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Unpacking the Disruption Process: New Technology, Business Models, and Incumbent Adaptation

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ABSTRACT Despite the growing importance of digital transformation and the notion of disruptive innovation, strategy literature still lacks a more complete picture of how incumbent organizations adapt their business models after disruptions. This research sheds light on this important process by analyzing a major Italian news media publisher reacting to the advent of the internet and the emergence of new business models by entrants into the industry (1995–2017). We specifically examine: (1) the drivers and impeding factors of business model adaptation; (2) how incumbents change strategies to cope with different components of the disruption process; and (3) how a closed business model can be renewed to develop an open, platform-based business model to seize external opportunities, incur lower costs, and fend off disruptors. This study contributes to the burgeoning literature on disruption, business models, and platforms.

Keywords: digital platforms, disruptive innovation, incumbent adaptation, open business models, value creation and capture

> 'We can no longer make a lot of money from a few readers, but we will make relatively little money from many more readers'
> *Jeff Bezos, chairman and CEO of Amazon and owner of The Washington Post.*
> *'The Future of Newspapers' conference, Italy, 2017, organized by GEDI and La Stampa.*

INTRODUCTION

A popular stream of research in strategic management has documented how challenging it is for incumbent firms to adapt to technological disruptions pioneered by new entrants (Christensen, 1997). Among a variety of reasons for incumbents' inertia in the face of disruptions, scholars have highlighted: resource dependence

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upon mainstream customers (Christensen and Bower, 1996), rigidity of existing routines and competences (Gilbert, 2005), demand uncertainty (Adner, 2002), institutional tensions in managing the different organizational demands of disruptive innovations (Markides, 2006), as well as economic incentives and reliance on established value networks (Hill and Rothaermel, 2003). Together, these elements act as inertial forces impeding profound modification of existing business models, which is typically required after disruptions (see, e.g., Chesbrough and Rosenbloom, 2002; Christensen et al., 2016; O'Reilly and Tushman, 2016). For instance, a book retailer such as Borders, which filed for bankruptcy in 2011, failed to modify its brick-and-mortar business model by not developing a digital platform with integrated distribution to respond to Amazon's new model of online book retailing and home delivery.

Despite the importance of the topic and the recent attention on business models in strategy literature (Wirtz et al., 2016; Zott et al., 2011), we still only have limited empirical evidence of how companies adapt their models (Foss and Saebi, 2017) and how they accomplish this modification in the face of disruptive innovations. Moreover, the problem is managerially relevant because incumbents in several industries are seeking to renew their business models after the advent of digital disruptors such as Facebook, Netflix, Udacity, and Uber (McKinsey, 2015). A systematic understanding of the antecedents and the processes through which firms adapt their business models is necessary and missing (Doz and Kosonen, 2010; Schneider and Spieth, 2013; Sosna et al., 2010). Therefore, we decided to tackle this important issue from the perspective of an incumbent organization by posing the research questions: *What are the triggers that stimulate incumbents' reactions after disruption? How does the disruption process unfold, and how does business model adaptation evolve over time?*

To address these questions, we conducted an in-depth longitudinal study of a major news publishing house in Europe, namely, the Italian company GEDI Gruppo Editoriale SpA (hereafter: GEDI). We selected an incumbent in the media industry because this sector was historically well protected and now it has been profoundly disrupted by the internet (Forbes, 2015; The Economist, 2011) with a dramatic impact on publishers' business models (The Wall Street Journal, 2016). GEDI is a large and traditionally vertically integrated company owning three national newspapers (one being *La Repubblica,* the Italian equivalent of *The New York Times* in the US and *The Guardian* in the UK), 13 local newspapers, three radio stations and a TV station, several digital properties, an advertising house, and several downstream printing plants. To examine how the company transformed its original business model, we considered a long-time horizon (1995–2017) that includes the early advent of the internet, when new digital tools were first made available, and its subsequent developments, when new entrants became stronger (e.g., Google or Facebook). Our approach can be seen as a quasi-experiment in a natural laboratory setting because we were able to observe the effects of an exogenous treatment (the disruption caused by the internet) on a company's business model and to track the strategic reactions put into practice by the company.

Our study presents a series of important findings. First, we disentangle two separate forces in the disruptive process: (1) the initial advent of disruptive technologies; and (2) the subsequent entry of disruptors introducing new business models. We specifically highlight the mechanisms through which these forces trigger business model adaptation (BMA) in incumbent organizations. The availability of disruptive technologies offers new opportunities, favoring 'incumbents' experimentation' with new business models (that is, new forms of value creation and capture). The emergence of entrants employing new disruptive models tends to represent a threat and induces incumbents to respond more defensively, through 'alliances and acquisitions' to speed up the adaptation process. This first main finding addresses the identified gap in business model literature regarding the drivers and mechanisms of BMA after disruption (see e.g., Foss and Saebi, 2017). It also extends the analysis of disruptive innovation by breaking down the process into two separate components: technologies and business models (see also Markides, 2006 for a similar conceptual point). Furthermore, it empirically reveals the effects on the incumbents' adaptation process, in terms of opportunities and threats, leading respectively to stand-alone experimentation and alliances/acquisitions.

The second major finding relates to how incumbents reconfigure their models after disruption. We examined the specific case of disruptions in manufacturing, distribution, and sales—that is, the downstream complementary assets of vertically integrated incumbents (see Teece, 1986). We argue that, when disruption occurs in factors of production, incumbents tend to increase external knowledge access. This pattern occurs because disruption in the factors of production results in positive external economies (Marshall, 1920), as the new technologies, such as the internet, are available to all. To create and capture value from the new technologies, incumbents increase external knowledge access. In sum, we provide theoretical explanations and empirical evidence of the phenomenon of 'opening a business model' to external sources. We also acknowledge the limits of this open strategy and the importance of maintaining a balance between internal and external knowledge sourcing (that is, 'mixed closed-open' business models). These findings contribute not only to incumbent adaptation literature, but also to studies on open business models (Chesbrough, 2006; Vanhaverbeke and Chesbrough, 2014) and the tensions between conflicting logics (Sauermann and Stephan, 2013).

A related finding of the new mixed closed-open business model after disruption is that we document how incumbents can react to disruptions by transforming a product-company into a multi-platform business (e.g., Gawer and Cusumano, 2002; Schlesinger and Doyle, 2015). Based on our in-depth case study, GEDI moved from being a vertically integrated company based primarily on internal production to an organization that manages and interconnects multiple platforms, audiences, and advertisers through a mixture of internal and external knowledge producers.

Our findings are generalizable to many industries disrupted by the internet and related digital transformations. Sectors such as the music business, movies,

the hospitality industry, or the education industry, have in fact all confronted a two-phase disruptive process. Consistent with what we predict, most of the incumbents in these industries have reacted with initial stand-alone experimentation and subsequent alliances and acquisitions, while developing platforms and increasing their access to external knowledge sources.

