parts, such as wheels, engines, seats, electronics, and windshields. To assess how well a particular automobile works, the authors note that, one must consider its components and how they relate to one another, just as to better understand business models, one needs to understand their component parts and their relationships.*

Taking this analogy and integrating it with the principles of nonlinear dynamic, we note that automobiles are unaware of their past performance (Forrester, 1968); in business models however, present choices and past performances have a significant impact on their future state.

Also, the functioning of an automobile is regulated by linear causality where the relationship between the cause and effect is always proportional and predictable. In business models however, a small change in one element can potentially create a disproportionate effect on its overall functioning and an impact on the overall business landscape, or not at all!

Furthermore, automobiles are regulated by a traditional notion of equilibrium, in which every change is self-corrected to ensure the engine's smooth operation (for example, the transmission system or the cooling system). Business models, on the other hand have a direct impact on the market and the industry in which they operate; here every adjustment

has the potential to create a new normal in a never-ending process of change. Not a dynamic we would expect from an automobile, unless we are driving a Transformers! For the readers who are not familiar with the subject, Transformers is a series of American science fiction movies narrating the adventures of a DNA based robots' species, better known as autonomous robotic organisms. Now let's assume we are driving a Transformer instead of a normal car. In this case, when the automobile reaches the inflection point, instead of a balancing mechanism kicking in, the car would change into a whole new state, then into a new one and so on until it settles into a human like shape with human behaviour, by very definition non-linear! No balancing system here, only pure evolution. Exactly what a business model should be considered like.

Lastly, two automobiles with two identical initial conditions will never follow radically divergent paths; they are not affected by the principles of evolution, emergence, adaptivity, and self-organisation, which are recognised characteristics of the business model construct (Dentoni et al., 2021; Atkova et al., 2020; Khodaei and Ortt, 2019; Massa et al., 2018, Lecocq and Demil, 2010), and the Transformers!

## A Sneak Peek into the Business Model's Macro View: Business Model's Attractors

The process through which new business models are created and existing ones transformed occurs within the business context (Ahokangas & Myllykoski, 2014); therefore, the study of business models must be executed with the attractors and their dynamics in mind.

Attractors represent a fundamental concept in dynamical system theory. Merrion 1999 (p.100) noted that *systems are composed of units that interact with one another and form complex networks of interdependency. Units form networks, networks settle into attractors, and a network of attractors forms [once again] a system.* In other words, attractors maintain order in larger dynamical systems by breaking them into smaller aggregates. Attractors have the important property of stability;

systems revolving around the same attractor, in fact, tend to follow a stable route around its orbit even when subject to pressure from the external environment. In a space dominated by nonlinear interactions, attractors remain stable and can return to their original state if disturbed. However, being the product of nonlinearity and interactivity between the system components and their external environment, they never exhibit the same behaviour, displaying a trajectory that never repeats itself (Marion, 1999).

Researchers, including Vincenti et al. (2012), Stecey (2011), Stickland (1998), Stacey (1995) and Wheatley (1992), have discussed the notion of attractors within an organisational context. However, in business models studies, the notion of attractors has rarely been acknowledged (Atkova & Ahokangas, 2020). Instead, authors refer more frequently to general concepts such as *business model's ecosystem* (Hallecker and Hartmann, 2013; Teece, 2010), *external environment* (Demil and Lecocq, 2010) or *macrolevel perspective* (Velu, 2017).

Taking a high-level perspective of the business model's dynamic we see that, by interacting with each other's, business model's building blocks shape the business model's construct. In turn, the totality of the business models form a complex network of interdependent entities around the identifiable area of the attractor. In this scenario, the whole network of attractors forms the broader market system. Business models that display common characteristics and synergistically intermesh, lie in the gravitational orbit of the same attractor and operate within a range of points known as the basin of attraction. Here, the business model performs within the boundaries and parameters established by the attractor, showing common behavioural traits and recursive structures comprising (among all the possible options) only a reduced set of activities compatible with the attractor's general trend (Anderson, 1999; Bertuglia et al., 2003; McDaniel and Driebe, 2005). Business models operating in this region are connected by feedback loops that interact in a diffuse and nonlinear fashion acting on information derived from the others to which they are connected (Andersen 1999) (see paragraph on feedback cycles).



In this evermoving landscape, a change in one or more elements will resonate within the industry, among similar products and in the broader market, encouraging continuous non-disruptive change (by adding to its normal fluctuation) and/or inspiring non-continuous disruptive change (by introducing one or more elements that considerably deviate from the attractor's standard operational parameter). Pulled into a vortex of never-ending change, business models eventually reach a critical point where they 'spontaneously' self-organise to produce a different structure and/or behaviour that could not have been predicted from its initial state (Stacey, 2011). In this context, the business model that presents an unprecedented dynamic when compared to existing incumbents (Amit and Zott, 2012) is pulled out of the attractor's orbit, crossing over an invisible boundary and moving towards a different one (Marion, 1999). As evolution proceeds, business models scatter themselves across the attractor's orbit, join a different one, or create a new one altogether, eventually altering the network's dynamic. By growing or shrinking to encompass a broader or narrower range of behaviour, attractors can alter their appearance or fade away (Marion, 1999), ultimately reshaping the market and industry landscape.

Business models, like any other dynamical system, do not have the capacity to spontaneously move from one attractor to another. Nevertheless, they do so by the property of *self-organisation*, where structural and organisational change[s] arise 'spontaneously' over time (Stacey, 2011). Notably, in the natural world, self-organisation is an automatic process driven by order-generating rules (Lewis, 1994; MacIntosh and MacLean, 1999, 2001; Stacey, 2011). However, in companies, the process is propelled by a combination of human order-generating rules and an appropriate company structure (MacIntosh and MacLean, 1999, 2000). Self-organisation in business models is the leitmotif behind both the emergence of their informal structure (Anderson, 1999) and the fast company's operational changes made against slower policy changes. It is exceptionally difficult to predict which business concept will lead to a new attractor, when a company will move from one attractor to another or create a whole new dynamic within the same attractor. This dynamic is dominated by tightly

intertwined elements of randomness, choice, and chance combined with the natural properties of the nonlinear system of sensitivity to initial conditions, evolution, and emergence.

An oversimplified illustration of this macro-level dynamic is as follows: Jeff Bezos came across a statistic that the Internet was growing at a rate of 2.300% (element of randomness, source Amazon.com). Impressed, he dived into the world of E-commerce, creating the online bookseller Amazon.com (element of choice and chance).

While the e-commerce attractors grew, an increasing number of companies, including Ebay and Etsy, added new and different business concepts to e-commerce attractors; Netflix was born on the premise that *Amazon.com was having good luck with books, and why not films?* (Hasting, 2020, p. 24).

Over a decade later, Netflix broke the orbit of e-commerce to create a new attractor when, in 2007, it announced the launch of its streaming service. By 2011, several competitors such as Amazon Prime, Apple TV, and Disney Plus emerged and joined the newly-created attractor of *streaming services*.

Recently, we observed a similar dynamic in the aviation industry. Until the end of the 90s, the full-service airline was the main business concept in the industry. Scattered on this attractor, carriers offered a multitude of services compatible with the concept of *full-service*. Following a heavy market deregulation, Ryanair left the full-service attractor to create the European *low-cost airline* attractor. By the early 2000s, the low-cost attractor was populated by different airlines competing within the same basic concept of low cost. As the low-cost business model attractor grew, in 2000, Air Berlin and Vueling created a new *hybrid* business model by combining business characteristics from both the low-cost carrier and the established full-service carrier. This new attractor reinvigorated the macro dynamics in which companies could now choose among different business models and compete on different levels.

## Conclusion

To date, in the attempt to establish a common and widely accepted language to understand and study the business model construct, researchers and practitioners have tried to reconcile the two conflicting notions of analytical thinking and nonlinear behaviour. As result, the concept of *business model* was enclosed within the boundaries of the mechanistic framework of Newtonian legacy.

This approach shaped the business model literature, resulting in the misleading idea of change as a standardised process that can be controlled by calculating its proportional effects and outcomes. Reinforcing a monochrome conceptualisation of change (Guastello et al., 2009), the classical Newtonian approach has, in time, become a conceptual obstacle to innovation, fostering companies' continuity within a market that encourages discontinuity (Foster & Kaplan, 2001). The two approaches (linear and nonlinear) are in fact based on two very different predicaments. The traditional method is guided by analytical instruments and aims to pursue stability, equilibrium, reduce complexity and create order out of chaos. On the other hand, complexity turns order into chaos (Tetenbaum, 1998), with instability and non-equilibrium being the ultimate birthplace

of innovation. In this context, managers are *required to work with it instead of trying to reduce it* (Olmedo, 2010 p.80) and moving the focus of their activity from *controlling the outcome to optimising uncertainty* and from *stability to instability*.

The shift in perception has been reinforced by the emerging discipline of nonlinear management and a general shift in business focus, strengthening the dichotomy between economies of scale, which is based on traditional mass production, and economies of scope, which is based on continuous innovation to produce fewer products in a cost-effective manner (Helaakoski et al., 2006). Trying to resolve the conceptual ambiguity that has traditionally surrounded the discipline of business model and business model innovation, this very humble contribution wants to provide a new perspective and a new method to study the subject. Also, by linking business models' qualities (emergent properties, feedback loops, interdependency of its components, sensitivity to initial conditions and notion of equilibrium) under the umbrella of complexity science, the author of this paper hopes to resolve the traditional disconnect in the research effort and to encourage further dialogue and studies on the subject of business model and complexity science.

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## The Simultaneous Management of Business Model Innovation and Replication Processes: The Case of Airbnb's "experiences"

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### Abstract

#### Purpose

This article aims to understand how organizations can simultaneously manage their business model innovation and replication processes.

#### Methodology

Using an exploratory qualitative approach, we analyze Airbnb's business model innovation and replication processes when the company launched its new value proposition labeled "experiences".

#### Findings

Our findings show that innovation and replication processes are designed, tested and implemented simultaneously. We underline the role of the platform in standardizing the key elements of the different stages of the processes. Through its digital platform, Airbnb can standardize its value creation and value capture processes to drive replication at scale.

#### Contributions and principal implications

Our paper contributes to strengthening a bridge between the literature on replication and business model innovation, to complement previous research on the Airbnb business model and to enrich the debate about the adaptation perspective in the replication literature. Our research has practical implications for entrepreneurs in the tourism and hospitality industry who would like to develop and replicate their business model using a digital platform.

Keywords: Airbnb, business model, digital platform, replication, business model innovation.

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## Introduction

To remain competitive, companies must be able to manage business model innovation while replicating their business model. This can lead to what Winter and Szulanski (2001) call the “replication dilemma”, which is a trade-off between replicating the current business model and changing it. To grow, a company must innovate by developing new business models and replicating them on a larger geographical scale (Szulanski and Jensen, 2008) while adapting to local constraints and pressures (Chliova and Ringov, 2017). To meet these challenges, organizations must learn how to manage both processes as quickly as possible as the speed and the cost of replication are critical in the current competitive setting.

The replication strategy literature explains that growth is based on large-scale execution of an established business model through replication in new locations (Winter and Szulanski, 2001). Previous studies (Baden-Fuller and Winter, 2008; Dunford, R., Palmer, I., & Benveniste, J., 2010; Grifell-Tatjé, E., Lovell, C. K., & Turon, P., 2018; Reuber, A.R., Tippmann, E., & Monaghan, S., 2021; Ringvold, K., Foss, N. J., & Elter, F., 2019; Winter and Szulanski, 2001) identify and seek to explain the replication process and scalability. However, these studies generally observe the replication of an existing business model without considering how the replication process can be integrated during the design and experimentation phases of an innovative business model. Less is known about the replication mechanisms of an innovative business model or how replication can interfere with the business model innovation process. Therefore, the research question of the paper is: *How can organizations simultaneously manage their business model innovation and replication processes?*

Empirically, this study uses Airbnb as an emblematic case of business model replication. Focusing on its new “experiences” value proposition, we qualitatively analyze the process of replicating its new business model during the innovation process. In connection with a recent study showing the facilitating power of digital technologies in replication (Tippmann, E., Sharkey Scott, P., & Mangematin, V., 2022), our findings show how digital platforms provide spaces for

exploring new business models and for scaling up a standard model for replication.

The paper makes three important contributions. First, it enriches previous research on the Airbnb business model by highlighting its ability to change and replicate its model simultaneously as a key driver of its success. Second, our research contributes to the replication literature by going beyond the basic “replication dilemma” debate and exploring the mechanisms that can support the innovation and replication processes. Third, it overcomes the opposition between precise replication and local adaptation by revealing how digital platforms provide a standardized framework with routine processes and tools for value creation which allow them to adapt to local specificities.

Our paper is organized as follows. First, we review important pieces of literature that focus on business model replication and innovation. Then we introduce our empirical setting and data collection procedures and present our data analysis. Finally, we present our empirical findings and conclude with a discussion.

## Literature review

### Business model replication

In the strategic management literature, replication is defined as an expansion into new countries based on the repeated application of a specific business model (Dunford et al., 2010; Grifell-Tatjé et al., 2018; Winter and Szulanski, 2001). In this sense, business model replication is a process that allows a company to mobilize the necessary components to replicate its business model in appropriate geographical locations (Winter and Szulanski, 2001). Replication is often associated with an internationalization or multinationalization strategy (Reuber et al., 2021), involving some form of replication-adaptation of the original business model to address local constraints (Chliova and Ringov, 2017). The replication process requires the transfer of tacit knowledge embedded in practices and the ability to routinize processes in different locations using its own specific resources (Baden-Fuller and Winter, 2008; Winter and Szulanski, 2001).



Previous studies (Baden-Fuller and Winter, 2008; Dunford et al., 2010; Winter and Szulanski, 2001) detail the replication process. Winter and Szulanski (2001) suggest that it comprises two different but interdependent phases: exploration and exploitation. The business model is created and refined during the first phase (exploration). During the second phase (exploitation), the business model is stabilized and leveraged through large-scale replication(s). Winter and Szulanski (2001) argue that a critical period in the process is the transition phase, when the challenge for the central organization is to develop the ability to support routine replication activities. Dunford et al. (2010) provide more detail and identify the following four processes used by ING Direct to replicate its business model: clarification – establishing the core business model elements; localization – responding to contextual conditions; experimentation – trying something new; and co-option – taking advantage of the experience of others. They claim that business model replication is a dynamic process in which exploration and exploitation have a continuing and iterative relationship and which needs a balance between centralized coordination and subsidiary autonomy. In a recent study, Ringvold et al. (2019) show that a rapid replication approach with a continued link between innovation and replication brings competitive advantage for companies developing digital services. This role of digital technology is also highlighted in the work of Tippmann et al. (2022) which show that digital businesses and the use of digital technologies can minimize local adaptations while accelerating business model replication in many national markets.

A central issue in the replication literature relates to the approach which the company chooses to follow to replicate its business model. Baden-Fuller and Winter (2008) compare the efficacy of two replication approaches: the template and the principles approaches. The template approach entails the use of working exemplars and closely copying them, whereas the principles approach aims to clarify objectives and the reasoning that links achievable sub-goals to the intended outcome. Baden-Fuller and Winter (2008) show that these two approaches can be both substitute and complementary approaches. However, Winter, S. G., Szulanski, G., Ringov, D., and

Jensen, R. J. (2012) show that adapting a business model can be risky. Of the two options – precise replication of an established business model versus making local adaptations or developing local innovations – the first is found to be associated with lower levels of failure and higher performance. Their results show that too many deviations from a template can lead to unraveling of the business model's logic and to ineffective local operations (Winter et al., 2012). Their findings question the well-established predictions of the adaptation perspective and reopen the debate about the replication process.

### Business model innovation

The business model innovation literature (cf. Nielsen and Lund, 2018) also discusses the replication process (Aspara, J., Hietanen, J., & Tikkanen, H., 2010) as it is strategic for contemporary organizations (Wirtz, B. W., Mathieu, A., & Schilke, O., 2007). Business model innovation involves the design or redesign of several activities and core components of a business model (Casadesus-Masanell and Zhu, 2013). More precisely, it entails “designed, novel, nontrivial changes to the key elements of a firm's business model and/or the architecture linking these elements” (Foss and Saebi, 2017, p.201). As a business model describes the architecture of value creation, value delivery and value capture (Teece, 2010), business model innovation can involve the creation of or changes to all or some of these three value components. Thus, business model innovation is not just the creation, the adaptation or the adoption of a new business model (Mihalache and Volberda, 2021); it also involves the modification or reconfiguration of a pre-existing one (Massa and Tucci, 2013).

Many established and new companies have taken advantage of digital technologies to reinvent their business models through innovation (Rachinger et al., 2018 ; Bhatti et al., 2021). They have undertaken business model innovation based on digital platforms (e.g., Ebay, Airbnb, TripAdvisor, Amazon), connected objects (e.g., Apple Watch, bracelet Fitbit), artificial intelligence (e.g., Alexa, Google Home) and even big data (e.g., Uber, Google, Netflix). Regardless of the approach chosen – creation or redesign – the objectives are to obtain a competitive advantage, improve performance and grow or disrupt a market,

environment or industry (Massa and Tucci, 2013). In this sense, business model innovation entails a strong strategic challenge of exploitation and scaling to go beyond the simple (but costly) exploration of new opportunities (Amit and Zott, 2020). This issue of scaling up is particularly true in strategies of expansion from local to global, both nationally and internationally (Chilova and Ringov, 2017; Tippmann et al., 2022).