DISRUPTIONS AND BUSINESS MODELS

Disruptive Innovations

The concept of disruptive innovations has received considerable attention among both practitioners and scholars alike (e.g., Ansari et al., 2016; Christensen, 1997, 2006 ; Danneels, 2004; Henderson, 2006; Markides, 2006; McKinsey, 2015). The phenomenon refers to a unique type of innovation in which a specific process takes place and incumbents are ultimately disrupted by entrants (Christensen and Raynor, 2003). In their seminal paper on the disk drive industry, Christensen and Bower (1996) describe disruptive technologies as new technologies introducing new performance parameters that satisfy emergent customers, but that underperform on existing attributes that satisfy mainstream customers. Over time, disruptive technologies also improve on the attributes demanded by the mainstream market, hence invading each market segment from the bottom up. One key characteristic of disruptions is that the underlying technology improves faster over time than improvements are demanded by customers. This factor in turn explains why a disruptive technology moves from the low end of the market to the high end over time. Disruptive technologies tend to be commercialized by entrants, while incumbents remain trapped in sustaining technologies and eventually fail (Christensen, 2006; Christensen and Bower, 1996).

This phenomenon has generated a stimulating debate among scholars regarding the specific definition of a disruption (e.g., Danneels, 2004; Govindarajan and Kopalle, 2006; King and Baatartogtokh, 2015). In his subsequent works, Christensen has responded to the debate and extended the concept of disruptive technologies to the broader category of 'disruptive innovations', also including products and business models (e.g., Christensen and Raynor, 2003; Christensen et al., 2015). An interesting application of this extended definition is the paper by Ansari et al. (2016), in which the authors studied the challenge of entrants with imposing disruptive technologies and business models to an ecosystem of incumbents in the TV industry.

'Disruptive technologies' and 'disruptive business models' create 'different kinds of markets, pose radically different challenges for established firms, and have radically different implications for managers' (Markides, 2006, p. 19). Hence, as Markides (2006) observes, it is useful to break down the concept of disruptive innovation into its more fine-grained components, which is exactly what we did in our study. We distinguish between the emergence of disruptive technologies and the arrival of entrants introducing disruptive business models to exploit the new

technology. Theoretically, we separate these two phenomena because they are likely to occur during different moments in time and have different implications for the incumbents' adaptation processes.

We refer to 'disruptive technologies' by following the original definition by Christensen and Bower (1996, p. 202): 'technologies […] which disrupt an established trajectory of performance improvement, or redefine what performance means, are called disruptive technologies.' Using the same logic, we here introduce the definition of disruptive business models as business models that disrupt an established model or redefine what value creation and capture mean. Consistent with prior research, both disruptive technologies and disruptive business models are likely to be introduced primarily by entrants (Ansari et al., 2016; Danneels, 2004). Moreover, disruptive technologies are likely to stimulate subsequent development of disruptive business models, as we explain below.

Business Model Adaptation (BMA)

The literature on business models has begun to hone in on the main characteristics of this construct (Wirtz et al., 2016; Zott et al., 2011). There are two key dimensions to a business model: value creation and value capture (Chesbrough and Rosenbloom, 2002; Teece, 2010; Zott and Amit, 2007). More formally, Teece (2010) defines a business model as 'the design or architecture of the value creation, delivery, and capture mechanisms' of an organization (p. 172).

Scholars have also identified several subcomponents of the business model construct. According to a recent review by Wirtz et al. (2016), the components with the most consensus are resources (core competencies, assets, architecture), value propositions, and strategy and structure. These subcomponents are all relevant to value creation and capture—the two dimensions guiding our investigation. The literature has also provided evidence of the important role of business models in firm performance (Zott and Amit, 2007, 2008), competitive advantage (Chesbrough and Rosenbloom, 2002; Osterwalder and Pigneur, 2010; Teece, 2010), and innovation at the firm and industry level (Chesbrough, 2006; Gambardella and McGahan, 2010).

However, disruptions may affect the efficacy of existing business models. Doz and Kosonen (2010, p. 370) argued that 'strategic discontinuities and disruptions' require companies to innovate their business models. Our research investigates the mechanisms of this transformation. BMA is a complex and challenging process because inertial forces tend to suffocate the emerging innovations. As documented by Tripsas and Gavetti (2002), Polaroid failed to make a transition to digital cameras because it remained trapped in its existing 'razor-blade' business model of chemical films, in which profits were made by selling films (a consumable) through a structured retailing network. An effective commercialization of digital cameras would have required them to embrace a new 'hardware-based' business model. Similarly, Chesbrough and Rosenbloom observed, 'The failure of incumbent firms to manage effectively in the face of technological change can be understood as the difficulty these firms have in perceiving and then enacting

new business models when technological change requires it (2002, p. 532)'. In a recent review on business model innovations, Foss and Saebi (2017) argued that studying the 'innovation' of a business model raises a number of new questions including a crucial one: 'What are the drivers, facilitators, and hindrances of the innovation of a business model?' (p. 201). Schneider and Spieth (2013) call for additional research on 'the process and elements of business model innovation as well as its enablers' (p. 134). Consistent with these important research gaps, we investigate the drivers and the process of BMA after disruption.

We coin the term BMA (business model adaptation) because, in the case of an incumbent, the firm is asked to adapt the business model rather than to invent it from scratch. Moreover, the complex process of adaptation, if not well executed, can bring about incumbent failure. We refer to BMA by using the general definition provided by Casadesus-Masanell and Zhu (2013, p. 464) for business model innovation ('the search for new logics of the firm and new ways to create and capture value'), which in the case of BMA should be interpreted from the perspective of incumbent firms attempting to adapt. In sum, we study how incumbents adapt their business model by finding new ways of creating and capturing value. At a more granular level, the new ways to create and capture value are likely also to require changes in the subcomponents of resources, structures, and strategies of a company—as our findings reveal.

An additional specification of business models is the distinction between closed and open models. Such a distinction is important because many companies today are transforming a previously closed model into a more open business model. We thus interpret this transformation as a case of BMA. Chesbrough (2006, pp. 2–3) introduced the concept of open business models to describe a situation when a company 'uses the division of labor to create greater value by leveraging more ideas (external ideas) and to capture greater value by using key assets, resources, or positions not only in the company's own business but also in other companies' businesses.' The open business model is the opposite of a more traditional closed business model in which incumbents commercialize only their own internal knowledge through proprietary complementary assets (Teece, 1986), generally along a vertically integrated firm value chain.

RESEARCH SITE AND METHODS

We took a historical perspective (Van de Ven and Poole, 1990) to deconstruct the process of BMA in an incumbent media organization. In particular, we conducted a longitudinal case study (Yin, 2003) of the Italian publisher GEDI covering the period 1997–2017. Given the scant understanding of the relationship between disruptive innovation and BMA, an inductive and field-based approach was particularly suited to develop a new theory (Eisenhardt, 1989; Glaser and Strauss, 1967). We collected rich data about GEDI and its ecosystem from multiple sources (interviews, archival, and observations), and we tracked the major events and actions undertaken by the company to adapt. These data were particularly useful to

develop our process model, given that process theorization needs to abstract from events, activities, and choices occurring in time (Langley, 1999). An abridged version of the new activities and projects launched by GEDI is presented in Table 1.