With regard to business model replication, various authors stress the key importance of exploiting innovation through a replication process to support sustainable growth by maximizing the value created and captured (Aspara et al., 2010; Latifi, M.-A., Nikou, S., & Bouwman, H., 2021; Szulanski and Jensen, 2008). Furthermore, from a temporal perspective, business model innovation and replication can be linked because any organization that has developed and stabilized a new business model can then create additional value by selecting elements to replicate in other suitable geographical locations (Winter and Szulanski 2001). In the same vein, Heij, C. V., Volberda, H. W., & Van den Bosch, F. A. J. (2014) seek to understand the link between business model replication and renewal in firms' performance. However, their work does not seek to understand in detail the interactions between the two processes of innovation and replication. Rather, it compares two types of business model innovation: 1) replication and 2) renewal (introduction of a new business model that outperforms the existing one). Another work conducted by Garcia-Castro, R., Ricart, J.E., Lieberman, M.B. & Balasubramanian, N. (2018) seek to compare which of the business model innovation or replication activities are better at promoting productivity. Again, the two processes were studied separately and compared without the relationship between the two being the focus of the study.

Despite recent attempts to incorporate the replication perspective into the study of business model innovation, to our knowledge no study has sought to understand how organizations can manage the two processes over time in a connected way. Moreover, even if digital technology is a lever for business model innovation (Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E., 2018) and a facilitator in the business model replication on national markets

(Tippmann et al., 2022), no study to our knowledge observes its role in a double view of business model innovation and replication processes. If replication is a way of exploiting a business model innovation to facilitate its scaling, then it is important to better understand the relationship between these two processes. This study proposes to fill this gap by examining the case of Airbnb.

## Methodology: the Airbnb case study

Based on a constructivist interpretive paradigm which enabled us to better iterate with our respondents (Justesen and Mik-Meyer, 2012), we chose the world-famous digital platform Airbnb as our case study. Focusing on its so-called "tourism experiences" innovation, we set out to analyze the company's business model innovation and replication processes.

As the business model replication phenomenon has been poorly studied, we employed an exploratory qualitative methodology for our research (Huberman and Miles, 2002). This qualitative method, which is most appropriate for "how" questions (Pratt, 2009), uses process-based analysis to better understand the functioning of the phenomenon. We chose Airbnb for our case study because it is an emblematic case of business model replication (Gallagher, 2017). From its creation in 2008, Airbnb developed a strategy to replicate its accommodation business model geographically before innovating in tourism experiences. Airbnb's originality is based on the openness of its digital content and the collaborative organization of value transactions which empower users to create a variety of offerings (accommodation, tourism experiences, etc.) that are impossible for the company to provide through its internal resources alone. More importantly, as Airbnb's digital platform provides a type of working template or operation principles, it makes the case particularly relevant to the current business model replication literature. From the perspective of a single case study, a qualitative approach using primary and secondary data is required to in-depth study the phenomenon (Huberman and Miles, 2002).

## Data collection

Our data collection process focused on Airbnb's

business of tourism experiences. Launched in 2017, this innovative offer meets the company's desire to provide more than just a simple accommodation rental service for travelers and guests. Indeed, Airbnb's strategy is focused on the travel experience and this new business allows it to address the travel agency market. To develop this new value proposition, Airbnb has evolved its business model and has implemented a replication process to allow users (who do not need to be hosts or travelers) to offer tourism experiences to increase the activities that are available during a trip. Our primary data collection therefore focused on the company's Paris, France site, where the research and development (R&D) team responsible for the tourism experience activity is located. We chose this team because it manages the innovation process related to Airbnb's new tourism experiences offer as well as the business model replication process. Between May 2018 and May 2019, we conducted five semi-directed interviews<sup>1</sup> and one focus group, all in French, following a three-step approach:

1. An initial collection of data through three semi-directed interviews with the Global Experience Manager (which lasted between 60 and 90 minutes) to understand Airbnb's strategy, the historical development of its business model, the role of the digital platform, its network of partners, the innovation process of tourism experiences and the business model replication process. This first step was crucial for understanding how Airbnb uses its digital platform to locally find replicable innovation opportunities, how it launches the process to develop the innovation (with strategic and commercial implications at the business model level) and then initiates the replication process on a larger scale.
2. A focus group at an Airbnb meeting with partners in Paris. The objective was first to conduct passive observation of a coordination meeting with local partners. Airbnb faces the challenge

<sup>1</sup> For reasons of confidentiality, we were not allowed to give the names of the interviewees and only their business functions are indicated

of offering a global yet local service in many cities around the world. The local ecosystem of partners is crucial for its business model operation, and Airbnb regularly ensures that these partners are involved qualitatively, especially when an innovation is being developed and replicated. In the case of tourism experiences, the objective of the Paris R&D team is to develop new experiences (innovation) and ensure their replication (business model point of view) through their digital platform. The orchestration link with local partners is therefore important for ensuring the feasibility of tourism experiences and we observed this link during the meeting. We then conducted a small focus group to ask the partners about their role in the replication process and the role of the digital platform in their links with Airbnb. These elements allowed us to better understand how the replication process looks at the local ecosystem before considering global diffusion.

3. Finally, we conducted two semi-directed interviews with a Regional Community Manager and a European Business Manager (which lasted between 60 and 75 minutes). The objective was to better understand the role of the digital platform in the orchestration between the members of the community who offer accommodation and tourism experiences and Airbnb, at both the local and global levels. At the local level, the interview with the Regional Community Manager helped us understand how opportunities for innovation are detected via the digital platform and the community, and how Airbnb works with users to develop their experience for future replication. We thus collected data on the specificities of local orchestration with several perspectives (process, tools and platform). At the global level, the interview with the European Business Manager allowed us to understand the role of the digital platform in the orchestration of the replication process and how Airbnb replicates new types of tourism experiences at the European level and engages large numbers of users in their development.

The interviews were conducted in French, the mother tongue of both interviewers and interviewees, and transcribed manually by one author. These three data collection steps enabled us to understand the two processes of business model innovation and replication. These primary data were then validated, enriched and completed using a substantial amount of secondary data. As Airbnb is a highly mediatized international company, a wide variety of secondary data are available on the company's history, values, strategic development over the years, business model, evolution of its digital platform and collaboration with the community, etc. As well as carefully studying the Airbnb website, we collected around 20

press articles, several YouTube videos (interview/s) and a book about Airbnb (Gallagher, 2017). The summary of secondary data and their use is presented in the Table 1 below. The details of these data are presented in Appendix 1.

### Data analysis

We analyzed the data in two stages. First, we analyzed the interviews and synthesized the information in a written summary structured around three points: 1) Airbnb's strategy; 2) the development of the new innovative "experiences" offer and 3) the replication process from the local to the global level. By presenting this synthesis to and validating it with

Table 1.

Type	Secondary data	Use for analysis
Press articles (22)	Articles about the impact of Airbnb in the tourism industry (6) Articles about the business model innovation of tourism experiences (11) Articles about the story of Airbnb (past, present and future)(5)	Triangulating primary data about business model development, innovation and replication processes. Understanding global motivations for innovation and replication.
Video (10)	Interview of Airbnb co-founders (Joe Gebbia, Brian Chesky and Nathan Blecharczyk) about the story, strategy and success of Airbnb (6) Interview about the scalability of the Airbnb business model (4)	Triangulating primary data about global strategy and the launch of the innovative business model of tourism experience. Understanding the levers of scalability and replication.
Book (1)	Gallagher, L. (2017), <i>The Airbnb Story: How Three Ordinary Guys Disrupted an Industry, Made Billions . . . and Created Plenty of Controversy</i> , Houghton Mifflin Harcourt, 258 p.	Triangulating primary data to understand the history, values, strategy (business model), digital platform, innovation and success of Airbnb.
Web (3)	News Airbnb website Blog Airbnb Airbnb Citizen website	Understanding the collaboration with the community and the role of the digital platform.

Table 1: usage of secondary data collected

the Global Experience Manager, the head of the R&D team in Paris, we were able to identify and formalize the different steps in the business model innovation and replication processes.

Second, we triangulated these primary data with our secondary data to reinforce the findings of our first analysis to better understand the global strategy of the company and the co-founders' vision about innovation, replication and scalability (cf. Youtube interviews). We completed our data compilation using new primary data from the focus groups and the two interviews with the Regional Community Manager and the European Business Manager to better understand replication at different levels (regional, national and international / Europe).

### Findings

Our data analysis shows that the business model innovation and replication processes are intertwined because they are designed, tested and implemented simultaneously. By standardizing key elements of the processes, the digital platform supports the replication of the new business model. The new value proposition is designed and tested both to create

and capture value on a large geographical scale.

### The business model innovation and replication processes are intertwined

Our analysis of the Airbnb case, focused on the introduction of its new "experiences" value proposition, shows that its business model innovation process has replication objectives and challenges. Interviews with the Global Experience Manager (who led the development of the experience business model across Europe) helped us identify three key steps: (1) the local experimentation (in one large city) of tourism innovations (experience prototypes) co-created by the community and Airbnb, (2) the local replication (in other large cities) of tourism experiences with the highest profitability potential and (3) the global replication of the tourism experience offer at the international level to automate value creation and capture. As Figure 1 shows, during the innovation process, these three steps of replication are taken to test the value capture potential of the business model innovation.

In the first step, which we call "community innovation and experimentation", the potential for creating and capturing value for the community is examined

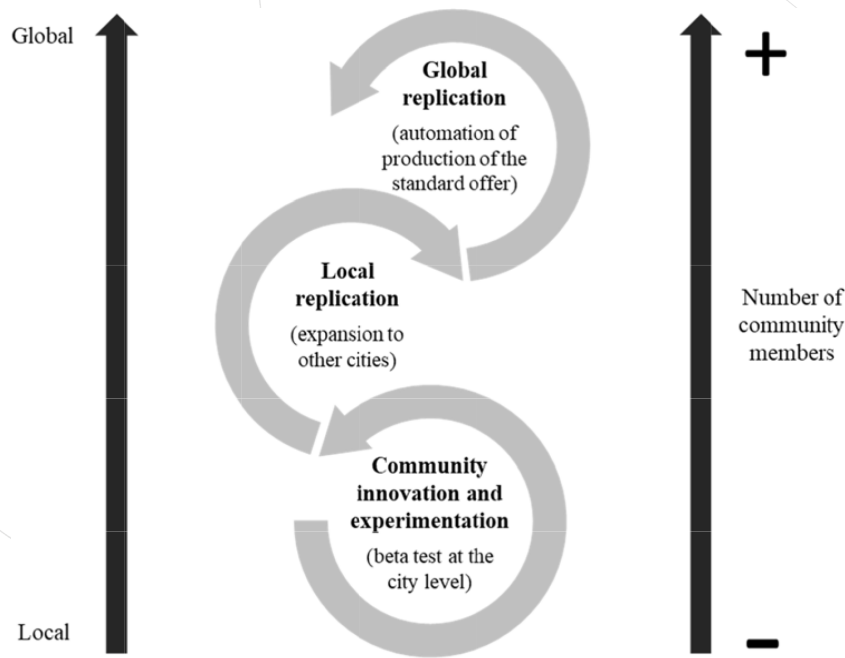


Figure 1: The business model innovation and replication processes

at the level of a single city. For replication, the aim is to identify the categories, formats and characteristics of the experiences that will interest the community and generate valuable transactions. At this phase of experimentation, the digital platform becomes a space for value creation because it provides toolkits for creating, valuing and delivering new tourism experiences and for managing associated bookings. The objective is to support hosts in creating autonomous value in line with Airbnb's quality requirements. As the Global Experience Manager detailed (translated from French):

*"The starting point is to experiment the market with prototype experiences. We need to see what works and what doesn't, so we have to listen to the market and learn by observing. In France, for example, we targeted Paris and worked with certain members of the community to co-create experiences by voluntarily positioning ourselves on a high-quality level because it's easier to go down in quality than up... What we are looking for 'hall success', the concepts of experiences that are most appealing and that bring in bookings, which is mandatory if we want to open up to other cities for scaling."*

During this step, the platform is also a space for dialogue, collaboration and regulation through the community management process, which is organized geographically. Our secondary data clearly shows that the Airbnb community is spread across multiple locations and the relationship with stakeholders takes place at different geographical levels, from the most local to the most global. This relationship is essential for Airbnb to stay close to the community, its needs and expectations, as well as for identifying opportunities for innovation and evolution. The business of tourism experiences has developed as a result of this form of monitoring, as the co-founders of Airbnb explain in their interviews. By observing that some hosts were offering experiences in addition to accommodation, Airbnb realized that this provided an opportunity for business model innovation. For example, the company found that some hosts were organizing meals to give travelers more value and some were offering sporting or cultural activities as a complement to the accommodation to encourage

travelers to book their stay. This idea of tourism experiences was therefore born from observation of the Airbnb community and initiatives that provide additional experiences to that of travel. The digital platform is therefore a space for exploration.

*"Airbnb, it's the community, it's the platform, it's our market space and our link with the users. Without the platform Airbnb does not exist. We use it as an observation and monitoring space, that's how the idea of the tourist experiences came about. We observed some hosts who offered activities in addition to their accommodation. We thought that there was a new possible business and a way to be innovative." (Global Experience Manager, translated from French)*

Our study of the Parisian R&D team shows that, to develop innovative tourism experiences, Airbnb has set up an educational support process to orchestrate the relationship with local franchisees (lead users) manually, whereby each innovation is assessed individually. A manual approach is required here because the innovation must be formalized before being offered and delivered on the platform. The result is a process of value co-creation. One example of this is the cultural experience offered in Paris where a Louvre Museum guide offers an amusing experience, combining a visit to the museum with stand-up comedy. Through collaboration with Airbnb, the user (Cedrik – the guide), realized that he could combine his work with his passion for stand-up comedy. The experiment was first prototyped and then tested several times to find the right formula (price, duration, content, etc.). For the past two years, the "Laugh your way through the Louvre" experience (which has been extended to "Laugh your way through the Musée d'Orsay") has attracted more than 4,000 visitors and more than 1,300 positive reviews. Building on this success, other concepts of amusing visits have been replicated in cities around the world.

*"When we prototype an experience with a user, we are in manual mode, the platform allows us to communicate but there is no automation of the process. This is normal because we have to check the consistency of the experience, if it is well positioned in our repository and judge its*

*commercial potential. Our objective is to validate the hall success. If we see that it doesn't work, then we work with the user to improve the characteristics of his experience, his concept, the price, etc. We work until the experience is fully validated." (Global Experience Manager, translated from French)*

A small, centralized team, which can act and react quickly according to local demand, is involved at the community experimentation step. The objectives here are to prototype new local value propositions with actors such as users and partners, and to validate their local consistency, attractiveness and market positioning. There is genuine human assistance in value creation and proposition. During this learning and experimental phase, attention is focused on identifying the potential for creating and capturing value for the community at the level of a single city.

In the second step, which we call "local replication", the potential for geographical replication of local offers in other territories is tested. This step allows new concepts of tourism experiences to be extended to other cities, with rapid incubation to test the market reaction. As the focus group shows, it is also a question of validating whether the same ecosystem of partners identified in the experimentation phase can be found in other cities to support the replication of successful experience concepts. The digital platform is crucial because it supports and orchestrates the replication process from the local level to the global level. As the Regional Community Manager explained (translated from French):

*"After the experimentation, we try to find out if a 'hall success' in one city can be extended to other cities. This is fundamental because the traveler must be able to find the same concept of experience everywhere in the world but still have something unique locally. So now we're opening up with the platform and looking for users in other cities ready to duplicate an experience that has worked well in Paris."*

This is the case with unusual experiences or visits to secret places in large cities. By observing the creation of these thematic experiments in the city

of Paris, Airbnb saw there was a demand there that could be replicated in other European cities. Thanks to its digital platform, this type of experience quickly spread to other capitals such as London, Amsterdam, Berlin and Brussels. The replication logic always starts at the local level before moving to the global level and has three key objectives: 1) searching for highly successful and potentially replicable elements of the offer; 2) searching for product-market fit and profitability on successful elements of the offer; and 3) searching for scalability. During this step, there is also manual assistance for value creation and proposition because the objective is to validate local adjustments (logistic, strategic, market, partners) to replicate (manual) value creation on a large scale. At this stage, attention is focused on the product-market fit. This process involves a larger team, which operates seven days a week in three eight-hour shifts.

*"The objective of phase 2 is to find the product market fit, i.e., the economic balance for each experience concept in order to set up the productivity of the offer. This is an important moment because you can see immediately which experiences can be replicated or not... Here we are still in manual mode to make adjustments locally, from a market, logistical and strategic point of view... The incubation period is deliberately short because the idea is to observe the reaction of the market and the guests." (Global Experience Manager, translated from French)*

In the third and final step, which we call "global replication", the objective is to validate the offer on a large scale. At this stage, the manual mode is switched to automatic mode. The objective here is to automate the value creation and proposition to empower users in the development of the tourism experience offer. At this point, the digital platform is no longer a tool for exploration but is a place for economically exploiting the offer. 'In this final process, the development teams turn to digital automation. As the European Business Manager highlighted (translated from French):

*"Once we have the product market fit, the objective is to scale up at the global level to achieve*

*optimal economic value creation. At this point, the offer is well established and is applied horizontally to several flagship cities in Europe. The idea here is to create as much value as possible to make the experience offer a dominant offer."*

A typical example is that of culinary or gastronomic experiences, such as arranging musical dinners and cooking classes, tasting local products and offering dinner cruises, etc. The search for success made it possible to match supply with demand and the search for product-market fit made it possible to check the economic model. It was during this exploration that the concept of the food tour emerged, offering a simple and highly replicable concept while remaining specific to local food and local food partners. In this example, Airbnb learned that the city was a place of thematic discovery where various experiential tours could be offered. This has made it possible to create wine tours, vegan tours, cultural tours, art tours, dinner boat tours, bar tours, etc. The digital platform thus acts as a digital incubator for change and replication at the same time.

*"For the final scaling stage, the platform does everything. We go into automatic mode and open the floodgates wide. The issue here is speed of execution. We are no longer necessarily involved in innovation but just in the diffusion of the offer on a global scale thanks to digital technology." (Global Experience Manager, translated from French)*

### **The role of the digital platform**

Our primary data show that the platform is the digital place which enables the replication capacity of innovation to be measured and tested. By standardizing the key elements of the different stages of the process (see Table 1), the platform enables innovation and replication to be articulated. In the first step, the role of the platform is to orchestrate the emergence of the innovation within the user community with a view to realizing its replication potential. To do this, the experience categories and their formats are standardized. The aim is to categorize the value proposition and to validate the revenue model of each experience. In the second step, the role of the platform is to test the geographical scalability from

one locally approved offer to other localizations. To do this, the technical, narrative, social and marketing characteristics of each type of experience are standardized. The aim is to validate the scalability of each experience. In the final step, the role of the platform is to digitalize the management of the global offer. To do this, the format of input interfaces for the forms to be completed giving the characteristics of each experience are standardized. The aim here is to automate the replication of experiences.

*"The platform becomes more powerful as we move through the process. Even if we start out in manual mode, we use the platform to communicate and frame the experimentation. Then, we increase our power to automate the community because the skeleton of the offer is validated, so we look for the product market fit. Then the platform takes over completely because the offer is in production, so we look for profitability." (European Business Manager, translated from French)*

In light of the secondary data that tracks the success of Airbnb and in particular the launch of the new tourism experience business model, we can see that Airbnb is thus able to standardize the value creation and value capture processes to promote large-scale replication. The digital platform is therefore the instrument of standardization. For example, the in-depth study of the process of creating a tourism experience on the Airbnb platform shows that the process is completely standardized and provides educational support for users to create an experience that meets Airbnb standards. Users must follow three steps in this process: 1) learn about Airbnb's experience expectations; 2) create the experience; and 3) submit the experience for review. In accepting this process, users must first complete a questionnaire that explains why they are interested in organizing an experience. Later in the first step, where the users learn about the company's expectations, Airbnb explains what the company expects from an experience, particularly the need to convey a passion and ensure that the traveler has a memorable experience. The users also learn about the kinds of experiences that are unacceptable to Airbnb. Examples include a simple service (e.g., transport), a banal activity or an impersonal approach involving many people (e.g., a cultural visit with 20 people). These tips are also



Table 2.

	Community innovation and experimentation	Local replication	Global replication
Role of the platform	Orchestrating emergence of the innovation within the user community with a view to realizing its replication potential. Standardization of experience categories and their format.	Testing the geographical scalability from one locally approved offer to other localizations. Standardization of the technical, narrative, social and marketing characteristics of each experience format.	Digitizing the management of the global offer. Standardization of input interfaces for the forms to be completed giving the characteristics of each experience.
Objective	Categorization of the value creation and validation of the value capture of the experience	Validation of the scalability of the experience	Automation of the replication of experience
Level of automation	Low (manual mode)	Medium	Full

Table 2: the role of the platform in the business model innovation and replication

included on the Airbnb blog and Citizen website. This learning phase enables Airbnb to disseminate its standards policy to the creators of experiences.

The second step gives users access to the online experience creation tool. This tool provides the users with educational support and enables them to define their idea by choosing a location (verification of the city's eligibility), a main theme (chosen from a standard list of themes, such as "cooking" or "sports and mountains") and a secondary theme (optional but also chosen from a list of standard themes). Once the idea is defined, users are again advised of what Airbnb looks for in terms of experience (depending on the chosen theme). The users then provide information about their main language (French, English, etc.), their target audience and the organizer's skills. At this point, the tool recommends that the users

consult documentary resources (for example, documents on "the three pillars of a quality experience" or "10 points to check for a better experience"<sup>2</sup>). Once they have created the experience, the users can view the layout and then enter the parameters of price, time, etc.

*"For the experiences, we have a pedagogical editor that allows the user to have advice on how to create his experience... We also have the photo editor to highlight the experiences."* (Regional Community Manager, translated from French)

The third step is to send the experience proposal to Airbnb for review. The objective of this is to

<sup>2</sup> Airbnb's documentary resources are available on the company's blog: <https://blog.airbnb.com/the-3-pillars-of-a-quality-experience-fr/>

standardize the quality of online experiences. Airbnb's positioning is deliberately top-of-the-range, and the description of the experience must reflect this quality. For example, in the event of poor-quality pictures, blurred descriptions or non-alignment with Airbnb's values, the experience must be improved, and users are invited to consult different documentary resources to help them improve the offer. At this stage, the focus group conducted with the partners shows that beyond the documentary resources, the local partner ecosystem is also a real support for the organization and feasibility of a tourist experience.

This fully automated process allows the tourism experience to be replicated on a large scale, which is corroborated by our secondary data addressing the issue of scalability. How the economic value from transactions is captured is also based on a single process that is formalized on the platform with standard rules (e.g., a service fee of 3% for hosts and 12% commission for each booking). In parallel with this standardization, which provides a common structure for the digital service, Airbnb makes its value proposition available to different users to generate a variety of local hostings and experiences in each city covered. The availability of digital content (narrative description, picture and evaluation) produces this variety using digital toolkits hosted on the digital platform (technology closure), thereby providing economies of scope. Airbnb's business model is thus replicated on a standardized basis with a common structure for the digital service (standardized interfaces, categories and digital tools), achieving scalability. Finally, these results show that the digital platform is an instrument for standardization.

*"We need to help users create the best experience possible, it is our job to help them do that. Our tool is the platform and all the tools we can provide to help them. Our strength is that a user anywhere in the world can find the same interface and the same standard offer." (Regional Community Manager, translated from French)*

## Discussion and Conclusion

Our research focused on business model replication and sought to understand how Airbnb was able to

sustain both the innovation and replication processes of its new offer of tourism experiences launched in 2017. Our results show that, with the role of the digital platform as a tool for standardizing, business model replication and business model innovation are intertwined.

First, our paper contributes to strengthening a bridge between the literature on replication and business model innovation (see Garcia-Castro et al., 2018) by going beyond the baseline debate about the replication dilemma and exploring how innovation and replication can be managed simultaneously (Winter and Szulanski, 2001). This bridge is enriched by the instrumental role of the digital platform, which shows once again the power of digital technologies in the development of sustainable digital business model, innovative and replicable on a large scale (Parmentier and Gandia, 2022). Indeed, we argue that the platform is a local space for exploring and adapting a new value proposition as well as a global marketplace for testing the scalability of the new value proposition at the global level. The articulation between innovation and replication is ensured by an iterative process of standardization from the local to the global level, which provides a common structure for the digital service (standardized interfaces, categories and digital tools) in order to achieve scalability. The Airbnb case suggests that digital platforms are not a simple market or social place (Gawer, 2014) but a tool for standardizing both the innovative and replication business model processes. The innovative side of the process is organized and conducted by the platform, particularly through experimentation. The objective is to refine the design of the value creation and value proposition for future replication, which confirms the key role of the digital platform to anticipate the scaling up in business model innovation (Chilova and Ringov, 2017; Rachinger, M., Rauter, R., Müller, C., Vorraher, W., & Schirgi, E, 2018). At this stage, local testing of the potential for business model replication makes it possible to define the standard extensions of the platform. Once the platform is extended with new standard elements, it then supports global business model replication.

Second, our results complement previous research on the Airbnb business model (especially Dogru, T.,

Mody, M., Suess, C., Line, N., & Bonn, M., 2020; Vinogradov, E., Leick, B., & Kivedal, B. K., 2020) by showing that part of the company's strategy lies in its ability to innovate and replicate its model simultaneously. By continuously exploring the local to improve exploitation of the global, Airbnb constantly challenges its business model in order to evolve it according to market demands and opportunities. This ambidexterity perspective (O'Reilly and Tushman, 2004) of the Airbnb business model enriches the research that shows how replication and innovation renews economic performance (Heij et al., 2014; Winter and Szulanski 2001). As well as being linked to its position in the sharing economy (Oskam and Boswijk, 2016) and to the level of trust that users place in the platform (Reinhold and Dolnicar, 2018), Airbnb's success is also linked to its ability to profit from the local diversity of accommodation and tourism experiences offered and then to replicate them at the global level as a standard offer. Thus, we extend the previous empirical studies on Airbnb (especially Cheng, M., and Jin, X., 2019; Dogru et al., 2020; Oskam and Boswijk, 2016; Reinhold and Dolnicar, 2018; Vinogradov et al., 2020) by providing a more-detailed understanding of the explanatory factors of its success.

Our research makes a third more specific contribution to the replication literature (Szulanski and Jensen 2008; Winter and Szulanski 2001; Winter et al., 2012) by enriching the debate about the adaptation perspective, which advocates that new business models must incorporate replication of the local characteristics of new host environments (Chilova and Ringov, 2017). This finding reinforces the observation that digital technologies facilitate replication by minimizing local constraints in a national and international expansion (Tippmann et al., 2022). Indeed, our analysis shows that the Airbnb platform enables the business model to be replicated on a standardized basis while benefiting from access to local diversity. Each new location that Airbnb covers can bring opportunities for innovation (new types of accommodation or types of tourism experiences) without being subjected to local specificities as constraints. The digital platform is therefore an instrument for business model standardization (see Baden-Fuller and Winter, 2008) because it provides a normalized framework with routine processes and standard tools for value creation, delivery

and capture. The digital platform plays the role of an incubator for change by connecting the local with the global and become strategic to solve the tension replication-adaptation (Reuber et al., 2021), which is particularly strong in a context of internationalization (Chilova and Ringov, 2017).

### Implications for practitioners

Our research makes a key recommendation for actors such as entrepreneurs in the tourism and hospitality industry who would like to develop and replicate their business model using a digital platform. In line with the Airbnb case (which illustrates a community digital service business model), it is essential to routinize access to digital content because it allows users to engage in value-creating behavior which produces a part of the service. The business model must therefore be technically structured, with a digital platform that provides a space for exploring and exploiting the service. To profit from effective replication, managers must consider how to standardize their offer in terms of value creation and delivery. As a result of causality, the more standard and replicable the offer is, the greater will be the potential for value capture, especially economically. It is therefore necessary to think about the processes, interfaces, tools and documentation which will make it possible to educate and support users in creating value. This standardized environment is an effective way to give users creative autonomy while controlling what they produce. In providing support, it is essential to make users aware of the company's values and the expected level of quality. Indeed, standardization of the offer implies overall homogeneity in terms of the value delivered. If users participate in value creation, they must reinforce this homogeneity without distorting it. The company must therefore communicate its expectations transparently (what is acceptable and what is not) to provide educational guidance to users. Finally, it is necessary to sequence the replication process from the most local/specific to the most global/general. Airbnb's three key objectives (high level of success, product-market fit and scalability) demonstrate this. The idea is to objectify the replication process to reduce the risks at each phase by identifying high value-added elements that can be replicated on a large scale.

### Limitations and future work

Beyond the methodological and conceptual limitations of our study, there are several avenues for research that could be explored.

First, it would be interesting to go beyond the limits of our unique case study to analyze other cases of business model replication through digital platforms. The digital economy is rich in examples that could improve our understanding of the interaction between the business model and the digital platform. Similarly, specific economies, such as the social and solidarity economy or the circular economy, could provide interesting cases for examining the issue of business model replication from a different point of view. Second, as the Airbnb business model is focused on digital service, other types of business models – such as a product sales business model, a business model based on a local ecosystem, a traditional service business model or an associative business model – should be studied from a digital replication perspective. Our study did not explore the role of network effects in the business model

replication process through a digital platform, nor did it incorporate an organizational approach from the perspective of ambidexterity or even open innovation. Additional studies of these issues would provide a better understanding of the concrete organization of the business model replication process inside and outside the company.

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## Appendix 1: Secondary Data

Type	Secondary data
Press articles	<p>Alexander, J. (2016), How Airbnb is reshaping our cities, <b>The Conversation</b>, September 2016.</p> <p>Barron, K., Kung, E., Proserpio, D. (2019), Research: When Airbnb Listings in a City Increase, So Do Rent Prices, <b>Harvard Business Review</b>, April 2019.</p> <p>Benner, K. (2016), Airbnb Broadens Its Business with Tours and Travel Experiences, <b>The New York Times</b>, November 2016.</p> <p>Bensinger, G. (2016), Airbnb Starts “Trips” Service to Book Experiences and Tours, <b>The Wall Street Journal</b>, November 2016.</p> <p>Chowdhry, A. (2014), Airbnb Is Testing Out An “Experiences” Feature, <b>Forbes</b>, May 2014.</p> <p>Gallagher, L. (2017), Airbnb CEO: Here’s How “Experiences” Are Doing So Far, <b>Fortune</b>, October 2017.</p> <p>Geron, T. (2013), Airbnb and The Unstoppable Rise of the Share Economy, <b>Forbes</b>, January 2013.</p> <p>Glusac, E. (2020), The Future of Airbnb, <b>The New York Times</b>, September 2020.</p> <p>Harford, T. (2016), The Meaning of Trust in the Age of Airbnb, <b>Undercover Economist</b>, August 2016.</p> <p>Higgins-Desbiolles, F. (2019), Rethinking Tourism so the Locals Actually Benefit from Hosting Visitors, <b>The Conversation</b>, May 2019.</p> <p>Kirkovska, A. (2016), Airbnb Experiences: Expanding the Business, or Trying to Survive, <b>Medium</b>, November 2016.</p> <p>Leist, A. (2016), Airbnb: Disruptive Innovation in the Tourism Industry, <b>Fox School of Business</b>, October 2018.</p> <p>Ma, F. (2018), Disruptive Innovation: A Case Study of AirBnB, <b>Medium</b>, September 2018.</p> <p>Mody, M., Gomez, M. (2018), Airbnb and the Hotel Industry: The Past, Present, and Future of Sales, Marketing, Branding, and Revenue Management, <b>Boston Hospitality Review</b>, October 2018.</p> <p>O’Regan, M. (2017), Airbnb Isn’t Killing the Hotel Industry; a Lack of Innovation and Creativity Is, <b>Swansea University</b>, October 2017.</p> <p>Rouke, P. (2016), Airbnb: How Its Customer Experience is Revolutionising the Travel Industry, <b>Econsultancy</b>, October 2016.</p> <p>Silver, J. (2018), Airbnb and the Short-term Rental Revolution – How English Cities Are Suffering, <b>The Conversation</b>, August 2018.</p> <p>Somerville, H. (2018), Airbnb’s “Experiences” Business on Track for 1 Million Bookings, Profitability, <b>Reuters</b>, February 2018.</p> <p>Ting, D. (2019), How Airbnb Profits from Our Love of Experience, <b>Eater</b>, December 2019.</p> <p>Ward, L. (2017), How Airbnb Affects Home Prices and Rents, <b>The Wall Street Journal</b>, October 2017.</p> <p>Wayne, S. (2016), Airbnb’s Impact on Travel and Accommodations is Wide and Far, <b>Hotel Management Review</b>, June 2016.</p> <p>Wortham, J. (2010), Airbnb Raises Cash to Expand Budget-Travel Service, <b>The New York Times</b>, November 2010.</p>



Type	Secondary data
Video	<p>Airbnb: Earning Money in the Sharing Economy, <b>Youtube video</b>, 2013, available on: <a href="https://www.youtube.com/watch?v=LWD-l5qPCfw">https://www.youtube.com/watch?v=LWD-l5qPCfw</a></p> <p>Airbnb's Joe Gebbia: "Do Things That Don't Scale", <b>Youtube video</b>, 2015, available on: <a href="https://www.youtube.com/watch?v=2hESOWxPrSU">https://www.youtube.com/watch?v=2hESOWxPrSU</a></p> <p>Brian Chesky on Launching Airbnb and the Challenges of Scale, <b>Youtube video</b>, 2015, available on: <a href="https://www.youtube.com/watch?v=W608u6sBFpo">https://www.youtube.com/watch?v=W608u6sBFpo</a></p> <p>How Airbnb designs for trust   Joe Gebbia, <b>Youtube video</b>, 2016, available on: <a href="https://www.youtube.com/watch?v=16cM-RFid9U&amp;t=357s">https://www.youtube.com/watch?v=16cM-RFid9U&amp;t=357s</a></p> <p>Brian Chesky Launches Trips   Airbnb Open 2016   Airbnb, <b>Youtube video</b>, 2016, available on: <a href="https://www.youtube.com/watch?v=efNyRmTLbjQ&amp;t=2s">https://www.youtube.com/watch?v=efNyRmTLbjQ&amp;t=2s</a></p> <p>Strategies for Entrepreneurs   Airbnb Open 2016, <b>Youtube video</b>, 2016, available on: <a href="https://www.youtube.com/watch?v=z6vTaiPI6tA">https://www.youtube.com/watch?v=z6vTaiPI6tA</a></p> <p>The Real Story about how Airbnb Was Founded - Nathan Blecharczyk Co-founder Airbnb - Startup Success, <b>Youtube video</b>, 2016, available on: <a href="https://www.youtube.com/watch?v=M6GBqqk2mY4&amp;t=639s">https://www.youtube.com/watch?v=M6GBqqk2mY4&amp;t=639s</a></p> <p>Interview With Airbnb CEO Brian Chesky   Fortune, <b>Youtube video</b>, 2017, available on: <a href="https://www.youtube.com/watch?v=GFMeuSIhIYg&amp;t=397s">https://www.youtube.com/watch?v=GFMeuSIhIYg&amp;t=397s</a></p> <p>Scaling Product   Fireside with Joe Gebbia and Reid Hoffman, 2017, <b>Youtube video</b>, available on: <a href="https://www.youtube.com/watch?v=TCA_7RVo7Uo">https://www.youtube.com/watch?v=TCA_7RVo7Uo</a></p> <p>Joe Gebbia Interview, <b>Youtube video</b>, 2018, available on: <a href="https://www.youtube.com/watch?v=Xao9DJEpk8l">https://www.youtube.com/watch?v=Xao9DJEpk8l</a></p>
Book	<p>Gallagher, L. (2017), <i>The Airbnb Story: How Three Ordinary Guys Disrupted an Industry, Made Billions . . . and Created Plenty of Controversy</i>, Houghton Mifflin Harcourt, 258 p.</p>
Web	<p>News Airbnb, <a href="https://news.airbnb.com">https://news.airbnb.com</a></p> <p>Blog Airbnb, <a href="https://blog.airbnb.com">https://blog.airbnb.com</a></p> <p>Airbnb Citizen, <a href="https://www.airbnbcitizen.com">https://www.airbnbcitizen.com</a></p>

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# JOURNAL OF BUSINESS MODELS

## The impact of exogenous shocks on business models and business relationships: An empirical analysis of the Italian music industry

Luigi Nasta<sup>1</sup>, Luca Pirolo<sup>2</sup>, Adriano Di Fabio<sup>3</sup>

### Abstract

**Purpose:** Scholars have been increasingly interested in understanding business models. However, little attention has been paid to how business models change in reaction to exogenous circumstances and how business relationships alter because of business model changes. This paper investigates how the business model paradigm of the Italian music industry altered in response to two major exogenous influences that impacted the sector: the digital revolution and the COVID-19 pandemic.