Research Site and Data Collection

We studied GEDI and the newspaper industry for several reasons. First, digital disruption has devalued newspapers' business models worldwide, calling for a profound readjustment (Seamans and Zhu, 2014; The Economist, 2011). The advertising revenues of the global newspaper industry (offline plus online) have decreased by about 42 percent between 2005 and 2015 (The Wall Street Journal, 2016), and the situation was similar in Italy (where GEDI operated). Between 2000 and 2012, the offline advertising revenues of Italian newspapers plummeted by 41 percent (FIEG, 2001, 2013), and the new online ad revenues accounted for only 10–15 percent of the total ad revenues in 2015. The number of physical copies of newspapers sold declined by 33 percent between 2000 and 2012, but their audience and reach have grown with the internet (Audipress, 2012). Second, news publishing companies were organized through a closed or Chandlerian model of production and commercialization (Chandler, 1993), while the web has enabled open journalism (OECD, 2007) through new toolkits (Von Hippel and Katz, 2002), and has favored the rise of digital platforms (Gawer and Cusumano, 2002). These changes challenged the existing publishers' business models, which, in turn, offers us a unique opportunity for studying BMA. Third, GEDI has been a fast adopter of digital technologies and new business models, thus representing an 'extreme case' where the adaptation process is 'transparently observable' (Eisenhardt, 1989). This approach in turn helped the company to achieve a more sustainable advantage. Indeed, in 2016 GEDI's revenues were 705 million euro with 11.9 million in profits, 2,488 employees, and operations in all media segments (print, digital, radio/TV, and advertising). In addition to performing better than its competitors Gruppo24Ore and RCS Media Group (which both reported losses over the entire period), GEDI was also the only Italian publisher growing during the disruption period, mainly through alliances and acquisitions of disruptors and other newspapers. It is also important to notice that GEDI adapted better to the internet disruption than its competitors, relatively, for other reasons than scale advantage (e.g., RCS Media Group had a similar large scale but was selling off parts of its businesses) or bargaining power advantage (e.g., Gruppo24Ore had an equally strong bargaining power, being owned by the Italian Confederation of Industries, but had negative profits in 2016 of -92.6 million euro). The main reason for this difference was that GEDI had a higher propensity to innovate, and top management who supported experimentation, which made their company ideal for a BMA study. Of course, mistakes were also made by the company and we examined them to discuss the possible sources of tension and failure during an adaptation process.

We had access to all sorts of primary data at GEDI, from in-depth personal interviews to internal and confidential archival documents (all types of reports,

Table I. New ventures and projects launched by GEDI to open its business model

New ventures/ Projects	Degree of Openness *									Outcome	Representative Quotes
	1	2	3	4	5	6	7	8	9		
Experiment with live chats, forum, blogs	x	x	x		x				mid	Success	"Our local newspaper *La Provincia Pavese* was the first in Italy in 2011 to use the crowdsourcing tool Ushahidi, a software originally created in Kenya after the 2007 political elections to geospatially report critical events. Our newspaper is experimenting with it through the call for readers 'Racconta Pavia', in which we ask to notify what happens in the city by locating the information on a 'crowdmap'. Our newsroom then coordinates all citizens' contributions." (Project manager and information architect)
Platform for school newspapers: *RepubblicaScuola*	x	x	x	x	x	x	x	x	high	Success	*Repubblica@scuola* is under the radar of our newsroom, from which it has always received great support. From a pure profitability standpoint, it is now a cost, but we also look at the project as a service and a way through which we develop new competences and engage with a huge number of schools. Now we are working with Microsoft for a plug-in tool to be inserted on our platform to allow students to generate crowdsourced lecture notes! Our privileged relationship with schools will offer us an edge over competitors to launch businesses related to online education. (General manager of digital division)
Platform for personalized news: extending *Fishwrap*	x		x	x	x				mid	Failure	Almost five years before Facebook was invented, Kataweb had already created the first social network! [...] We built a platform through which users could create a profile, comment, and interact among themselves, and see what other users valued the most—essentially it was Facebook! (GEDI's digital strategist)

New ventures/ Projects	Degree of Openness *									Outcome	Representative Quotes
	1	2	3	4	5	6	7	8	9		
Self-publishing book platform: *ilmiolibro.it*	x	x	x	x	x	x	x		high	Success	But we did something more: we put our best authors in contact with external publishers. When the community of *ilmiolibro.it* judges a book particularly well, we connect our author with the major book publisher in Italy, Feltrinelli, to sell the book through its physical bookshops. (Head of digital entertain ment)
Participatory journalism platform: *Reporter*		x	x		x				mid	Failure	People voluntarily give information when you can protect them and somehow reciprocate. You acquire the right by showing that you listen to them. The key is to build trust in the relation-ship. A real participation is possible when you are able to establish a dialog with contributors. (Project manager and information architect)
JV with *The Huffington Post*: *huggingtonpost.it*	x	x	x	x	x	x			mid	Success	The social media function is centralized as I act as the social media strategist for all external platforms—Facebook, Twitter, etc. By using an advanced social media dashboard, I constantly monitor the traffic of our pieces, also using Google to boost the traffic, and I can maintain our Facebook page updated every two minutes with a new post. This shows how open we are to social sharing, rather than keeping the content to ourselves, and how much attention we give to going viral. There is also another difference compared to a traditional newsroom: while in an online newspaper there are graphic designers, journal-ists, and assemblers of content, each executing a specialized task, at the *HuffPost* each journalist has all the tools to do everything, from writing to cutting and editing a piece together with pictures. This also reduces our costs! (Social media editor of *huffingtonpost.it*)

(*Continued*)

Table I. (Continued)

New ventures/ Projects	Degree of Openness *									Outcome	Representative Quotes
	1	2	3	4	5	6	7	8	9		
Acquisition of *mymovie.it*	x	x	x	x	x	x	x		high	Success	Social TV is not so much about the devices and channels of video content but about the idea of the internet as a platform for discussion and interaction with TV programs and its cast. (Head of digital entertainment; quoted in *L'Espresso*, 2014)
Video syndication platform: tech partner *Taboola.com*	x		x		x	x			mid	Failure	NEW YORK, Apr. 23, 2014: Gruppo Editoriale L'Espresso, a premier digital publishing group in Italy, is changing the way their audience discovers digital content with a strategic partnership with Taboola, a leading content discovery and distribution platform. Taboola's personalized and relevant content recommendations will first appear on Italy's leading online news website, *Repubblica.it*, before rolling out to all other Gruppo Editoriale L'Espresso digital properties. As part of the partnership, the companies will also join forces to bring content discovery to the Italian marketplace working with other national and local publishers (Press release, *Taboola.com*)

*The "x" indicates where the attribute was present. The eight attributes to qualify the degree of openness of each venture were: 1=external innovation; 2=user based; 3=enabling tool or platforms; 4=intrinsic motivation; 5=lower cost; 6=collective effort; 7=distributed control; 8=intellectual property

business plans, and financial records), and observational data. The period of study was 1995–2017. Archival data were collected from 2013–2017, and interviews and observational data were gathered from 2013–2015. Our multiple data sources were constantly triangulated to improve accuracy (Jick, 1979).