**Design/methodology/approach:** As the purpose of this study is to investigate phenomena in a real-world setting, qualitative research methodology has been selected as the most appropriate one. It was decided to conduct sixteen semi-structured interviews with professionals active in the Italian music business, selected through a combination of snowball and convenience sampling.

**Findings:** The empirical findings indicate that the digital revolution and COVID-19 pushed Italian music companies to revise their business models by either reducing or adding the number of linkages to the existing ones. This was done in order for the companies to remain competitive in an environment that is constantly changing and to outcompete rivals.

**Originality/value:** Few studies have evaluated how business relationships alter in response to the many business models emerging in the music industry due to external causes. This research is one of the first to examine music companies' reactions to exogenous events such as crises or disruptive advances that affect the competitive landscape.

Keywords: music industry, business model, business relationships, covid-19, digital revolution

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## Introduction

The business model concept seeks to comprehend how to produce and deliver value for customers while simultaneously producing value for the organization (Osterwalder, 2004). In other words, business models facilitate the transformation of strategic decisions made by the management team into operational activities.

In recent years, the business model concept has progressively gained the interest of experts and executives due to its rising significance in navigating dynamic and ever-changing contexts. Consequently, the business model is viewed not only as the instrument to design value production and distribution processes, but also as the means to plan and implement adaptation strategies. As a result, it has been utilized to assess firms' responses to competitors' strategies or to modify product attributes in response to shifting market preferences or consumer behaviours (Teece, 2010).

Few studies also used this conceptual model to evaluate company behaviours in response to external shocks that modify the competitive environment. Corbo, Pirolo and Rodrigues (2018), for example, investigated how the business model paradigm of the Portuguese footwear industry changed following China's entry into the World Trade Organization in 2001, discovering that the shock acted as a trigger to the adoption of new business models by the industry's companies. Similarly, Guckenbiehl and Corral de Zubielqui (2022) examined how 32 start-ups in Australia reacted to the second wave of Covid-19, discovering that most of them adjusted their business models to capitalize on Covid-induced possibilities and mitigate Covid-induced threats. Soluk, Kammerlander and Massis (2021) investigated behavioural changes and digital technologies in a sample of German family businesses to determine how they reacted to Covid-19.

To our knowledge, few studies have attempted to adapt this conceptual framework to the setting of the creative and cultural industries, which have been among the most dynamic in recent years. It is relevant to study business model adaptation to exogenous

shocks in this context because creative industries are often particularly vulnerable to external shocks. These industries, which include fields such as film, music, publishing, and design, are often characterized by high levels of uncertainty, rapid technological change, and shifting consumer preferences. Many creative industries, for instance, struggled to adapt to the sudden shift to remote work, the cancellation of live events, and changes in consumer behaviour because of the COVID-19 outbreak. For this reason, it is important to comprehend how creative industry firms can adapt their business models in response to exogenous shocks to maintain long-term competitiveness. In addition, creative industries frequently operate in highly interconnected ecosystems where numerous small and medium-sized businesses collaborate to develop and distribute creative goods and services. Due to this interconnectivity, it could be challenging for these companies to modify their business models independently. This highlights the significance of grasping how collaborations across the industry can assist in lessening the effects of external turmoil. In addition, creative industries are characterized by an elevated degree of novelty and exploration, prompting numerous businesses to delve into new business models as a way to yield fresh revenue streams. Comprehending how these companies alter their business models in the wake of external shocks might provide insight into how businesses in diverse sectors may respond to disruptions and alterations.

This paper's aim is to enhance comprehension of business model adjustment within the context of cultural and creative industries. It does so by spotlighting one of the most fluid industries – music – and adopting an industry perspective that places business relationships at the heart of the examination. The music industry represents the ideal setting for the purpose of this study because it has been recently shaken and affected by two main exogenous factors, namely the digital revolution and the spread of the COVID-19 pandemic. Nevertheless, according to the IFPI Global Music Report (2021), the total value of the music market grew up to \$21.6 billion, compared to \$20.2 billion in 2019. This market's growth is attributed to premium subscription revenues, which increased by 18.5 percent as a result of streaming. In fact, during the post-pandemic stage, the gain in revenue from streaming

more than compensated for the declines in revenue from other formats, including the physical segment (down 4.7 percent) and related rights revenues (down 10.1 percent). Thus, the music industry is slowly recovering from the difficult downturn of recent years. The significant shift to digital products completely disrupted the market, and digital sales grew significantly, even though the popular physical formats such as CDs, LPs, and cassette tapes still represent a significant portion of the market. At the same time, niche products, like vinyl, continue to grow. As a general trend, the music market is generating new business models that allow both old and new players to refresh their offerings and differentiate their activities. This leads to the exploitation of new potential partnerships within the industry to generate a larger audience and new channels. Additionally, the digital music offering contributes to the emergence of new actors (Graham, Burnes, Lewis and Langer, 2004; Small, 2012). Despite previous research discussing the various types of business models available in the music industry (Buhse and Wetzell, 2003; Koster, 2008; Vaccaro and Cohn, 2004), few studies have examined how these business models changed in response to the digital revolution and the spread of COVID-19, as well as how business relationships evolve in relation to the various types of business models that are emerging in this sector due to exogenous factors.

The paper aims at investigating the following objectives: i) identifying the business models used by music companies and ii) understanding the business relationships they form within the industry value chain. To achieve the objectives of this study, the following research questions are posed:

RQ 1: Do exogenous factors influence how actors behave along the music industry value chain?

RQ 2: Do exogenous factors affect the types of business models that are employed by music firms?

RQ 3: Considering the changes in business models, do exogenous factors contribute to the emergence of new business relationships?

The findings reveal that the COVID-19, as well as the

digital revolution, have had an impact on how music companies work along the industry value chain. They typically employ several business model types based on the activity conducted along the industry value chain, however owing to exogenous shocks affecting the sector, they were eager to experiment with new business models. As a result of these external events, firms in the music industry propose new solutions, such as the introduction of unique business models that vary the number of players involved in the realization of creative works, in order to both adapt to the changing external environment and outcompete rivals.

This research adds an unexplored dimension to the field of business model adaption research: business relationships between players. In the music sector, actions at one step of the industry value chain must account for what is done before and after. Business relationships are critical to the success of a music product, but they must adapt to changes in business models produced by exogenous causes. The study is particularly useful for practitioners since it explains how to rethink a business model in the face of new possibilities and threats. Furthermore, this study encourages music professionals to explore outside their borders by emphasizing the need of interacting with other companies in the industry that can aid maximize final performance.

## Theoretical Framework

### Dynamic business relationships and business model adaptation

In recent years, the business model concept has gained significant popularity and has become a common topic of management research. Despite the abundance of studies on business models, there is still no agreement over their definition. Timmers (1998) proposed one of the earliest definitions of the term business model as “an architecture for the product, service, and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; and a description of the sources of revenues” (p. 2). Later definitions focused mostly on identifying the business model’s components. For instance, Osterwalder and Pigneur (2010)

suggest that a business model can be described as a canvas consisting of several basic building blocks that demonstrate how a company aims to generate revenue, including consumers, products, infrastructure, and financial sustainability. In a similar way, Johnson, Christensen and Kagermann (2008) describe four elements of a business model (customer value proposition, profit formula, key resources, and key procedures) that, when combined, produce and deliver value to customers.

Choosing the term that best suits the empirical situation in which a business model is studied is one method to solve the conundrum of which definition should be selected. For instance, a more refined differentiation might be formed by selecting the business model components to assess based on industry characteristics. For example, in a study of airline business models' components were discovered beginning with Osterwalder's business model conceptualization and picking among the nine components established by this author the ones that best reflect an airline business model (Osterwalder, 2004). This approach resulted in the selection and, in some cases, rebranding of the six most appropriate components, including the value proposition, revenue streams, network, distribution channels, fleet structure, and alliances (Corbo, 2017). Consequently, a context-specific definition of a business model offers to provide a more accurate identification of which aspects or components should be addressed in the analysis of each single circumstance.

In this study, adherence is given to the concept of business model established by Zott and Amit (2010), who defined business models as the form, substance, and governance of transactions from a relational perspective. As stated by the authors, in formulating a business model, it's crucial to acknowledge the potential advantages for the entire network, to leverage collaborative opportunities and share key benefits. This demands a comprehension of the fluctuating nature of business relationships, which could significantly affect a firm's capacity to modify its business model. These relationships can involve ties with suppliers, customers, partners, and even competitors, and can evolve due to shifts in

market conditions, consumer behaviour alterations, or novel technological advancements (Ford, Gadde, Hakansson and Snehota 2011). To preserve their competitive position, firms might need to adjust their business models in response to these changes. For instance, if a company's supplier increases prices or encounters production challenges, the company may need to explore alternative suppliers or revise its pricing approach to maintain profitability. Similarly, changes in customer demand may require a company to shift its product offerings or marketing approach to remain relevant. In some industries, collaboration with external partners is crucial to developing new products and services. It is therefore important to determine the intricate connections and positions of each participant to comprehend innovation capability (Breuer and Lüdeke-Freund, 2017; Mäkimattila, Saunila and Salminen, 2014).

Partnerships can also lead to the development of new business models in various industries, such as music. For instance, a trustworthy partner can persuade businesses to enter a two-way contract, while a business model might be established around obtaining license fees through agreements with third-party brokers for copyright to the media sector. Additionally, business models based on close interactions between artists and consumers, or radio and television stations can be formed (Dellyana, Simatupang and Dhewanto, 2017).

Overall, the dynamic nature of business relationships highlights the importance of adapting business models to changing market conditions and collaborating with external partners to drive innovation and growth. By considering the benefits for the entire network, companies can leverage collaboration opportunities and share fundamental advantages to create value for customers and stay ahead of the competition.

### **Business model adaption to exogenous factors**

Over time, research on business models has shifted from the study of the concept a certain moment in time to how business models evolve, transform, and reconfigure themselves across time. While this emerging stream of research has primarily focused

on business model innovation, other terminology such as “evolution,” “reconfiguration,” and “adaptation” have begun to appear (Demil and Lecocq, 2010; Massa and Tucci, 2013; Saebi, Lien and Foss, 2017). This article emphasizes how business models evolve in reaction to an external stimulus. These alterations are termed business model adaptation, which refers to the process wherein businesses adjust their strategies to accommodate a shifting environment.

Adjusting business models to respond to exogenous shocks has gained considerable importance in the current fast-moving business climate. In light of technological disruption, global competition, and geopolitical instability, companies need to be capable of modifying their business models to stay afloat and flourish. Exogenous shocks are uncontrollable external events, like economic downturns, natural disasters, or abrupt changes in government policies, and these can considerably impact businesses, often causing reductions in revenue, profits, and market share. To tackle these shocks, companies need to promptly adapt their business models to the evolving environment.

Literature widely acknowledges that companies respond to external influences by modifying or reconfiguring their strategies and procedures. Concerning business model adaptation in reaction to external influences, previous studies have explored how business models adjust to alterations in the competitive environment and the introduction of new technologies (Reuver, Bouwmann and MacInnes, 2009; Wirtz et al., 2010). Other research has established a connection between changes in company structures and exceptional events or shocks. For example, in the aftermath of the 2008 financial crisis, Saebi et al. (2017), using a large sample of Norwegian enterprises from a variety of industries, explored how managers adopted modifications to their business models, such as increasing sales efforts to new consumer categories. Similarly, Bogers, Boyd and Hollensen (2015) examined the business model evolution of a single airline firm as the way to cope with the environmental uncertainty and resource dependence, adopting a qualitative methodology.

Despite some examples, there is a need for additional

research in this field due to the scarcity of studies relating business model adaption to exogenous factors. In fact, this topic is of the utmost significance, since failure to change business models in a timely manner can lead to decreased profits and, in extreme circumstances, a lack of acceptance by the market. Thus, the potential to investigate how and if new business model paradigms evolve in response to exogenous events is an intriguing one. Previous research has demonstrated that disruptive changes, such as exogenous shocks, destabilize equilibria, allowing for the emergence of unique, random, or purposeful organizational mutations (Haveman, Russo and Meyer, 2001). Subsequent periods of change endure until a dominating design emerges. This punctuated-equilibrium perspective examines firm evolution as consisting of two distinct and recurring phases: 1) long periods of quasi-equilibrium, during which firms make small changes in structure and activities, and 2) brief periods of disequilibrium, during which significant changes can occur (Haveman et al., 2001; Tuschman and Anderson, 2018). Considering these theoretical advancements, it is hypothesized that business model adaptation could lead to the emergence of a new and shared dominant business model paradigm after a shock.

### **Business model adaption in the music industry**

In the context of the music industry, business model adaptation could involve changes in how artists are discovered, how music is distributed, how revenue is generated, or how music is consumed. This necessitates the description of the music industry value chain (refer to figure 1) which represents the various stages that a piece of music undergoes before reaching its intended audience. The music industry value chain encompasses the following stages: creation, reproduction, distribution, and consumption (Wikstrom, 2020).

The creation stage is where music is composed, recorded, and produced. This stage involves artists, songwriters, producers, engineers, and other professionals who collaborate to create original music (Kuseh and Taylor, 2004). There are many other participants who are not directly involved in the creation, but they somehow contribute to the development of the creative process, such as recording

studio owners or artist managers. In particular, the latter is the individual who coordinates all the activities of the artist. For this reason, the artist manager is the connecting element between the creative and the final phases of the music industry value chain, as he/she oversees everything pertaining to the artist, which later develops and branches out to all the other actors involved in the industry value chain (Dowd, 2013). This creation process necessitates music education to produce skilled musicians and other creative individuals (Rodriguez, 2018). As a result, also institutions, organizations, and schools at different levels that provide music courses can be considered as part of this stage of the music industry value chain.

Once the music is created, it needs to be reproduced so that it can be distributed and consumed. This involves converting the original recording into various formats, such as CDs, digital downloads, and streaming files. The primary participants in the reproduction process are the record labels and music publishers. Record labels are usually distinguished between independent and major ones with the former being more complex organizations but more powerful into the market. With reference to the music publishers, they are responsible for the collection and administration of royalties received from the musical works and for the publication of sheet music. It is possible to consider the music publisher

as the intermediary between the most creative part of the music industry value chain and the business side of the industry. The music publisher usually interacts with other organizations by developing B2B (business-to-business) relationships, for example with radio and TV stations and other companies for B2B purposes (Dowd, 2016).

The distribution stage involves getting the music to market and making it available for purchase or consumption. This stage involves distributors, retailers, and streaming services who work to get the music in front of audiences.

Finally, the consumption stage is where music is enjoyed by listeners. This can include live performances, radio airplay, physical or digital sales, and streaming. This stage involves music fans who purchase, listen to, and share the music with others.

As any other industry, the music one is highly affected by exogenous factors that might have a significant impact on the business models employed in the industry. Allan and Powell (2015), for example, examined how changes in technology have impacted the music industry's traditional business models. The authors suggest that platforms have transformed music consumption, enabling users to stream or download music as per their preference. This transition from physical sales has significantly

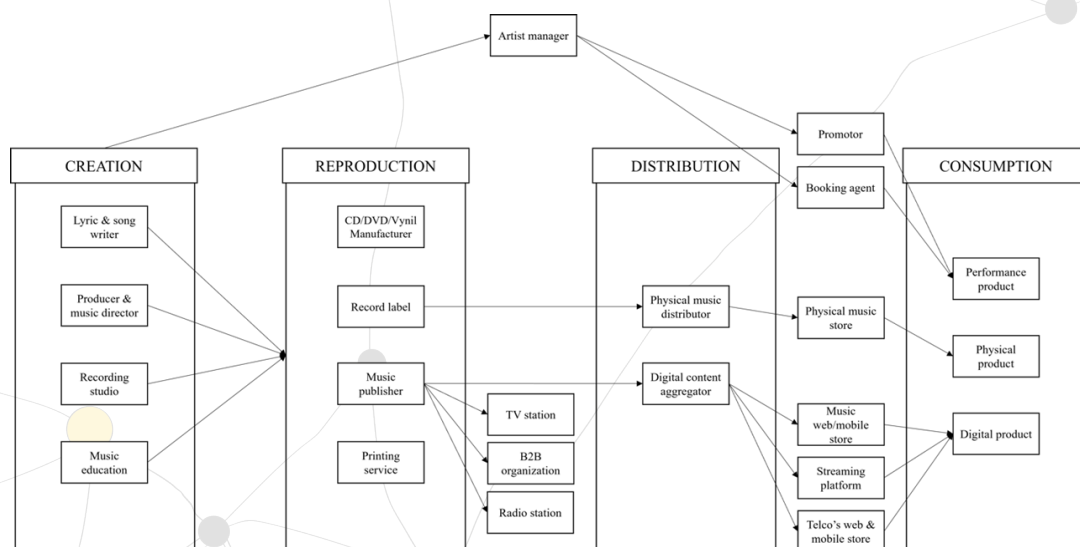


Figure 1: Actors of the music industry value chain in the post-pandemic and post-digital revolution age



impacted the industry's revenue streams and necessitated record labels and artists to adapt to novel business models. Wyer and Wu (2009) propose that the music industry is a multifaceted and dynamic market influenced by numerous economic factors, including inflation, consumer purchasing power, and technological changes. Specifically, they discuss the impact of inflation on the music industry. They advocate for companies in the music industry to remain vigilant of inflationary pressures and adjust their pricing strategies accordingly to sustain profitability. Tschmuck (2013) emphasizes the need for music industry companies to respond to evolving consumer preferences and demographic shifts to ensure success. He highlights the increased music consumption among older consumers due to the growing popularity of streaming services, leading to new opportunities for artists and record labels to engage older audiences.

In conclusion, exogenous factors significantly influence the business models used in the music industry. Companies capable of adjusting to these external factors and innovating new business models will be better positioned to prosper in the rapidly evolving music industry.

## Methodology

### Interview method

As the purpose of this study is to investigate phenomena in a real-world setting, qualitative research methodology has been selected as the most appropriate one (Yin, 2009). This methodology facilitates a more comprehensive exploration of the perspectives, actions, and incentives of the participants, thereby enhancing the comprehension of the underlying causes of specific phenomena. Moreover, this approach facilitates flexibility, enabling the investigation of novel themes and patterns that may surface during the research process, which may not be feasible with a more rigid, quantitative methodology.

The decision was made to conduct semi-structured interviews, as they are typically preferred for promoting two-way communication, confirming existing facts, and providing opportunities for acquiring new information. In addition, with this methodology,

it is possible to broaden the horizons by utilizing the interviewee's experiences to relate new perspectives pertinent to their problems of interest (Wahyuni, 2012). The semi-structured interview has aspects of both structured and unstructured interviews. A predefined series of sequential questions is employed as an interview guide, with the flexibility to include additional questions for deeper examination of themes raised by the interviewee, resembling a guided discussion. Both the deductive and inductive approaches were utilized, wherein predetermined concepts from the literature review analysis served as a starting point, while new or emergent themes in the interview data were also explored.

Aside from attempting to acquire as much information on the examined phenomena as possible, the interviewer's responsibility is to put the interviewee at ease, building empathy while keeping control of the discussion (Brewerton and Millward, 2001). Finally, through the conduction of semi-structured interviews, a more dynamic perspective was adopted on the selected topics, namely the evolution and re-configuration of business model types in the music industry and business relationships in the post-pandemic and post-digital revolution age.

### Data sources

This study examines the Italian music industry. Despite its modest size, Italy is a significant contributor to the global music business. Indeed, according to the IFPI Global Report (2021) in 2020, Italy is the region's fifth largest market and one of the countries most affected by the COVID-19 pandemic. Moreover, it experienced double-digit growth in streaming (29.5%), paid subscription (29.8%), and ad-supported (31.6%) formats. These figures produced by Deloitte (2021) for the Italian music industry organization FIMI, show that vinyl record sales exceeded CD sales in Italy in the first quarter of 2021 for the first time since 1991. It was reported that record sales revenues increased by 121 percent compared to the first quarter of 2020, surpassing CD sales revenues, which decreased by 6 percent. Currently, approximately 11 percent of the Italian music industry's revenue comes from vinyl albums, while streaming sales account for 80 percent. This implies that the Italian music industry follows the same trends as the worldwide music industry.

Table 1

Respondent N	Interviewee	Duration
1	Founder of an Italian independent record label	40 minutes
2	Marketing and international repertoire of a major label	135 minutes
3	Marketing and international repertoire of a major label	110 minutes
4	Marketing and international repertoire of a major label	90 minutes
5	Senior executive of an Italian digital distributor	110 minutes
6	Senior executive of an Italian digital distributor	120 minutes
7	Senior executive of an Italian digital distributor	80 minutes
8	Booking agent	90 minutes
9	Booking agent	45 minutes
10	Artist manager	60 minutes
11	Artist manager	50 minutes
12	Artist manager	70 minutes
13	Speaker of a national Italian radio	45 minutes
14	Speaker of a national Italian radio	40 minutes
15	Manager of the Italian service company	60 minutes
16	Manager of the Italian service company	50 minutes

Table 1: Interviews

The choice to focus on the Italian setting relies on the fact that this sector is vital to the national economy: it is, indeed, one of the leading creative industries in Italy and it is ranked 10th at a global level (Hatton, 2021). Second, a significant portion of the Italian music market's sales are generated by Italian songs. This explains why the domestic music market is so appreciative of Italian music and could provide opportunities for the sector's ongoing evolution. The strong investments made by companies in the local repertoire characterize Italian productions, which is also confirmed by the dominance of Italian artists in the end-of-year rankings, with the top ten albums and singles entirely occupied by domestic productions. Finally, despite this domestic approach characterizing Italian music consumer behaviour, the recognition of Italian music worldwide is a fact. Growth at the national level leads to an increased worldwide success for Italian music. 2021 was particularly significant for the export of Italian music with a 66 percent increase in royalties' income for the Italian record industry on the international scale. The success of the Italian band Maneskin, which hit the global charts in 2021, is an example of this path.

To trace a wide depiction of the industry value chain, interviews were conducted with sixteen established members of the industry. Respondents have been chosen among professionals active in the music business (i.e., generate a major amount of their income from music) and work for Italian companies or divisions to be eligible for the interviews. They were selected by a combination of snowball and convenience sampling (Parker, Scott and Geddes, 2019). As shown in table 1, the interviewees are: 1) a founder of an Italian independent record label, 2) three marketing and international repertoire executives of different major record labels, 3) three senior executives working for different digital distributors, 4) two booking agents of music event companies, 5) three artists' managers, 6) two speakers of national Italian radio stations, 7) two senior managers of an Italian music service company specialized in promoting, financing, and international relationships.

### Data analysis

Each interview was conducted using Google Meet, and after obtaining permission from the

respondents, they were recorded so that the information could be accessed later. A protocol for the interviews was developed and implemented to guide each step of this research and guarantee the collection of relevant data regarding the proposed conceptual model and associated research questions.

The interview protocol analysis focuses primarily on the types of business models in the music industry and the business relationships developed in the sector after the digital revolution and the COVID-19 pandemic. For the business model types topic, respondents were asked about the organization's current and future business models. In addition, they were questioned regarding new and/or potential business models arising in the industry. For the second topic, the new business relationships among music firms, respondents were asked exploratory questions about the actors who are currently employed by their company as well as those who have potential but are not yet engaged.

The shortest interview lasted approximately forty minutes, while the longest interview lasted over two hours. The interviews took place from January to June 2021. Aligned with the semi-structured approach, although a protocol for the interview was provided, questions were occasionally altered to elicit more insightful responses.

The interview was manually transcribed into text data, allowing for the examination of topics raised during the interviews and their alignment with the study questions. To ensure process validity and minimize subjectivity (Kvale, 1996), the transcribed interviews were maintained as close to their original raw form as possible. This approach strikes a balance between accuracy and clarity. The analysis primarily involves discussing theoretical propositions supported by quotes from the interviewees, followed by interpretations of the quotes in relation to the study's propositions and theoretical framework. This methodology aligns with the recommendations of Easterby-Smith, Golden-Biddle and Locke (2008) for interpreting qualitative data interviews.

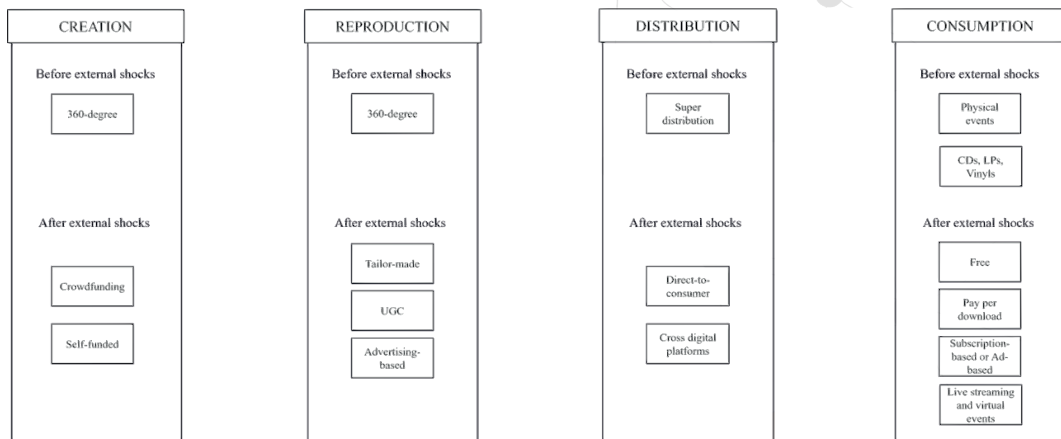


Figure 2. Business model types in the music industry value chain in the post-pandemic and post-digital revolution age

## Findings

The section that follows addresses the article's research questions by examining the various stages of the music industry value chain: RQ 1 focuses on how external shocks affected the actors of the music industry value chain; RQ 2 investigates how the business models of those players altered as a result of the external shocks (see figure 2); RQ 3 explores the changes in business relationships among actors as a result of business model adaptation to exogenous shocks.

### The creation stage

With reference to the RQ 1, COVID-19 had a strong impact on several actors operating in the creation phase. For instance, it significantly restricted musicians' ability to collaborate during rehearsals and ensemble performances and necessitated drastic changes in collaborative methods. As the interviewee n° 10 reported,

"during the period of lockdown and social alienation, locations for music production (e.g., rehearsal rooms, recording studios) and consumption (e.g., concert halls, nightclubs) have suddenly become inappropriate for their intended purposes. The community of professional and semi-professional music-makers such as performers, songwriters, composers, arrangers, producers, and engineers have improved their usage of technology or incorporated new technical elements into their online creative and collaborative practices".

Even the creative work of those who write songs was heavily influenced by the dynamics associated with the COVID's isolation. Indeed, as the interviewee n° 5 stated,

"the pandemic will continue to have lasting effects on the professional songwriting sector. Writers who are accustomed to working in large groups may discover that they do not require as much assistance as they formerly believed; fewer colleagues means less paperwork and more publishing income."

Similarly, the interviewee n° 2, who uses to teach in a music master's program of an important Italian business school explained the effect of COVID-19 on music education:

"Teachers were encouraged to use and investigate the efficacy of electronic resources, but they were not required to abandon traditional schooling. This resulted in a mainly positive attitude toward technology tools, as seen by the benefits and difficulties of synchronous and asynchronous learning".

With reference to the RQ 2, in the creative stage the participants need to acquire sufficient funds to start the production of a creative work. With the live music industry heavily impacted by the pandemic, many musicians and artists have turned to crowdfunding to fund their projects and continue creating music. One of the benefits of crowdfunding in the music industry is that it allows musicians to connect with their fans and build a community around their music (Galuszka and Brzozowska, 2017). By offering exclusive rewards and experiences to their supporters,

musicians can build a strong and loyal fan base. Another benefit is that crowdfunding allows musicians to maintain creative control over their projects. By funding their projects independently, musicians can avoid signing with record labels and maintain control over their music and artistic direction. Since the pandemic, crowdfunding platforms like Kickstarter and IndieGoGo have reported a surge in music-related projects. Many musicians have used crowdfunding to fund recording sessions, album releases, music videos, and virtual concerts. Some have even used crowdfunding to launch their own record labels or music festivals. The interviewee n° 11 confirmed that crowdfunding is an efficient method for producing albums since it enables musicians to determine if there is adequate demand for their music before committing to releasing it. According to him, the digital revolution contributed to this phenomenon because it made it easier to reach the fan base:

"Musicians are increasingly relying on their audience for finance, persuading fans to contribute to the release of an album. Selling unique products and experiences to fans is now widespread. Now, performing live in a fan's living room, producing a custom song, and selling an appearance on your next album are all viable revenue-generating opportunities".

Similarly, the self-funded model has become increasingly popular in recent years, and the COVID-19 pandemic has only accelerated this trend. This model refers to artists or musicians who fund their music careers independently, without the backing of a record label or other traditional industry support (Hesmondhalgh and Meier, 2015). Due to the cancellation of live concerts and tours, musicians have been forced to rely more heavily on online streaming and sales to make profit. This has increased the attraction of self-funding since it provides artists more control over their careers and revenue sources. With the self-funded approach, they have the freedom to choose the kind of music to create as well as its marketing and distribution strategies.

Also, self-funded musicians typically have a closer relationship with their audience since they can communicate with them directly through social media and other online platforms. The self-funded strategy, on the other hand, compels musicians to bear the financial burden of creating and promoting their music, which may be costly. They must also

be competent in areas such as marketing, branding, and distribution, which are generally handled by record companies.

The advent of digital music production technology, which decreases the cost of music creation, has supported the use of this approach. Likewise, when asked if the digital revolution has made the music industry more democratic and accessible to artists, interviewee n° 6 noted how new technologies have substantially altered the possibilities for musicians, even those who are less well-known or in their early stages:

"there are new options, such as DistroKid and TuneCore, that enable independent artists to spread their music on a very limited budget. This method of self-funding is useful for producing and recording songs autonomously. It is therefore accurate to say that today's entry barriers are significantly lower, and the market has become more democratic. There are more opportunities for talented performers to spread their work and connect with the right people in the music industry".

With reference to RQ 3, traditionally, the creation of music involved many actors, including musicians, songwriters, producers, engineers, record labels, and distributors. However, with the rise of digital technologies, many of these roles have been consolidated or replaced by new technologies and platforms by leading to a reduction in the number of business relationships across the industry. One major factor in the decrease of actors in the music industry creation stage is the rise of digital audio workstations (DAWs) and other music production software. These tools allow musicians to create and record music without the need for traditional recording studios or expensive equipment, reducing the need for engineers and producers.

As the interviewee n° 14 reported,

"the actors in the creative chain, primarily musicians, now have the means to release their own music without the assistance of a record label".

On the other hand, Covid-19 has contributed to the emergence of new business relationships in the creation stage of the music industry. Indeed, with recording studios closed and travel restricted, many musicians have turned to remote collaborations to

create new music. This has led to the emergence of new business relationships between musicians and remote collaboration platforms, as well as between musicians and companies that provide remote recording services. As then interviewee n° 13 reported,

“Musicians can now collaborate with other musicians and producers from anywhere in the world, leading to new creative opportunities and the creation of new music styles.”

### The reproduction stage

With reference to the RQ 1, both the digital revolution and COVID-19 had a strong impact on the actors operating in the reproduction phase. As the interviewee n° 3 reported,

“the digital revolution forced the record labels to integrate new figures into the organizational structure to remain aligned with the market needs. The digital sales office has recently been introduced as a new department within the major labels with the primary objective of keeping constantly in touch with audio streaming services such as Apple Music, Spotify, Deezer, and Amazon Music and their most vital commercial partners. The digital sales office has to provide them with the most relevant information regarding the label’s recent local and international releases, persuade the platforms to include the songs in specific target playlists, and finally provide them with the master audio, cover, and all other elements required for the music to be posted online”.

Similarly, the interviewee n° 1 reported that

“we had to include a content creative manager in our marketing department whose responsibilities include preparing stories for social media networks, designing digital postcards, and producing an appropriate newsletter. This necessity became even more relevant with the COVID-19 pandemic. As a trend that arose from the lockdown period, the online fanbase of an artist is extremely demanding of new content related to the artist’s life, even the private side. The content creative manager supports the artist manager in the choice of what can be posted online, and this relationship is expected to become even more profound”.

Regarding the role of the music publishers, it is important to consider that COVID-19 had a strong impact on all the cultural and creative industries, including movie production and distribution. In fact, as the interviewee n° 15 reported,

“the movie and TV series industries have resumed operations after experiencing a period of decline during the pandemic as a result of the interruption of production of numerous television

series and motion pictures. This demands the need for music. Music publishers with strong connections and relationships with the worldwide sync industry may benefit from this situation”.

With reference to the RQ 2, COVID-19 had a significant impact on record label operational modes, particularly the types of contracts to be established for artists. Even though record labels began rationalizing their artist selection process several years ago, COVID-19 emphasized this phenomenon. Indeed, in the past numerous funds have been frequently allocated for the discovery of new artists by record labels, especially the major ones. If identified, they were placed on the roster with considerable contracts, with the possibility that their performance would not meet expectations. Nowadays, even the most prominent record labels are hesitant to invest large sums in talented but emerging artists. In this last scenario, the interviewee n° 3 explained that

“the engagement is lower and the company must invest less. To make the decision less risky and dangerous, as a company, we propose to the artist a licensing contract in which we produce just three songs or a single EP, and then we wait to see how the market responds. If it is successful, we will upgrade him/her to a cast contract”.

Record labels have transitioned from a 360-degree business model, in which the company promises direct funding, marketing, promotion, touring, and other support for the artist in exchange for a percentage of various revenue streams (Marshall, 2013), to a tailor-made business model, in which the artist and the record label discuss their respective capabilities and how they can complement each other. Such an approach inherently considers the possibility of having a flexible and more dynamic structure in which the record label can develop one-to-one relationship with the artist and his/her individual needs and circumstances. In the case of the Italian independent label, where the roster is smaller and the arrangements can be discussed individually, the interviewee n° 1 confirmed that

“the tailor-made business model is a particularly suitable method, especially to guarantee strategic flexibility and the ability to catch opportunities in real-time in such a dynamic context. Moreover, the artists are assisted with proper attention, and this makes the relationship even more valuable”.

Another important model that has created opportunities for record labels is the monetization of user-generated content (UGC) (Dhar and Chang, 2009). The fundamental integration of music and social media explains why UGC has become such an integral part of the contemporary music industry. Individual contributors are responsible for an ever-increasing proportion of the information that is consumed, from films and photographs to reviews, blogs, and social media posts. As reported by the interviewee n° 7,

“in contrast to traditional broadcasting and publishing, the UGC model operates as a peer-to-peer interaction, since social media and other internet platforms offer an unprecedented media landscape in which nearly anybody can run their own show. However, there is a dark side to such a process, the so-called value gap problem: there are billions of views, streams, and different functions, but the value generated is much lower than the numbers that appear on the Web”.