We conducted 46 face-to-face interviews, 38 with GEDI's personnel (from all functions and hierarchical levels) and eight with informants from disruptive entrants and industry associations (see Supporting Information Table A1 in the online appendix for an abridged list of our interviewees). Follow-up emails were sent when clarification was needed. We interviewed GEDI's president; CEOs of the corporation and its subsidiaries; executives from plants, advertising, and the digital divisions; and journalists and managing editors. Interviews were conducted in different company locations around Italy and in the US and lasted on average 90–120 minutes. Each interview was taped and transcribed, and the content was then analyzed. Through open-ended questions, we asked about the company's print business, the implications brought about by the internet, the opportunities and challenges that GEDI faced, and the practical actions and businesses launched to reinvent the company. To mitigate concerns with retrospective biases (see Huber and Power, 1985), we triangulated and reinterpreted what our informants said using the other rich data we had (e.g., archival data and historical interviews conducted by others between 1995 and 2013 that appeared in the press or online, as well as in audio-visual format). We also repeated the same questions to different informants to validate the accuracy of responses and fully understand the phenomenon (Glaser and Strauss, 1967). Part of the data collection and observation was done in real time between 2013–2016.

Regarding our archival data (period: 1995–2017), we consulted the company's annual reports; internal reports; press releases; investment banking reports; national and international books on the company history and on media in general; specialized websites (e.g., the PEW's yearly State of the News Media and the Perugia's annual International Journalism Festival); specialized periodicals and yearbooks (e.g., *Prima Comunicazione*); and media coverage of GEDI. This extensive effort was needed to understand the complex transformation in detail.

The third effort of data collection referred to switching the locus of observation to the external environment to better contextualize GEDI's strategic actions. To examine how the external environment evolved, we first analyzed most of the public documentation available about the entire Italian newspaper industry, and then visited and directly interviewed representatives from industry associations such as the Federation of Italian Publishers and Journalists (FIEG), industry agencies collecting audience data (e.g., Audipress and Nielsen Media Research), antitrust authorities (AGCM), and government agencies for communication (AGCOM). We also collected data and interviews with Italian and international industry entrants that were indicated as potential disruptors by GEDI or by other external sources. These additional interviews allowed us to understand the model of the disruptors, which were operating like platforms, enabling and exploiting content produced by others.

Analytic Strategy

We constructed a chronology of historical events and gradually populated a rich timeline (see Figure 1) which includes the major strategic projects and investments by GEDI (made both offline and online), the most significant market changes, and the entry of disruptors. We filtered and organized this chronological data through the lens of our emerging theoretical constructs and mechanisms (see Garud et al., 2002 for a similar approach). For each of the new projects, we tried to understand its nature and its contribution to BMA (i.e., how it contributed to new value creation and capture).

The analysis of our data revealed that most of GEDI's new online projects were using an open business model (Chesbrough, 2006; Vanhaverbeke and Chesbrough, 2014), whereas most of GEDI's new offline projects were using a more closed model (based on internal 'professional' production and commercialization). To assess the nature of each project, we consulted the literature on open business models and open innovation (e.g., Chesbrough, 2006; Vanhaverbeke and Chesbrough, 2014; von Hippel and von Krogh, 2003), which provided us with a list of attributes typical to open business models. The main attributes of open business models are: access to external knowledge sources, innovative role of users, support of enabling tools or platforms, intrinsic motivations, open approach to intellectual property, and the ability to incur lower costs. We used these attributes to qualitatively assess the degree of openness of each project (see Table I) and get an indication of the new value creation mechanisms of the new model. We also compared successful and unsuccessful projects to identify potential reasons of failure (e.g., clashes and conflicts between closed and open paradigms—see Sauermann and Stephan, 2013) and how the company learned over time (from phase 1 to phase 2 of the process).

Our analysis also required an interpretive understanding (Lincoln and Guba, 1985) of the consequences of disruptions through additional theories, until theoretical saturation was reached (Glaser and Strauss, 1967). To interpret the launch of GEDI's several online platforms (again see Figure 1), we consulted the theory of platforms and multi-sided markets (e.g., Ansari et al., 2016; Cennamo and Santalo, 2013; Parker and Van Alstyne, 2005), which allowed us to reveal the new value capture mechanisms of the new business model.

In the rest of the paper, we describe the original business model of newspapers (closed and vertically structured), how it was disrupted by the internet, and how GEDI renewed it overtime (towards a more open and platform-based model). We focus on the generative mechanisms of the process, considering the type of disruptive technology of this study (at the manufacturing and distribution/sales level). We conclude by illustrating the process model of BMA, which reveals how an incumbent can renew its value creation and capture strategies to react to both disruptive technologies and disruptive business models.

A PROCESS MODEL OF BMA AFTER DISRUPTION

Traditional News Publishing Model

The business model of newspapers can be conceived as a two-sided market in which newspapers act as physical platforms connecting readers and advertisers (Rochet and Tirole, 2003). Two-sided markets are typical of industries characterized by network externalities, such as radio, TV, internet portals, social networks, games consoles, or credit cards. Network externalities are present when 'the utility that a given user derives from the good depends upon the number of other users who are in the same "network"' (Katz and Shapiro, 1985, p. 424). In the newspaper context, positive network externalities exist because advertisers derive a utility when the number of readers increases, while readers are attracted only by content (Parker and Van Alstyne, 2005).

Using the value creation and capture dimensions of a business model (Teece, 2010), we can reinterpret the two-sided model of newspapers as a model in which value creation occurs by producing content for readers, and value capture is derived by commercializing content and the associated advertising. More specifically, publishers used their own newsrooms and journalists to create value for

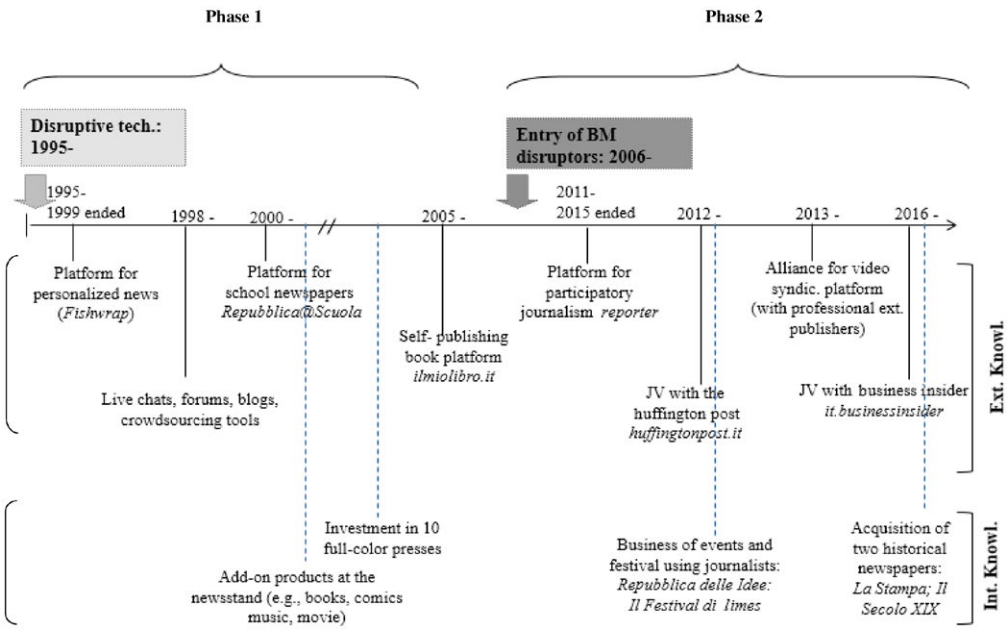

Figure 1. Timeline of new ventures by GEDI and major events, 1995–2016. Figure 1 illustrates all the strategic projects and investments launched by GEDI between 1995 and 2016, which belong to the two phases of our theoretical model. Moreover, Figure 1 differentiates between the projects contributing to open the business model (those within the 'external knowledge' bracket above) and those maintaining the closed model (those within the 'internal knowledge' bracket below) [Colour figure can be viewed at wileyonlinelibrary.com]