Advertising business models represent another option available in the reproduction stage to profit from creative endeavours. This model works by using the brand to endorse the creative work, for example, by placing the logo or advertisement before or after music videos, by placing it on the artist's website or CD cover, and by the artist conducting a brand campaign at his/her live performances. This process is described by the interviewee n° 4, who confirmed that

“brand partnership and product placement are utilized extensively within the most important record labels. The objective of this activity is to develop relationships with brands within the endorsement strategy framework. The intention is to alleviate and reduce the production costs for the making of the videos and to create a completely new source of income for the artists and labels. That allowed music firms to implement a diversification strategy approach, especially during COVID-19”.

With reference to RQ 3, despite the fact that the number of independent and self-released artists has increased significantly, and that the widespread availability of digital tools has allowed them to distribute their products everywhere, the bargaining power of the major record labels continues to be predominant. The direct distribution process cannot compete with the distribution network of major label artists. This is a direct consequence of vertical integration strategies implemented by record

labels in past years. Indeed, many companies have begun to internalize the activity of distribution to self-release their artists, utilizing synergies in the creation of music products. Record labels with sufficient capital and resources frequently employ the vertical integration model. It is one of the strengths of multinational corporations to be able to internalize all the services and activities required to complete a project, as confirmed by the interviewee n° 5. The pandemic has led to increased consolidation in the music industry as companies look for ways to adapt to the changing landscape. For example, in 2020, Warner Music Group acquired the independent label and distributor Songkick, while Sony Music Entertainment acquired the live events company In-somniac Events.

### The distribution stage

With reference to the RQ 1, the distribution process was significantly impacted by COVID-19, as an increasing number of artists, in accordance with the associated record labels, postponed their releases. This was partially caused by the inability to promote new albums through tours. Consequently, live music in general has been severely impacted. Several concerts and events have been postponed. Others have made the decision to take advantage of digital distribution's opportunities, such as through digital content aggregators. An aggregator enables artists to distribute their music on a global level through specifically digital services like Apple Music, Spotify, and Tidal, as opposed to a full-service distributor who concentrates both on physical and digital releases. Because aggregators may reach a global audience, artists may be interested in developing new music that caters to the needs of a certain specific group that is not regarded as mainstream. Indeed, according to interviewee n° 16,

“streaming has unquestionably increased during the pandemic, but Latin America has experienced the largest growth. If artists are interested in this topic, they should investigate the patterns and charts in Latin America. Reggaeton, salsa, and rumba have always been popular, but Spotify compiles country-specific charts that users may listen to regardless of their location. Artist might use them as ideas to compose their own songs that may suit nicely into the Latin American music landscape”.

With reference to the RQ 2, the pandemic has

accelerated the trend towards digital distribution of music. With live music events cancelled or postponed, artists and record labels have turned to digital distribution to get their music to fans. Musicians and labels have increasingly turned to streaming platforms to distribute their music. The pandemic has accelerated the trend towards direct-to-consumer (DTC) models in the music industry, with artists and labels looking to establish closer relationships with their fans and generate additional revenue streams (Fox, 2004). Indeed, the interviewee n° 1 stated that

“during the lockdown period, artists and fans had the chance to communicate more through social media channels. This enhanced the opportunities to directly sell your own music and even bypass the most used distribution channels such as the streaming platforms”.

During the pandemic, digital sales platforms such as Bandcamp and Patreon have experienced increased traffic, serving as avenues for musicians to vend music and merchandise directly to their followers. The sales of merchandise have turned into a significant revenue stream for artists, with many resorting to the direct distribution of merchandise, employing online sales platforms to offer items like t-shirts, posters, and the like to fans.’

With reference to RQ 3, COVID-19 has significantly accelerated the shift towards digital technologies in the music industry, which has in turn led to new business relationships in the distribution stage. The amplified dependence on streaming platforms has given rise to novel licensing and revenue-split agreements between musicians, labels, and streaming services. The rise of Direct-to-Consumer (DTC) models in the music industry has created a dual effect: on one side, it has facilitated the creation of fresh DTC platforms and collaborations among musicians, labels, and e-commerce corporations; conversely, to engage with their fanbase directly, artists have had to lean heavily on social media platforms such as TikTok, Instagram, and YouTube. This shift has spurred new alliances between artists and influencers, along with collaborations involving labels and social media corporations.

### **The consumption stage**

With reference to the RQ 1, COVID-19 pandemic

accelerated the continuous trend towards digitalization of the music landscape with premium streaming being the biggest beneficiary. Total consumer spending on music decreased, with live music events and physical sales being the most severely affected. However, the level is going back to the pre-pandemic level as stated by interviewee n° 8,

“After two long years, the time has come to reward artists and their supporters. I am confident that we are just at the beginning of the music event industry’s most prosperous period in history”.

Simultaneously, the radio medium has accelerated the process of modernization through an increasingly widespread presence on all platforms and devices and an offer that has been enriched with visual and on-demand content. All of this broadens the potential listening opportunities as well as the market perimeter, within which the more traditional subjects are joined by new national and international realities, also from other sectors. As the interviewee n° 13 stated,

“even before the pandemic, radio stations represented an important intermediary, especially in the process of digital consumption. However, in recent years, radio has seen an increase in the consumption of streaming music services and the dissemination of (new) audio content such as podcasts and audio books, particularly among younger audiences”.

With reference to the RQ 2, consumption represents the final stage in the music industry value chain. The business models available at this stage are numerous. The first and most straightforward is the free business model, which is typical of independent and emerging artists. As the interviewee n° 12 stated,

“to disseminate their music, artists typically offer their products for free to generate word-of-mouth and increase the number of listeners and fans. Once they have established themselves, they will request a subscription to their channels to allow fans to purchase songs and albums. It is obvious that this possibility exists because the digital side of the music business has replaced the consumption of physical products”

In terms of the business model employed by audio streaming platforms like Spotify, Apple Music, Amazon Music, etc., there are three distinct scenarios: subscription-based, pay-per-download, or ad-supported, depending on the quantity, quality,



or duration of use (Thomes, 2013). Apart from the pay-per-download example (e.g., iTunes), where the listener has to purchase a specific musical product (single song or entire album), the differentiation between the subscription model and the advertisement-supported model hinges on the type of membership. For instance, on Spotify, the free membership allows the user to listen to their favourite music at no cost, but advertisements will be interspersed during the listening experience, serving as the sole revenue stream for the company. In contrast, when a subject pays a monthly or annual subscription fee, there will be no advertisements throughout the entirety of use, as Spotify is already profiting from this operational process. According to the interviewee n° 14,

“every audiophile, even those who are resistant to the changes brought about by digital, is now dealing with streaming music. For the monthly price of a CD, or even less, you get versatility of use, excellent listening quality (almost always), and the ability to be enjoyed on a variety of devices. It is impossible to resist. The production and the fruition processes have been streamlined by technology. However, the flow of listeners into and out of the market has increased. Previously, the supply was smaller, but the market was also smaller”.

Live streaming also represents another business model type that has emerged in the consumption stage of the music industry. As the pandemic put a halt to live concerts and events, live streaming has ascended as a popular avenue for musicians to maintain a connection with their fans. Many musicians now offer paid live stream concerts that can be accessed globally, providing an opportunity for them to reach a broader audience. In a similar vein, virtual reality technology has introduced new possibilities for the consumption of music. Musicians can now create immersive virtual reality experiences for their fans, allowing them to attend concerts and events virtually.

With reference to RQ 3, COVID-19 boosted the implementation of partnership business models to explore new opportunities in the current market and to exploit diverse revenue streams by combining firms that offer complementary services. For example, during the pandemic, it was impossible to perform live concerts, and this opportunity aided the

companies in the industry in establishing new business relationships. A key example is provided by the interviewee n° 7:

“During the lockdown period, Amazon, record labels, and booking agencies have maintained significant contacts. In fact, to organize some concerts, the labels have decided to create shows that will be streamed online, on demand, on streaming platforms such as Twitch, with a fee to access that particular event”.

This new experience was also witnessed by the interviewee n° 9. While strongly supporting the notion that the event loses the added value provided by the conviviality and human side of the aggregation, he argued that

“streaming concerts online could be an interesting and disruptive idea to follow in the future as a corollary to the main live event and, most importantly, as an opportunity to share exclusive and well-researched content to connect to the live concert”.

These immersive experiences allow fans to engage with music in new and exciting ways, creating new business opportunities for artists and technology companies.

## Discussion and conclusions

The primary contribution of this paper is the exploration of the link between changes in external environment and business model adaptation. Extending the work of scholars like Casadesus-Masanell and Ricart (2010), it explores the relationship between environmental changes, such as technological evolution, legislative shifts, or market variations, and the subsequent transformation in business models. The findings offer valuable insights into the dynamic process of strategic decision-making in firms, augmenting the understanding of studies such as Amit and Zott (2012), who emphasize the pivotal role of business model innovation in response to external stimuli.

This work highlights the competitive edge companies may gain through the ability to adjust their business models in alignment with changing environments, echoing Teece's (2018) argument about the value of dynamic capabilities. Moreover, following Fieldstad

and Snow (2018), the study posits that the evolution of fresh business models may engender new business alliances, underscoring the interconnectivity of the business ecosystem and the necessity to comprehend how different players within the ecosystem engage with and impact one another. This means modifications in one segment of the business landscape could have knock-on effects in other sectors, and businesses must remain alert to these possible changes and modify their strategies as needed. For example, if a company adopts a new business model with a focus on a direct-to-consumer approach, it might be crucial to re-evaluate its existing partnerships and collaborations. This could entail forging new connections with other industry participants or re-evaluating current partnerships or alliances. Understanding the interdependence of the business ecosystem can also help identify potential opportunities for innovation and growth. By comprehending how diverse ecosystem actors interact and impact each other, businesses can spot market gaps, create new business models to meet unmet demand, or leverage new technologies or business practices. The concept that the development of innovative business models can lead to the formation of new business alliances emphasizes the need for companies to exhibit adaptability and vigilance in response to fluctuations in their external landscape. By grasping the mechanics of the business ecosystem and the potential repercussions of novel business models on their alliances, companies can strategically orient themselves for increased future prosperity.

In addition, the research provides a general overview of the Italian music industry, including a description of the actors as well as the current operational and managerial practices commonly employed by companies. The sector has evolved significantly over the last two decades, with a significant boost due to the COVID-19 pandemic, as a result of external factors that have increased the level of interdependence and complexity among the various players, transforming the industry value chain from simple sequential links to intricate and interconnected ties. The insights and the analysis conducted reveal that a strong relationship between the connection among the actors and the types of business models exists. This finding, in line with Capaldo (2007),

suggests that the more the actors change how they operate and collaborate in response to exogenous factors, the greater the creation of new business models that in turn lead to a reconfiguration of the business relationships. Obviously, such transformations are always forced by economic goals: firms naturally seek the best opportunities to maximize their profits, either by reducing the amount of costs or by increasing the level of revenues. To gain more opportunities, music firms decide to change the operational scheme, which enables the market to be constantly updated and constantly regenerate itself in a complex and dynamic environment.

One significant contribution of the paper is attributed to the fact that all interviewees occupy top-tier positions in the Italian music industry. The selection of such participants has facilitated the acquisition of invaluable insights directly from individuals who are deeply embedded and influential within the sector. Moreover, a diverse range of interviewees was ensured, each fulfilling distinct roles within the industry. This decision enables a multi-faceted understanding of the industry's dynamics, encompassing an appreciation for the unique challenges and opportunities associated with each role and providing a holistic view of the industry as a whole. This leads to a number of important managerial implications that may be inferred from this study. First, all music industry participants are pushed to pursue business opportunities. Record labels, for example, whether large or small, decided to distinguish their operations in order to explore new options and boost total revenue value by integrating core and complementary activities and using synergies. Similarly, in addition to traditional music sales and streaming, artists have expanded their revenue streams by exploring new avenues such as merchandise, live events, and advertising. This tendency toward diversification indicates a recognition of the music industry's shifting competitive landscape and the necessity to adapt to new market conditions and technical improvements, mirroring trends identified by Wikström and DeFilippi (2016). Second, in addition to the strategic side of the change, the findings show that an organizational impact also exists as a response to exogenous variables since some music firms were stimulated to introduce new units within their organizational

structure. Third, the aim of maximizing the result requires firms to consider the trade-off between exploring new opportunities and exploiting existing ones. Rather than investing large amounts of capital, firms in the music industry have opted to explore new business models in the digital space. Record labels have formed alliances with other companies as a solution, utilizing the flexibility and dynamic nature of the digital technology to expand partnership opportunities. The COVID-19 pandemic has also pushed music industry players to collaborate with companies from other industries to develop new products and experiences for the market. It is important for all players in the industry to monitor environmental changes and ensure that their strategies remain up-to-date and in line with current trends. Therefore, designing a business model for a company is an ongoing process that enables actors to operate effectively for an extended period.

### Limitations and further research

A potential constraint of this study lies in the fact that most of the interviewees occupied senior-level positions within their organizations. This could potentially paint a too generalized picture of the industry. To mitigate this limitation, future studies could incorporate perspectives from employees at all organizational levels to obtain a more thorough and diverse understanding of the subject matter. In addition, this study is predominantly focused on the music industry, which may lead to uncertainties about the applicability of its results to other sectors within the creative and cultural sphere. Subsequent investigations could probe whether analogous trends and methodologies are observable in other domains such as film, television, or the gaming industry. By widening the boundaries of the research, the comprehension of the wider relevance and potential influence of the discoveries on diverse industries might be enhanced. Finally, further research on which business model types are most successful in adapting to exogenous shocks can provide valuable insights for the music companies. Different business models have different strengths and weaknesses, and some are better suited to cope with certain types of exogenous shocks than others.

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# JOURNAL OF BUSINESS MODELS

## Internal organizational factors driving digital transformation for business model innovation in SMEs

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### Abstract

**Purpose:** The primary purpose of this paper is to investigate which internal organizational factors drive the renewal of SMEs' business strategy and business culture to support their digital transformation trajectory.

**Design/methodology/approach :** The paper builds on a literature study and Delphi study from both a South African and Dutch scholarly and industry perspective. For the Delphi study a questionnaire was used to determine the commonly cited internal organizational factors that drive digital transformation for business model innovation in SMEs in an emerging and a developed economy. These factors were then confronted with the insights from the literature study to draw literature-based and empirically grounded insights.

**Findings:** Specific internal organizational factors are identified that contribute to the renewal of SMEs' business strategy and business culture which support their digital transformation trajectory.

**Originality/value :** The study contributes to the current understanding of the internal organizational factors that drive digital transformation for business model innovation in SMEs. Researchers can use these factors as a basis for future research. For practitioners, the findings provide a guideline which SMEs can use to (re)arrange business activities to enable digital transformation-induced business model innovation.

Keywords: Business model innovation; Digital transformation; Internal organization; SMEs

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## Introduction

Digital transformation is defined as a way to deploy digital technologies within an organization that help to create and appropriate more value for an organization (Verhoef et al., 2021, p.889). Such transformation typically leads to business model innovation (see Di Vaio et al., 2021), including changes in the core organizational business processes (e.g. Usai et al., 2021), capabilities (e.g. Guinan et al., 2019; Rinalti et al., 2019), and exploitation of completely new market opportunities (Chen et al., 2014; Tan et al., 2015; Venkatraman, 1994; Wengler et al., 2021). Essentially, digital transformation is seen as an enabler for continuous progression of businesses models (Ziółkowska, 2021), aligning them better with the digital economy and strengthening digital customer and business partner relationships (Kim, 2021; Kotarba, 2018).

Literature on digital transformation has emphasized the various digital transformation outcomes on organizational structure and business model performance (Eller et al., 2020; Klos et al., 2021; Mhlungu et al., 2019; Pucihar et al., 2019; Ram and Zhang, 2021). For instance, Ardito et al. (2021) assess the direct effect of digital transformation (jointly with environmental orientation) on the product and process innovation performance of small and medium-sized enterprises (SMEs). Similarly, Favoretto et al. (2021) analyzed the effect of digital transformation on business models and show that digital transformation forces manufacturing companies to change their business logic, which brings about changes in organizational elements such as value architecture and technological structure. Within this literature strand, there are also studies specifically focusing on digital technological tools used by organizations that are innovating the way they do business and implement digital transformation, integrating big data, artificial intelligence, 3D printers, and social media in their business processes (e.g. Ram and Zhang, 2021; Rothberg and Erickson, 2017).

Despite recent work that focuses on digital transformation outcomes, there is less understanding of the internal organizational factors within organizations that drive digital transformation processes and related business model innovation. There are some

exceptions, such as Hrustek et al. (2019) who reflect on factors which lead to digital transformation, e.g. customer drivers, and technology drivers. However, their work focuses on external forces as drivers affecting digital transformation and in large organizations. There is still a lack of systematic knowledge of internal organizational factors that drive digital transformation (Bin and Hui, 2021; Gasperlin et al., 2021) and particularly concerning SMEs (Bin and Hui, 2021; El Hilali et al., 2020; Gasperlin et al., 2021; Li et al., 2018). SMEs are often regarded as flexible and agile organizations, resulting in a competitive advantage over large businesses. Yet, they are often also organizationally less prepared for technological turbulence (Azevedo and Almeida, 2021), experiencing standardization challenges, cybersecurity issues, and a lack of a digitally skilled workforce (Horváth and Szabó, 2019), which might challenge digital transformation-induced business model innovation.