readers, while they used proprietary complementary assets to capture value. Value capture is possible when a company possesses specialized complementary assets, such as manufacturing, distribution, and sales (Teece, 1986). Large newspaper publishers typically owned specialized downstream assets in the form of printing presses, distribution (a portion of the wholesale distribution network), and sales people. In other terms, publishers were vertically integrated companies, from upstream content production (for value creation) to downstream manufacturing and commercialization (for value capture). Hence, they employed a *closed business model* (Chesbrough, 2006) because both value creation and value capture relied on internal resources and control/ownership. GEDI was not an exception: the company employed an average of 2,000 journalists and 450 advertising sales agents through the subsidiary Manzoni Advertising, and owned ten printing plants and part of the wholesale distribution.

The first novelty of our study derives from analyzing the effect on BMA of technological disruptions in manufacturing and distribution (Cozzolino and Rothaermel, 2018). The internet and related digital tools represent disruptive technologies because, if we apply the definition by Christensen and Bower (1996, p. 202), these new technologies 'disrupt the established trajectory of performance improvement' and 'redefine what performance means.' In fact, the established trajectory of improvement in publishers' prior 'manufacturing and distribution' was to increase print quality (color), speed, automation, and efficiency. Instead, the internet has redefined the meaning of performance with new attributes, such as by-directionality, real-time wide access, and audio-visual forms of sharing information freely. Coherent with the notion of disruptive technology, while these new performance attributes initially appealed only to a customer niche, over the years, they became attractive even for the historical newspaper customer base. This trend fits with the other characteristic of disruptive technologies—that they initially do not attract mainstream customers (Christensen, 1997).

Focusing on disruption of manufacturing and distribution assets, we were able to build on the concept of external economies of scale and externalities (Marshall, 1920) to explain why incumbents sometimes increase access to external knowledge after certain types of disruption. We find that incumbents are more likely to experiment and adopt the new technologies early when external economies emerge, rather than being inert and serving only their mainstream customers (Christensen and Bower, 1996; Danneels, 2004). The role of externalities after disruptions constitutes an important generative mechanism (Cornelissen, 2017; Garud and Kumaraswamy, 1993) of the BMA process examined in our case.

In his 2014 annual meeting with the publishers, the president of FIEG declared, 'The reasons behind the economic problems of publishing companies go beyond the 2008 financial crisis. The business model of newspapers needs to be reconceived.' In Figure 2 (left side), we offer a representation of the traditional business model, which has been disrupted by the internet. The value creation dimension (related to content production) has been challenged by the oversupply of free information online, which has reduced customers' willingness to pay

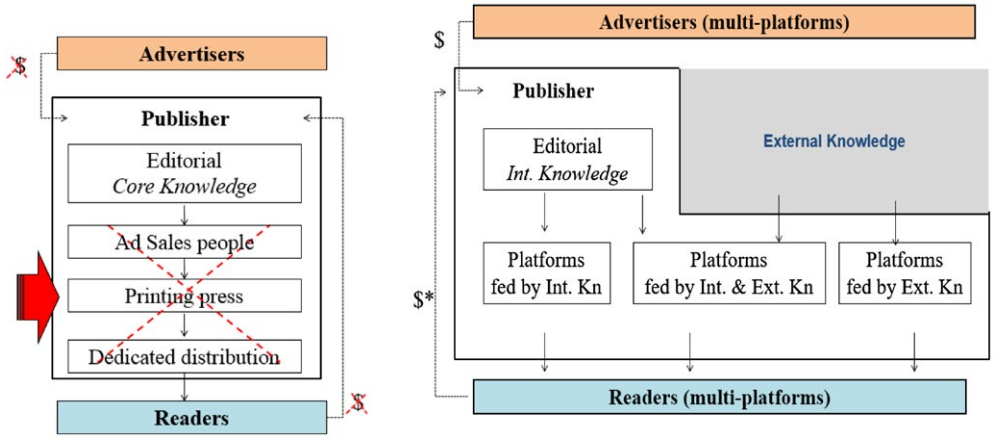

Figure 2. Old business model disrupted (left) and new business model (right). The old business model (on the left) was a closed model, in which value creation is derived from internal knowledge production, and value capture is derived from possessing specialized complementary assets. The new business model (on the right) is a more-open model, in which value creation is derived from a combination of internal and external knowledge, and value capture is derived from the development and interconnection of multiple platforms exchanging knowledge and customers' data [Colour figure can be viewed at wileyonlinelibrary.com]

online, while also substituting offline consumption. The value capture dimension (related to proprietary complementary assets of print, distribution, and sales) has been hindered by the new disruptive technologies, which publish and diffuse information online and sell ads through algorithms. Over time, the vertically integrated value chain of publishers has been disintegrated by a series of digital disruptors introducing new technologies and platform-based models to orchestrate publishers' content and ad spaces. The right side of Figure 2 represents how GEDI transformed its business model by 2017 to respond to these challenges. The new business model, common to other industries, is more open, employs a mixture of internal and external knowledge to create value, and uses platform-based strategies to capture value.

A Two-Phase Process Model

The process model that emerged from our study provides new insights into the nature of disruptive innovations and how incumbents can benefit from it through BMA. It is a two-phased model (see Figure 3). The generative mechanism of the entire process is the increasing openness of a business model to seize external economies of scale and externalities after disruption to manufacturing and distribution. The adaptation mechanism in phase 1 is stand-alone experimentation, which is different from the predominant governance mechanism of phase 2 (cooperation and acquisitions). Incumbents' adaptation in phase 2 is driven mainly by reactions to threats (from entrants with disruptive business models), whereas the stand-alone experimentation of phase 1 is consistent with opportunity perception (from available new technologies).

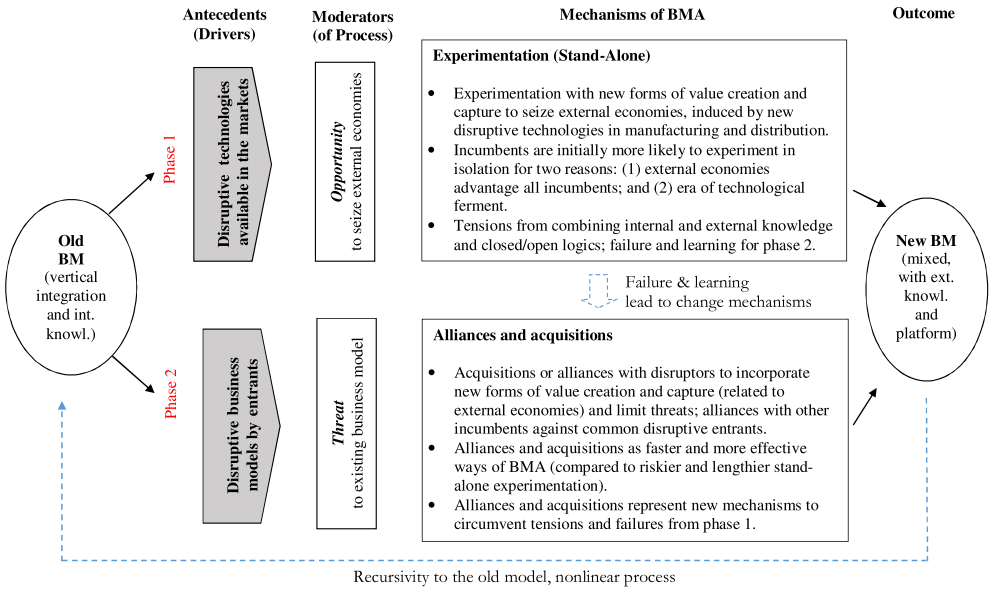

Figure 3. A simplified process of incumbents' BMA after disruption. Recursivity to the old model, nonlinear process [Colour figure can be viewed at wileyonlinelibrary.com]

Phase 1: Stand-Alone Experimentation after Technological Disruption (1995–2000)

Triggering event: Disruptive technologies in manufacturing and distribution. Since 1993, the internet has made available an endless number of disruptive technologies to produce and distribute. Early day inventions were the free content management systems (CSMs) to write content, and the RSS feed system to distribute them, on top of the new Transmission Control Protocol/Internet Protocol (TCP/IP). Consistent with the theory of disruption, these technologies were introduced by entrepreneurs and new entrants (e.g., Tim Berners-Lee and Netscape). Initially it was difficult to find appropriate business models to profit from them. In this context, we found that GEDI engaged in a strong experimentation effort with external knowledge sources to seize new opportunities.

Opportunities to seize external economies. From the perspective of vertically integrated incumbents, the new technologies represented new downstream 'factors of production'. In 1920 the economist Alfred Marshall theorized that, when new factors of production are made available to *all* competitors in an industry, external economies of scale and externalities emerge (see also Alcácer, 2006). Different from internal economies of scale, which derive from firms-specific production processes (e.g., Ford assembly line), external economies are induced by exogenous advancements for all firms (e.g., railroad infrastructure or the internet). Therefore, given their nature, we expect that disruptive technologies

related to the internet that challenge all incumbents' downstream assets (Figure 2, left side) generate external economies. Incumbents can seize opportunities for new product development, process innovation, and cost reduction by accessing external resources through new technologies, as opposed to focusing only on their internal production factors. These are important generative mechanisms for the entire BMA process. Consistent with our arguments, GEDI experimented with the new digital technologies early on, gradually adapting its model by increasingly accessing external knowledge sources, developing new businesses and platforms to exploit externalities, and lowering its costs. In the following section, we provide supporting evidence and further theoretical insights.

New venture experiments using external sources. In 1996, GEDI's newspaper *La Repubblica* experimented with the first real-time online coverage of Italian national elections, concomitantly with a similar experiment by *The Washington Post* in 1996 for the US Presidential elections. The positive audience engagement convinced GEDI's top management to allocate three journalists to create one of the first online newsroom to write for the web, *repubblica.it*, which launched in 1997. The main competitor *Corriere della Sera*, endowed with a similar readership base and resources (belonging to the other large publisher RCS Media Group), waited until 2001 before producing dedicated content for the web, and the smaller competitors simply posted a PDF replica of their printed paper online until 1999.

In 1998, the company experimented with the first 'live chat with readers,' also supported by 'blogs and forums,' to collect citizens' opinions regarding the national education reform. In 1999, after investing significant resources and founding the technology subsidiary Kataweb (which employed 100 people), GEDI introduced one of the first internet portals (*kataweb.it*) and offered blogging tools, email, and voice over IP services (VoIP) to users (ahead of the launch of Blogger in 2001 and WordPress in 2003). The innovation and development deputy director recognized:

> *'We introduced a number of innovations largely ahead of our time. The company was the opposite of myopic. We experimented with 'socials' and online videos in a time when the internet connectivity was still very slow and the interaction with citizens was unconceivable.'*

Hence, a first mechanism enacting the BMA process in phase 1 is experimentation, to benefit from the external economies. In particular, experimentation is likely to include new external knowledge sources (e.g., users, citizens, students) but also internal knowledge (e.g., journalists).

Stand-alone experimentation using open platforms. A second and related mechanism of BMA in phase 1 is that the experimentation is made by stand-alone incumbents in competition among themselves (whereas in phase 2 incumbents are more

likely to increase cooperation and acquisitions, due to the raise of business model disruptors threatening their industry). Moreover, to better exploit the network externalities, incumbents are more likely to use open platform strategies (Boudreau, 2010) to create and capture new value (both in phase 1 and 2). All the digital projects launched by GEDI had these common features (see Figures 1 and 2, and Table I).

In 1994, GEDI started a period of experimentation that led to several digital projects, one of which was a platform for thousands of school newspapers (*Repubblica@scuola*). The experimentation effort was made independently of the other Italian incumbents, but the company accessed new external knowledge by participating to a research consortium formed by the MIT's Media Lab in 1994 ('News in the Future'). The digital strategist and co-founder of *repubblica.it* explained:

> *'There were three to four newspapers from Europe and the rest from the US, and we were the only Italian publisher sending people to Boston [to MIT]. Our participation share into the consortium was significant, at around $100,000! During that time, we learned about radical inventions from the media guru Nicholas Negroponte and his team, and we transformed them into real projects!'*

One of the MIT prototypes was 'SilverStringer,' a tool aimed to simplify online publishing for elders, which GEDI transformed into the school platform. A former director and journalist at GEDI explained, 'In 2000 we hosted in our offices the co-inventor of SilverStringer, a Finnish MIT Ph.D. student. Our intention was to modify their software to make it a platform that enabled schools to create their own digital newspapers. This gave rise to a big project with Italian schools.' The initiative was so successful that in 2004 it was acknowledged in *We the Media*, an international book on open participatory journalism: 'By far the biggest installation is operated by the *La Repubblica* newspaper in Italy; its Kataweb online affiliate uses SilverStringer to help publish some 4,200 online school newspapers' (Gillmor, 2004, p. 143). In 2016, *Repubblica@scuola* was still enabling students to produce content, the best of which was proposed every year by GEDI to its readership.

In theory, the project reveals how an incumbent facing opportunities from new disruptive technologies in distribution can engage in stand-alone experimentation to exploit external knowledge (e.g., citizens, students), thus creating new value, and can use platform solutions to internalize the externalities (Katz and Shapiro, 1994), thus capturing new value. The schools' platform was only one of a sequence of new ventures developed in phase 1 that revealed these same mechanisms (Kataweb's tools and *repubblica.it* preceded it, and the personalized news platform followed it). The next section continues to provide further evidence of that development, as well as considering the new problem of tensions during the BMA process.