At the same time, digital transformation requires internal organizational adaptation, such as changes to processes, structures and especially strategy and culture (Verhoef et al., 2021; Zhang et al., 2022; Badasjane et al., 2022). In particular, business strategy renewal as an organizational driver is beneficial to businesses in multiple ways, such as satisfying customer needs, reducing resource waste, and achieving ambidexterity, making it critical for stimulating these other organizational processes as well (Wang, 2022). Yet, several authors (Matt et al., 2015; Hess et al., 2016; Hyvönen, 2018) have argued that business leaders and managers still lack the skills and knowledge to formulate and implement a digital strategy, which is why only a few businesses have managed to implement digital transformation successfully. Similarly, Albrecht (2015) and Hemerling et al. (2018) claim that culture is one of the key drivers contributing to the failure of the digital transformation process. Pedersen (2022) agrees, arguing that business leaders and managers lack the understanding and knowledge of how digital transformation changes and influences the business culture, calling for more research to identify which organizational factors contribute to SMEs' culture renewal to drive digital transformation for business model innovation.

Ultimately, there is a need to focus on internal organizational factors that foster digital transformation and related business model innovation through strategy and culture renewal because the external drivers often influence digital transformation-induced business model innovation through internal organizational factors (Zhang et al., 2022). SMEs, just like any other organization, digest external influences often through internal organizational adaptation (see Greenwood et al., 2011). Therefore, the central research question that aimed to support the closing of the above knowledge gaps was *Which internal organizational factors drive the renewal of SMEs' business strategy and culture to support their digital transformation trajectory?*

An exploratory research approach using a Delphi study was used to answer the main research question, by including a varied population sample to achieve a convergence of opinions about which internal organizational factors drive business strategy and culture renewal necessary for digital transformation for business model innovation in SMEs. The intended contribution of this research to theory and practice was twofold. Firstly, this research aimed to contribute to the literature on two organizational drivers of digital transformation for business model innovation in SMEs, namely business strategy and business culture renewal, by developing an overview of the internal organizational factors linked to either of the two. Secondly, this study aimed to provide practical insights for SMEs that want to set up, develop, or restructure their internal organizations to enable digital transformation for business model innovation.

After this introductory section, the remainder of this paper is organized as follows: The next section deals with the literature on digital transformation and its influence on changes in the strategy and culture of organizations, which are concepts that are directly related to business model innovation. The empirical research methods that were used to further deepen the understanding of the internal organizational factors driving digital transformation for business model innovation in SMEs are explained in the third section. The empirical research results are presented in the fourth section. In the fifth section these results are discussed, they are confronted with the literature, literature-based and empirically grounded propositions are raised, the limitations of this research are highlighted, and avenues for future research are outlined. The last section closes with a concise conclusion.

## Theoretical background

### Digital transformation and business model innovation

Digital transformation - the introduction of new digital technology (Eksell and Härenstam, 2017) - and business model innovation - the innovative rearrangement of business activities (Eksell and Härenstam, 2017) - can exist independently of each other. In addition, digital transformation may also affect the business model innovation of organizations (Eksell and Härenstam, 2017). Digital transformation and business model innovation functioning as two independent entities are represented by the images on the left and right sides, respectively, in Figure 1.

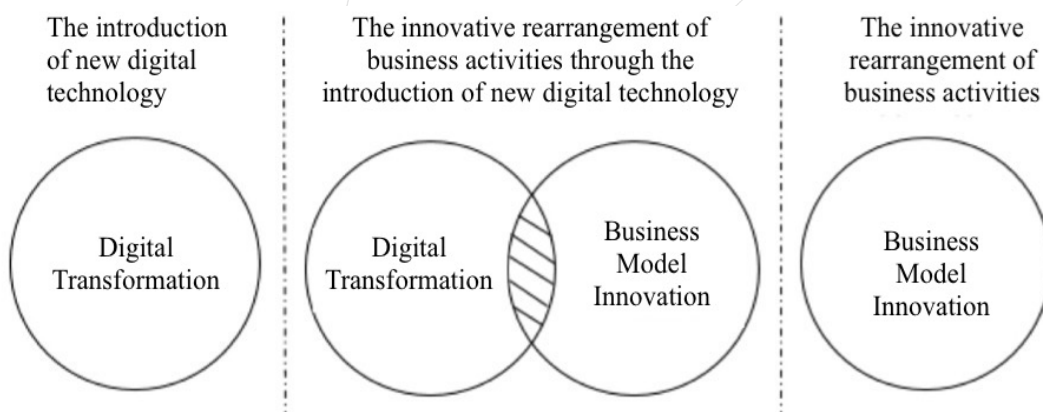


Figure 1

The dependent relationship is visualized in Figure 1 by the image in the middle. The research and this literature review focus on this dependent relationship.

Digital transformation is a complex and continuous process of adopting and adapting digital technologies invoking changes in organizational structures, governance, product development, service delivery, and business models (Romanelli and Tushman, 1994; Verhoef et al., 2021; Warner and Wäger, 2019). It is responsible for adding to the organizational competitive advantage in an increasingly volatile environment (Fitzgerald et al., 2014; Zott and Amit, 2010). Yet, transforming digitally and using it to innovate a business model is challenging (Azevedo and Almeida, 2021; Henriette et al., 2016). It requires an organization-wide change through the implementation and use of digital technologies (Remane et al., 2017; Richter et al., 2017). This is particularly relevant for SMEs, which are seen as a driving force and backbone of most economies (OECD, 2017). By leveraging on digital transformation, SMEs can improve their market intelligence, achieve standardization, and innovate their business model, allowing them to become players and even key players in globalizing markets while having access to a wide range of networks at a relatively low cost (OECD, 2021; Ulas, 2019). However, SMEs are (in comparison to large businesses) often more financially constrained and conservative, making them less ready for changes induced by the set of digital transformation technologies that are being used by organizations to digitally innovate their business models (Azevedo and Almeida, 2021; Eksell and Härenstam, 2017). Digital transformation technologies are defined as combinations of information, computing, communication, and connectivity technologies (Bharadwaj et al., 2013), for example mobile phones, large online datasets, connected devices, low-cost computing resources, machine learning, and natural language processing (Vargo et al., 2021).

### Renewal of business strategy

Adopting digital technologies is key to driving digital transformation (Verhoef et al., 2021). Morakanyane et al. (2020) and Fitzgerald et al. (2014) highlight that once the right digital technology to be adopted

has been identified by the organization, stimulating the right skill set, and adapting and revising the organizational strategy are imperative for effective implementation of digital transformation-induced business model innovation (see also Westerman et al., 2011). Kane et al. (2015) stress that digital transformation for business model innovation, including the use of various interconnected digital technologies, requires a change in leadership, mindsets, and attitudes towards risk as well as new ways of working and openness to change. In particular, for SMEs, digital transformation for business model innovation can be challenging (Gruber, 2018). Small businesses often have a more specific focus, which tends to reduce the need for digital transformation, leading to a lack of digital elements in their business model, market approach and, most importantly, their business strategy. Blatz et al. (2018), Rothmann and Koch (2014), Szedlak et al. (2019), and Verhoef et al. (2021) highlight that a renewal of organizational business strategy is crucial for digital transformation. Bharadwaj et al. (2013, p. 472) define a digital business strategy as an “organizational strategy formulated and executed by leveraging digital resources to create differential value”. It guides the efforts of leaders to create new value propositions by combining the existing capabilities of their companies with capabilities enabled by digital technologies (Sebastian et al., 2017). Digital transformation in SMEs requires a thoroughly defined and adapted digital transformation strategy which centres on the coordination, prioritization, and implementation of digital technologies (Matt et al., 2015).

### Renewal of business culture

SMEs often lack the resources, managerial capabilities, and vision to fully understand the cultural impact of digital transformation for business model innovation. Hock et al. (2015) add that SMEs might require a renewal of their business culture to one that is supportive in implementing digital transformation. Business culture consists of artefacts, values, and shared basic assumptions about the organizational business environment (see Schein, 1990). It is perceived as a valuable strategic asset that has the potential to support digital transformation by exploiting digital technologies (Warner and

Wäger, 2019; Westerman et al., 2011). Gamache et al. (2019) and González-Varona et al. (2020) argue that a digital business culture perpetuates innovation, and continuous improvement in skills, products, and resources. Therefore, business cultural attitudes and values can either support or hinder the digital transformation of businesses (Vogelsang et al., 2019), playing a crucial role in the adoption of new technologies (see also Fitzgerald et al., 2014).

Several cultural values needed in digital transformation for SMEs have been identified (Tuukkanen et al., 2022): dynamic responses to changing environmental demands; striving for continuous organizational development and innovation; having an affinity towards the organization; investing in continuous learning; developing tolerance towards mistakes; being open towards calculated risks; nourishing trust between the company and its clients and trust within the organization; and investing in cooperation within the organization. A culture that promotes creativity and innovation for new (and digital) product and service delivery, encourages risk-taking, and creates a sense of urgency in sensing new opportunities also contributes to digital transformation in SMEs and potentially supports business model innovation (Aksoy et al., 2017).

## Research methodology

### Delphi study

For the empirical part of this study an exploratory research approach using a Delphi study was adopted (Dalkey, 1972; Linstone, 1978; Turoff and Linstone, 2002; Hsu and Sandford, 2007; Avella, 2016). This approach gathers data from varied respondents within their domain of expertise, aims to bridge the gap between theory and practice, and increases an understanding of a certain phenomenon in more depth (Brady, 2015). This method was used to achieve a convergence of opinions about which internal organizational factors relative to the renewal of business strategy and business culture drive digital transformation for business model innovation in SMEs. Consensus reaching was relevant in understanding factors contributing to business strategy as well as business culture, as it enabled participants from different power positions to form or share their opinions and perceptions on the topics, making

the observations more generalizable (Brady, 2015). Dalkey (1972, p. 15) states that a Delphi study is predicated on the rationale that “two heads are better than one, or ... n heads are better than one”.

### Participants from South African and Dutch academic organizations and SMEs

The Delphi study was conducted with scholarly experts in the closely related fields of entrepreneurship, technology, business management, and innovation. Invitations were sent to 19 South African (SA) scholars (lecturers, senior lecturers, professors, and/or academic entrepreneurship specialists) and 10 scholars participated, resulting in a 53% response rate. Invitations were also sent to 26 scholars from the Netherlands (NL) and 10 participated, resulting in a 38% response rate. In total, 20 scholars participated in the study. Tables 1 and 2 present the demographic data of the SA and NL scholars.

The participants from both the SA and NL academic institutes were affiliated to a management or entrepreneurship department, with 1 SA panel member affiliated to the Faculty of Art, Design, and Architecture. Furthermore, the majority of participants were senior lecturers (11 in total), alongside 6 professors and 3 lecturers.

The Delphi study also invited two groups consisting of SA and NL employees/owners of SMEs. No exclusion criteria applied to the SME participants; thus, lower, middle, and top-level employees and/or the owner of an SME could participate in the study. Invitations were sent to 116 SA SMEs, and 8 participated, which is a 7% response rate. 24 invitations were sent to NL SMEs, and 7 participated, resulting in a 29% response rate. The majority of the SME participants from both SA and NL firms were business owners (9 in total). Furthermore, the majority of participants were part of a business with up to 50 employees (13 in total). A total of 15 SME employees and/or owners participated in the Delphi study. Table 3 presents the demographic data of the SA and NL SME participants.

All participating groups in the study exceeded the required minimum number of 7 participants (see Linstone, 1978; Okoli and Pawlowski, 2004).

Table 1.

Scholars' Institutions	Frequency
University of Johannesburg	4
Stellenbosch University	1
University of Pretoria	2
University of Mpumalanga	1
Gordon Institute of Business Science	1
University of South Africa	1
Scholars' Designations	
Lecturer	2
Senior Lecturer	5
Professor	3
Scholars' Affiliation to the University	
Department of Business Management	8
Business School	1
Faculty of Art, Design, and Architecture	1

Table 1: Panel profile of SA scholars (n = 10)

Furthermore, collecting empirical data from representatives of SMEs from both an emerging economy (SA) and a developed economy (NL) (World Bank Data, 2021a; World Bank Data, 2021b) broadened the analytical validity of the insights from the empirical research towards the practice of emerging and developed economies. Although this analytical validity is limited and further research is needed in other emerging and developed economies to strengthen it (Andrade, 2021), it can serve as a basis for such future studies (Patton, 2002).

### Two rounds of data collection

All data were collected online in two rounds using Google Forms, and communication with each participant was organized via an online link. The

procedure that was followed to conduct the Delphi study consisted of two rounds, which is the minimum required number of rounds in a Delphi study (see Thangaratinam and Redman, 2005). In round 1 in an online questionnaire, the SA and NL scholars and practitioners were asked to rank a pre-structured list of organizational characteristics that are commonly cited in the literature as important in driving digital transformation for business model innovation (see Van Tonder et al., 2020), and were also invited to list additional organizational characteristics, based on their experience. This resulted in an extended list of characteristics that were consolidated in a second version of the online questionnaire. In round 2 the participants were asked to also rank the additional characteristics, which resulted in an extended

Table 2.

Scholars' Institutions	Frequency
University of Amsterdam	1
Vrije Universiteit, Amsterdam	3
University of Groningen	1
Radboud University	1
University of Twente	3
Tilburg University	1
Scholars' Designations	
Lecturer	1
Senior Lecturer	6
Professor	3
Scholars' Affiliation to the University	
School of Business and Economics, Management and Organization	2
Department for Entrepreneurship, Strategy, and Innovation Management	3
Faculty of Science, Innovations in Human Health and Life Sciences	2
Faculty of Economics and Business Management, Entrepreneurship and Innovation	1
Department of Management	1
Entrepreneurship and Small Business Management, Innovation and Technology Management	1

Table 2: Panel profile of NL scholars (n = 10)

list of organizational characteristics that drive digital transformation for business model innovation in SMEs, some literature based and empirically validated, and others empirically based and empirically validated.

### Results of round 1

The scholars and SME participants were asked to rate the most important internal organizational factors in adopting digital transformation technologies as pertaining to the highest ranked organizational characteristics, using a 5-point Likert scale from 5 (very important) to 1 (not important at all).

Table 3.

Scholars' Institutions	Frequency SA	Frequency NL
Nationality	8	7
Gender		
Male	6	7
Female	2	-
Designation		
Business owner	6	3
Top-level employees	2	-
Middle-level employees	-	2
Lower-level employees	-	2
Level of Education		
Master's degree	-	7
Grade 12 (Matric) certificate	2	-
Post-matric diploma or certificate	3	-
Postgraduate degree	3	-
Length of Service		
< 1 year	-	1
1-5 years	4	5
6-10 years	1	-
> 10 years	3	1
Industry		
Healthcare	-	1
Construction	1	1
Computer and related activities	3	1
Public sector	-	1



Finance and business services	3	1
Research and development	-	1
IT recruitment	1	
Mobility and infrastructure development	-	1
Business Size		
< 5 employees	4	1
5-20 employees	1	2
21-50 employees	2	3
> 51 employees	1	1

Table 3: Panel profile of SA (n = 8) and NL SMEs (n = 7)

Table 4.

		Mean		Standard Deviation		Mode	
No.	Item	Scholars	SMEs	Scholars	SMEs	Scholars	SMEs
1	Openness to new techniques and methods	4.8	4.7	0.8	0.7	5	5
2	Agility	4.4	4.6	0.9	1.0	5	5
3	Digital strategy	4.4	4.3	0.8	0.5	5	5
4	Continuous innovation	4.2	4.2	0.7	1.3	5	5
5	Organizational infrastructure	4.1	3.4	0.9	1.2	4	4
6	Organizational structure	3.7	3.8	0.4	0.5	4	4

Table 4: Internal organizational factors in adopting digital transformation technologies

Table 4 shows that the scholars and SME participants agreed that most importantly, a business should be open to new digital techniques and methods, followed by the ability to move quickly and easily (agility). Both the scholars and SMEs rated having a digital strategy as very important. Continuous innovation was also rated as very important by both groups; however, the highest standard deviation was within this construct (SD = 1.3 for SMEs), indicating that full consensus was not reached among the SME participants. Organizational structure and infrastructure were also deemed important, though their scores indicated that the participants did not think these were as important as the other factors. The majority of scholars claimed that infrastructure is very important, but it is interesting to note that not all SMEs rated this as highly. The participants were asked which additional internal organizational factors they believed would assist an SME in adopting digital transformation technologies. Two statements by participants captured the common opinions on these additional factors:

*I think the education of the different types of digital technologies available will assist SMEs to understand the available options while also aiding to adopt the usage. (SME Participant 1)*

*People (leaders) in the business who are not afraid to apply these technologies and the support for customers if the technologies are not working optimally. (Scholarly Participant 2)*

Three of the SME participants and two scholars emphasized the need for flexibility and adaptability

when adopting digital technologies.

Both groups of participants were asked to rate the most important internal organizational factors in adopting digital transformation as a concept, again using a 5-point Likert scale from 5 (most important) to 1 (least important).

Table 5 shows that both the scholars and SME participants rated digital capabilities as most important, followed by customer needs and resources as very important, and digital products that are digitally infused as important.

The participants were also asked to give their opinion on whether the type of customer service played a crucial role in the decision to adopt the digital transformation concept, with 16 scholars and 10 SME participants stating that it did. SME Participant 3 captured the common opinion of many participants with the following response:

*Definitely. Depending on your customer, their needs are successfully met through digital technologies to a varying degree. I think it mostly depends on both the expectation of your customer (conscious need) as well as the potential added value of digital technologies (unconscious need). If neither of these is true, a (more) digital technology-based product is likely to be incompatible with the business processes of your customer and therefore undesirable. (SME Participant 3)*

SME participants were asked two additional questions relating to their product offering and digital transformation technologies (see Table 6).

Table 5.

No.	Item	Mean		Standard Deviation		Mode	
		Scholars	SMEs	Scholars	SMEs	Scholars	SMEs
1	Digital capabilities	4.7	4.5	1.0	1.1	5	5
2	Customer needs	4.4	4.3	0.8	0.9	5	5
3	Availability of resources	4.2	4.0	0.5	0.6	4	4
4	Digital products	3.7	3.5	0.6	0.8	4	4

Table 5: Most important internal organizational factors when adopting digital transformation as a concept

Table 6.