Tensions during the BMA process. Scholars have acknowledged the conflicts existing between different institutional logics in contexts such as academia versus commercial entities (e.g., Sauermann and Stephan, 2013), or open versus closed innovations (e.g., Laursen and Salter, 2014). We took a dynamic perspective to the problem and found evidence of *how* similar conflicting logics can also hinder the process of BMA.

In 1995, GEDI learned about another opportunity from the MIT Media Lab: an embryo system to receive newsfeeds by citizens, 'The *Fishwrap* personalized news system' (Chesnais et al., 1995). As with the other MIT prototypes, this embryo system also needed to be implemented, and GEDI re-elaborated the prototype by developing a personalized news platform similar to what Facebook became years later for news consumption (see Table I). However, they encountered problems in transforming it to a properly functioning business. GEDI's multimedia strategist explained:

> *'In 1997 we decided to implement a newsfeed system since we foresaw that large part of the value in information derives from local news and personalization. Technically we were assisted by Microsoft, but the partnership was the problem! The culture at the MIT was about open source, but we proceeded in the traditional way by forming a strict and costly relationship with Microsoft. This impeded the necessary experimentation to transform the Fishwrap prototype in a real business. […] The dominant culture in publishing companies is too closed and the management only allowed us to experiment in the old way […].'*

The informant also explained that they later tried to open the platform to external European publishers, but continued to fail due to the closed-model approach with Microsoft Windows 97. The digital strategist of GEDI added:

> *'For a project like this you need financial resources and delegation of tasks. If they do not recognize the benefit, everything gets easily cannibalized by a powerful and rich business like La Repubblica.'*

Another project that also failed because of similar conflicts between external and internal logics was Reporter, a citizen journalism platform that GEDI tried to launch in 2011 (Figure 1 and Table I). The failure of Reporter was caused by clashes between the open culture of external bloggers and the closed model of a traditional publisher (more details later).

From a theory perspective, the failure to implement both the personalized news platform (*Fishwrap*) and the citizen journalism platform (*Reporter*) reveals that companies can be effective in exploring new open opportunities, but then fail to exploit/implement the new solutions internally due to prior closed models. Hence, a fine-grained understanding of exploration and exploitation, and the balance found between them (O'Reilly and Tushman, 2016), is important when studying BMA after disruptions. As our evidence has revealed, a closed mindset

can prevent the internal exploitation of new open opportunities, without necessarily preventing their earlier exploration (e.g., GEDI's high experimentation). We believe that this is possible because exploration is a searching activity, often directed to the external (March, 1991), and hence it fits better with the effort of opening a model, whereas exploitation is directed to the internal, and thus it often represents the place where the external logics clash with a company's internal culture.

Recursivity of BMA and Mixed Solution (Periods: 2001–2005 and 2012–2016)

The process of BMA is not linear, and companies may need to return investing into their old business before they fully adapt. The outcome can also be a mixture of old and new models, as our evidence reveals. Possible reasons for recursivity and further exploitation of the old model were: (1) companies' initial failures to adapt; (2) the residual value in the old model; (3) and/or new exogenous changes in the market conditions. GEDI returned to invest into its offline domain when the online market suffered severe setbacks, which especially happened in 2001–2005, but also after 2012. In 2001, the stock market for digital activities collapsed, after the initial period of opportunity perception (period: 1995–2001). The director of GEDI's digital division explained:

> *'Kataweb tried the quotation at the Italian stock exchange, but unfortunately the market went down two weeks before the planned quotation. We missed the opportunity to transform our internet subsidiary [Kataweb] into a tech giant.'*

The company stopped investing in new digital activities until almost 2005, and exited businesses like VoIP and e-commerce, maintaining only its more strategic online businesses like *repubblica.it* and the online newspapers/periodicals. Importantly, it reoriented its value creation and capture efforts towards the printed business through two major investments (see Figure 1, bottom part about internal knowledge). First, in 2002 it experimented and invested in new full-color rotary presses to replace its ten black-and-white presses by the end of 2004. This offline technological innovation allowed GEDI to create and capture new value from offline advertising, especially because competitors continued offering only black-and-white printed ads until 2006. Second, in 2002 it also started a new lucrative business of offline add-on products sold alongside its physical newspapers (e.g., books, comics, encyclopedias, movies, and music), which was still continuing at the time of publication of this article. These were two examples of BMA within the closed old business (the one characterized by full ownership of core knowledge and complementary assets).

The company returned to invest in offline new businesses in 2012 and 2016 during phase 2 (Figure 1, bottom part about internal knowledge), to diversify and grow, due also to the difficult online market conditions, where disruptors like Google and Facebook became dominant (Financial Times, 2016; PEW, 2013). In

2012, GEDI entered the business of physical cultural events by establishing several traveling festivals organized each year by its newspapers (e.g., La Repubblica delle Idee; Festival di Limes; Trentino.live). This step was an example of offline BMA, because new value was created during the live conversations with journalists on stage and was captured through advertising sponsors sold by the proprietary ad sales force. In 2016, the company also acquired another traditional publisher, ITEDI, the third largest newspaper company in Italy, which published two historical newspapers: *La Stampa* and *Il Secolo XIX*. The incorporation provided GEDI with additional assets and professionals, and generated a cash flow of 9.0 million euro in 2016. These investments after 2012 reinforced the old model characterized by professional workers, specialized complementary assets, and vertical integration to control value creation and capture.

This part of the findings has revealed the recursive and co-evolutionary nature of a BMA process and the need for mixing the old and new models, similar to the prediction of ambidexterity literature on exploration and exploitation (O'Reilly and Tushman, 2016).

Phase 2: Alliances and Acquisitions to Fend-off Business Model Disruptors (2006–2016)

Triggering event: Entrants with new disruptive business model. Disruptive technologies are different from disruptive business models, although they both tend to be developed by entrants (Danneels, 2004; Markides, 2006). When disruptive technologies are introduced into an industry, they often require radically different business models to be commercialized effectively (Chesbrough and Rosenbloom, 2002; Christensen, 2006), and therefore they tend to stimulate the subsequent development of disruptive business models. Our empirical evidence reveals a similar sequence: in phase 1 disruptive technologies emerge, and in phase 2 entrants find and put in place the most appropriate business models to benefit from the new technologies. Importantly, the two types of disruptions have different effects on the process of incumbents' adaptation.

After an initial period of internet technologies diffusion (approximately 1995–2004), from 2005 onwards, several newcomers entered the news and advertising market with disruptive business models. Google and Facebook were gradually perceived as the major threat by GEDI and the other publishers, but also other Italian new entrants (namely: Populis, Banzai, YouReporter, CityNews) represented potential threats. The perception of threat from tech companies entering the traditional media business increased over time, to the point of becoming an international concern. For instance, in 2016, the UK newspaper *The Guardian* reported that 'Facebook is public enemy number one for newspapers' (The Guardian, 2016) and the *Financial Times* reported that Facebook and Google had built a duopoly in the advertising market (Financial Times, 2016). In the remaining section, we will highlight how incumbent organizations react to entrants introducing new disruptive business models in phase 2, and more specifically how they

further adapt their own business model. Before analyzing this process, though, we first need to clarify what disruptive business models means for incumbents.