Question	Response	Number of participants	Percentage
Does the product that you offer influence your decision to incorporate digital technologies into your daily operations?	Yes	12	77%
	No	3	23%
	Total	15	100%
Do you think that having products on a digital platform in the 21st century is needed to competitively compete in the existing business environment?	Yes	10	67%
	No	2	13%
	Unsure	3	20%
	Total	15	100%

Table 6: Open-ended questions on adoption of digital transformation technologies

From Table 6, it is clear that the adoption process of digital transformation technologies depends on the existing products offered, with 12 of the SME participants stating yes. The majority of these participants (10) stated that products should be offered on a digital platform and three participants were unsure about the question.

Furthermore, to execute the adoption of digital transformation technologies, it is important to identify the types of resources that an SME should have. Most of the participants stated that the human resource aspect is most crucial since employees should possess essential technological skills, an open mindset, and decisiveness as a trait. SME Participant 4 captured this as follows:

*Open-minded human resources. A business will need the obvious funding for their digital transformation however the bulk of resistance will come from employees. So, in short, the resources needed are those for change management and digital (and other) skills education. The training required is not just digitally focused but soft skills and mindset shifting training and education. You need employees to change the way they think about things before any digital transformation can take place. (SME Participant 4)*

The scholars and SME participants were asked to rate the internal organizational factors they considered most important for adopting business model

innovation (from 5 = very important to 1 = not important at all).

It is clear from Table 7 that both the scholars and SME participants rated dynamic capabilities as the most important. The need to be resilient and develop a strategy aimed at innovation were rated as very important across both groups. Furthermore, both groups claimed that the business model innovation process requires both digital capabilities and the introduction of digital products (either fully digital or digitally infused); however, the scholars rated capabilities over products, whereas SME participants rated products over capabilities. Lastly, the type of product offered was rated important.

The SME participants were also asked to give their opinion on the open question of whether a new strategy should be crafted when deciding to pursue digital transformation-induced business model innovation. Only five stated outright that a new strategy is needed, claiming that it is a different way of operating and decision-making. In contrast, ten participants indicated that a new strategy is not needed, giving the following justification:

*Depends on what your strategy is; digital technology should be seen as an enabler; evaluate vision and see if it will need a change. (SME Participant 5)*

Table 7.

No.	Item	Mean		Standard Deviation		Mode	
		Scholars	SMEs	Scholars	SMEs	Scholars	SMEs
1	Dynamic capabilities	4.6	4.1	1.1	0.9	5	4
2	Strategy for innovation	4.3	4.1	1.0	1.1	5	4
3	Resilience	4.0	4.0	0.9	0.8	4	4
4	Digital products	3.8	4.1	0.9	0.9	4	4
5	Digital capabilities	4.3	3.9	0.5	0.7	5	5
6	Product offering	3.8	3.9	1.0	0.8	4	4

Table 7: Most important internal organizational factors when adopting business model

*Only if the product is significantly different, otherwise keep it as is. Also, digital transformation is not a goal, but rather a means to the end. (SME Participant 6)*

To fully understand why and when digital transformation leads to business model innovation, the difference between a traditional business model and a business model that is underpinned by a collection of digital transformation technologies needs to be articulated clearly. This question was posed to the scholars, with seven participants clearly stating the main difference being that digital transformation-induced business model innovation is more agile and scalable, and allows continuous and rapid business model innovation as the environment changes. Five participants emphasized that speed is a differential factor:

*Speed, speed, speed, and lower cost coupled with customer convenience. (Scholarly Participant 7)*

## Results of round 2

Each participant was required to rank the listed internal organizational factors on a 5-point Likert scale. In terms of the most important internal organizational factors in adopting digital transformation technologies, the participants identified additional internal organizational factors that are critical for an SME to consider (see Table 8).

From Table 8, it is clear that training on the types of digital technologies, benefits, challenges and how to use the technologies were identified as very important by both scholars and SMEs. Competitive pressure in the business environment also contributes to the desire of a business to adopt digital transformation technologies, with both groups rating it as important, but not very important. Resource availability was rated as very important by the scholars, but only important by the SMEs. Furthermore, a mindset of creativity and innovation should be instilled in employees in the process of adopting digital transformation technologies, being rated as very important by both scholars and SMEs. The business culture should also be redesigned, with the majority of SMEs agreeing that this is very important, whereas the scholars rated this as important. Change management and the right leadership were rated by both groups as very important for when a business decides to adopt digital transformation technologies. Collaboration and environmental scanning were rated very important by the scholars; however, the SMEs rated it only as important, with the highest standard deviation at 1.2, indicating a lack of consensus among the group.

The SME participants were also asked to choose the most important digital transformation technologies.

Table 8.

No.	Item	Mean		Standard Deviation		Mode	
		Scholars	SMEs	Scholars	SMEs	Scholars	SMEs
1	Training on types of digital technologies, benefits, and challenges and how to use these technologies	4.2	4.4	0.9	0.8	5	5
2	Competitive pressure	3.8	3.7	0.6	0.9	4	4
3	Resource availability	4.3	3.8	0.7	0.9	4	4
4	Creativity and innovation	4.3	3.9	1.1	0.8	5	4
5	Business culture	3.8	4.2	1.1	0.8	5	4
6	Change management	4.0	4.2	0.9	0.8	4	4
7	Leadership	4.3	4.5	0.7	0.9	4	5
8	Collaboration	4.3	3.3	0.8	1.0	5	3
9	Environmental scanning	4.0	3.3	1.0	1.2	4	2

Table 8: Additional internal organizational factors in adopting digital transformation technologies

Table 9 depicts the SA and NL SME perspectives on the types of digital transformation technologies that are crucial for adoption by SMEs.

Table 9 indicates that there was agreement on the major types of digital transformation technologies that should be adopted by SMEs; however, all five SA SMEs rated machine learning as important, and two NL SMEs rating it as not important, with a high standard deviation of 1.3 indicating a lack of consensus. Robotics had mixed responses between the two perspectives, with three SA and two NL SMEs rating it as important and one SA and two NL SMEs rating it as not important, also indicating a lack of consensus, with another high standard deviation of 1.3. Furthermore, SA SMEs rated blockchain as important, but NL SMEs rated this as not important.

As mentioned previously, it is important to understand the difference between a traditional business model and a business model innovated by digital

transformation technologies. The scholars were asked what possible benefits or risks they saw of a business model innovated through digital transformation compared to a traditional business model. The results are presented in Figure 2.

Based on Figure 2, it can be substantiated that digital transformation-induced business model innovation may result in an increase in speed from production to customer relationship management while using limited resources. It may better allow an SME to operate in real time, be more agile, and exploit economies of scale, and may make it possible to increase value for their stakeholders. Taking on more risks was identified by only 17% of the participants as a distinguishable factor.

## Discussion

The ongoing digitalization of business and society

Table 9.

No.	Item	SA SME's			NL SME's		
		Mean	Standard Deviation	Mode	Mean	Standard Deviation	Mode
1	Digital applications	4.2	0.4	4	4.3	0.5	4
2	Cloud solutions	4.8	0.4	5	4.1	0.7	4
3	Sales automation	4.0	0.0	4	4.0	0.6	4
4	Cyber security	5.0	0.0	5	4.0	0.6	4
5	Machine learning	4.4	0.5	4	3.6	1.3	5
6	Big data	4.6	0.5	5	3.6	1.0	4
7	Artificial intelligence	4.4	0.5	4	3.4	1.3	3
8	Internet of Things (IoT)	4.8	0.4	5	2.7	1.0	3
9	Blockchain	3.8	0.4	4	2.4	0.5	2
10	Robotics	3.8	1.3	5	3.1	1.1	3

Table 9: SA and NL SME perspectives on adoption of digital transformation technologies

has a considerable impact on organizations, and also on SMEs, which struggle to capitalize on opportunities presented by digital transformation (Kesting and Günzel-Jensen, 2015). These opportunities require SMEs to adapt and rethink their existing business models through incorporating digital transformation technologies, and to bundle these technologies coherently as a digital transformation concept or approach (Crowley et al., 2017). This study aimed to answer the research question: Which internal organizational factors drive the renewal of SMEs' business strategy and culture to support their digital transformation trajectory? To answer the research question, a Delphi study sought consensus among SA and NL scholars and owners/employees of SMEs regarding the concepts of and relationships between the concepts in this research question. The literature-based and Delphi-based empirical results

indicate that digital transformation depends on several internal organizational factors linked to the following two organizational drivers for implementation: (a) renewal of business strategy (e.g. Bharadwaj et al., 2013; Matt et al., 2015; Sebastian et al., 2017), and (b) renewal of business culture (e.g. Hock et al., 2015; Tuukkanen et al., 2022; Vogelsang et al., 2019). Below we elaborate further on these and reflect on the relevant literature framework.

### Renewal of business strategy as an internal organizational factor

The renewal of business strategy was identified as critical by the panel in our Delphi study, and emphasis was placed on the need to develop a digital transformation strategy and an action plan to implement and execute the strategy. The core internal organizational factors that drive digital transformation for

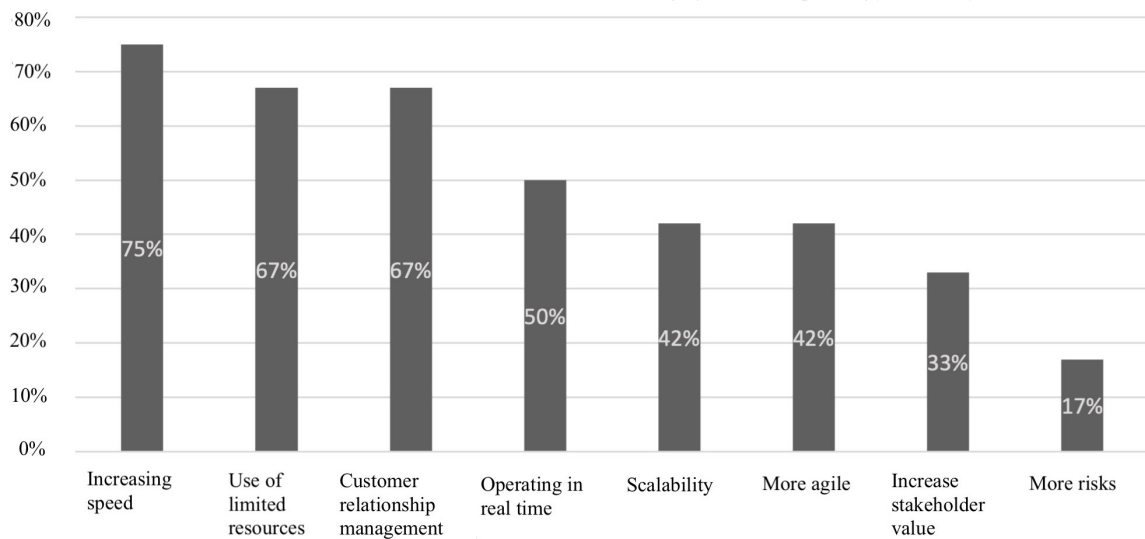


Figure 2:

business model innovation for SMEs to renew their business strategy are (a) pursuing a digital transformation strategy consisting of a coherent approach for adopting and embedding digital transformation technologies (for the overview of digital transformation technologies see Table 9), and possessing the (b) organizational structure, (c) dynamic capabilities and (d) resources to embed this digital transformation strategy in the business activities of the SME.

These specific factors found in the empirical study are in line with the more general insights from the literature. Latifi and Bouwman (2017) argue that business models are the reflection of strategy execution; following this argument, it can be substantiated that business model innovation is a reflection of an SME's digital transformation strategy. When renewing an SME's strategy, it is important to consider a variety of factors within the business model, such as the product offering, customer relationship and an organizational structure that allows for change, flexibility, and skills development, as identified by the panel. Digital technologies allow businesses to build a close relationship with their customers and a fine-grained understanding of their needs (Klos et al., 2021). Thus, customer needs should remain central by keeping the product offering in mind before and during the transformation process and determining if the product can be used as is, should be re-designed, or if a completely new product is needed. If a redesign is needed, it can be achieved through digitally supported co-creation, as identified by the

panel, and in line with research of Khin and Ho (2018). Co-creation is defined as the joint development of new products, the ideas for which come from the consumers through the collection of customer feedback (Ruiz-Alba et al., 2019). According to Chesbrough (2010), business model innovation is eventually about change management; this process takes place through continuous experimentation and trial and error, which will ultimately be achieved with the appropriate managerial support.

### Renewal of business culture as an internal organizational factor

To execute and implement the change process, the panel in our Delphi study identified that a well-aligned strategy in harmony with the business culture should be in place, as previously supported by Sow and Aborbie (2018). The core internal organizational factors that drive digital transformation for business model innovation as identified through the Delphi study for SMEs to renew their business culture are (a) continuous openness to the adoption and embedding of a coherent set of digital transformation technologies (for the overview of digital transformation technologies see Table 9), and (b) leadership, (c) training programmes, and (d) collaboration and (e) creativity incentives aimed at supporting this process of adoption and embedding.

These specific business strategy and business culture renewal-related internal organizational factors

found in the empirical study align with more general insights from literature. Demirkan et al. (2016) argue that digital transformation requires significant changes to the organization, which will require a change of the business strategy, and this can be difficult to achieve without major reworkings of the business culture and processes. The transformation process of the business model should be implemented throughout the entire business; however, this will require employees to change and adapt (Latifi and Bouwman, 2017). The panel identified that leadership is critical in any change process, and the right leadership in place should enable employees to embrace the adoption process more effectively (Sow and Aborbie, 2018). To execute business culture changes effectively, companies will require leaders who will frame a culture supporting digitalization in different forms (El Sawy et al., 2020). This is also in line with the need for creativity and innovation which will bring people and ideas together, allowing them to experiment and experience new technologies and capabilities in a safe environment (Ashwell, 2017).

### Propositions

The findings of the research led to the formulation of the following literature-based and empirically grounded twofold proposition:

Digital transformation-induced business model innovation in an SME is driven by:

1. the renewal of the strategy of the SME, which entails (1a) pursuing a digital transformation strategy consisting of a coherent approach for adopting and embedding digital transformation technologies, and possessing the (1b) organizational structure, (1c) dynamic capabilities, and (1d) resources to embed this digital transformation strategy in the business activities of the SME;

and

2. the renewal of the culture of the SME in which (2a) continuous openness to the adoption and embedding of a coherent set of digital transformation technologies is central, and (2b) leadership, (2c) training programmes, and (2d) collaboration and (2e) creativity incentives are aimed at supporting this process of adoption and embedding.

### Contributions, limitations, and avenues for future research

The literature calls for research that develops knowledge and insights regarding the internal organizational factors that drive digital transformation for business model innovation in SMEs (e.g. Bin and Hui, 2021; El Hilali et al., 2020; Gasperlin et al., 2021; Li et al., 2018). This study addresses this call and finds multiple internal organizational factors pertinent to business strategy renewal and business culture renewal that can stimulate the process of digital transformation-induced business model innovation in SMEs. Researchers can take these findings as a basis for future research in SMEs in the same or other countries and types of economies. They can also conduct in-depth research into the antecedents of these factors and the more precise effects of the factors on how digital transformation contributes to and can be integrated with business model innovation in SMEs. Managers and professionals in and around SMEs in practice can benefit from the research insights by considering the identified factors when introducing, further developing, and innovating the digital transformation-induced business models in their SMEs.

Next to the contributions, this research also had its limitations. It was set up based on two internal organizational factors from the literature, i.e. business strategy and culture, and several factors within these two basic factors were found. This focus excludes other possible literature- and theory-based search directions. The use of other theoretical starting points in the search for internal organizational factors, for example from the dynamic capability approach (see Teece et al., 1997), the resource-based view of the firms (see Barney, 1991), or from effectuation theory (see Sarasvathy, 2001), would imply a different starting point and lead to different outcomes and clustering of outcomes. The results of this research are therefore indicative and further research is needed to arrive at deeper analytically valid insights. In addition, the research in this paper assumes overlap between digital transformation and business model innovation (see Eksell and



Härenstam, 2017), but does not pay attention to contexts in which this overlap is thin or not present at all. Follow-up research could study the possibility for SMEs to innovate their business model by using the collection of digital transformation technologies as well as technologies, approaches, and methods that do not belong to this collection. Finally, the Delphi research was conducted with a limited number of representatives of academic institutions and SMEs of an emerging (SA) and a developed (NL) economy. This implies that results are indicative and have limited general analytical validity for SMEs in these and other emerging and developed economies. Future research is needed, in the same and other countries, with different qualitative and quantitative research methods to arrive at broader, deeper, and better generalizable insights.

## Conclusion

This study investigated which internal organizational factors drive the renewal of business strategy and business culture to contribute to digital transformation for business model innovation in small and medium-sized enterprises (SMEs). It built on a general literature study and a Delphi study from both a South African (emerging economy) and a Dutch (developed economy) perspective. For the Delphi study a questionnaire was used to query the commonly cited organizational drivers and internal organizational factors that contribute to digital transformation for business model innovation in SMEs in emerging and developed economies. The literature and Delphi study identified that there are two core internal organizational factors that drive digital transformation for business model innovation in SMEs: (a) a renewal of business strategy and (b) a renewal of business culture. Various internal organizational factors within these drivers were identified. The internal organizational strategic factors this literature-based and empirically grounded study identified for SMEs are (a) pursuing a digital transformation strategy consisting of a coherent approach for adopting and embedding digital transformation technologies, and possessing the (b) organizational structure, (c) dynamic capabilities, and (d) resources to embed this digital transformation strategy in the business activities of the SME. The internal organizational

cultural factors the literature-based and empirically grounded study identified for SMEs are a culture in which (a) continuous openness to the adoption and embedding of a coherent set of digital transformation technologies is central, and (b) leadership, (c) training programmes, and (d) collaboration and (e) creativity incentives are aimed at supporting this process of adoption and embedding. Researchers can use these drivers and factors as a basis for future research. For practitioners, the findings provide a guideline for (re)arranging business activities in SMEs to enable digital transformation-induced business model innovation.

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