Threats of business model disruption for incumbents. In a second phase of the disruption process, entrants disrupt incumbents' business model by redefining the meaning of value creation and capture. For instance, Facebook's News Feed was seen as a disruptor because the news it contains is generated by external publishers put in competition (hence, value creation through the orchestration of external knowledge), while Facebook captures the value through advertisements using its platform and the detailed information about users. Similarly, the content accessible via Google Search or Google News, but also via Yahoo! News, Flipboard and other news aggregators, is produced by publishers and/or other contributors (e.g., bloggers, citizens), rather than by these entrants. The Italian entrants (Populis, Banzai, YouReporter, CityNews) were all using similar models: enabling external bloggers and citizens to produce content and controlling specialized platforms to monetize via advertisements. As anticipated above, GEDI and the other publishers perceived these entrants as real threats, because Google alone in 2013 was capturing around 60 percent of the Italian online advertising market (previously contended by publishers).

From a theory standpoint, entrants in phase 2 introduce disruptive business models because they effectively create and capture value in a different way (see our definition above). They create value by orchestrating external sources of knowledge (rather than producing knowledge through internal know-how, as incumbents were doing). They capture value by controlling specialized platforms and customers' data (rather than controlling specialized assets along a vertical value chain, as in the incumbents' prior model). These new ways of creating and capturing value are favored by external economies and externalities of technological disruptions in manufacturing and distribution (Marshall, 1920)—the type of disruptions considered in this paper. These theoretical arguments are generally applicable to industries facing similar technological disruptions, such as the movie, music, travel, and accommodation industries, in which similar disruptive business models have been successfully implemented by entrants like Netflix, Spotify, Kayak, and Airbnb.

Alliances and acquisitions for incumbents' BMA. Threats can represent a response catalyst for incumbents (Gilbert, 2005; Huff et al., 1992). We found that the threat of disruptive business models in phase 2 induces incumbents to use alliances and acquisitions to accelerate their BMA. After an initial period of stand-alone experimentation, GEDI started forming alliances with disruptors (*The Huffington Post* and *Business Insider*), with other publishers to share common knowledge against disruptors (for a video syndication platform), and to acquire a potential disruptor (*mymovie.it*). In some instances, the failure of stand-alone experimentation in phase 1 (e.g., the personalized news platform) was overcome by the recourse to alliances and acquisitions in phase 2 to develop similar new businesses in a faster and more secure fashion. The generative mechanism here

is that alliances and acquisitions tend to offer more rapid and secure paths to BMA than stand-alone experimentation. Experimentation is more appropriate in the initial stage of opportunities arising, but it becomes riskier when threats become more pressing in a second stage of the process. In the following section, we provide detailed evidence for these theoretical findings.

In 2012, GEDI formed an important joint venture with the US disruptor the Huffington Post Media Group (HPMG) to launch *huffingtonpost.it* in the Italian market. The venture contributed positively to GEDI's overall performance because, by 2016, the revenues of the joint venture (JV) amounted to 1.99 million euro and to profits of 0.12 million. More importantly, it represented a new form of BMA for GEDI because *The Huffington Post* operated according to a disruptive business model. Since its foundation in 2005, *The Huffington Post* disrupted the newspapers' business model by *creating value* in a totally different way: using thousands of unpaid bloggers and aggregating content from external publishers like the *BBC* and *TIME*. It also changed the value capture dimension of publishers by introducing a sophisticated advertising-based platform. The international executive editor of *The Huffington Post* US told us:

> *'The secret of our model is 'viral' plus 'journalism.' The web for us is an open medium, and we have interpreted that by giving voice to people. We create communities and favor conversations. If you go on our new TV streaming service, HuffPost Live, you will find the exact same logic […]. We invite interesting people to participate in a conversation, and they are happy to get a global visibility.'*

This quotation reveals how the technological disruption in manufacturing and distribution favored the emergence of externalities ('The web for us is an open media') and gave opportunities to create value by massively exploiting external knowledge ('We create communities and favor conversations'). An additional way to exploit externalities to create value was through alliances with external knowledge providers, as the general manager for international business of HPMG told us:

> *'To cover complex topics, we form alliances with specific foundations and let them contribute their own expertise. An example is the collaboration with the prestigious Berggruen Institute of Governance to fuel our WorldPost community [news section], with quality content.'*

The statements above reveal the complex functioning of disruptive business models introduced by entrants. They also suggest how difficult it can be for an incumbent to replicate the model. While incumbents like GEDI were trying to gradually adapt to the new external opportunities, entrants were able to develop entirely new models based on external knowledge exploitation, gaining an advantage. Therefore, an incumbent's choice to form alliances with a disruptor, rather than attempting to develop something similar alone, appears to be a faster mechanism to adapt its business model. We asked GEDI's CEO of the Italian *Huffington Post* to explain their strategic intent:

'The purpose of this alliance was threefold. First, we were interested in understanding and using the new business model that Arianna Huffington created: a workable mix of many bottom-up bloggers' contributions and less top-down journalistic content. We have been exploring similar 'low cost/high participation' models by ourselves with some of our new ventures! Second, we wanted to learn and gain access to the advanced content management platform that is behind the HuffPost. Our newspapers could use or replicate components of that platform for managing external contributors. Third, a partnership with a digital-native American disruptor could more directly expose ourselves to future technological advancements.'

The quote explicitly shows that an incumbent in phase 2 can use alliances to facilitate BMA by directly accessing disruptors' new methods of value creation ('"low cost/high participations" models') and capture ('advanced content management platform'). The finding that alliances in phase 2 constitute valuable mechanisms for BMA was corroborated by the repetition of similar alliances over time, and by the concomitant reduction of stand-alone experimentation (see Figure 1).

In 2013, GEDI allied with other Italian publishers to create a video syndication platform, in competition with disruptors like YouTube. The head of business and market for free products at GEDI explained:

'Our [traditional] model is unsustainable in the long run, and therefore we experiment with new ways. A big project we developed in 2013 is a video syndication platform that allows newspapers not belonging to our group to share their video with us, and vice versa. We use the content sharing among different newspapers to increase our local coverage and reduce our costs.'

Like the other online ventures, this project reveals the incumbent's intent to exploit external economies of scale (Marshall, 1920) after the internet disruption—the main generative mechanism across phase 1 and 2. Evidence of this intent from the quote is the 'content sharing among different newspapers' and the aim to 'reduce our costs'. In addition, this project reveals a new attempt to react to disruptors' threat through an alliance among incumbents. As the GM of the digital division of GEDI explained, the video syndication platform was an effort by publishers to cooperate among themselves and against disruptors like Google and Facebook, whose video services threatened the video advertising segment of traditional publishers. Finally, the syndication platform employed an open model, mixing outside-in and inside-out aspects (Vanhaverbeke and Chesbrough, 2014) because each incumbent could insource external knowledge (outside-in) and outsource its knowledge to others (inside-out). Other examples of alliances/consortia that GEDI formed during phase 2 with other newspapers and against disruptors were: the Premium Publisher Network (in 2008, to aggregate publishers' contextual ads) and Gold5 (in 2014, to aggregate publishers' video ads).

In 2016, the company formed another JV with an international disruptor in the business news segment, *Business Insider*. The JV aimed to launch the Italian branch of the disruptor: *businessinsider.it*. In their press release, GEDI emphasized

the disruptive nature of *Business Insider* by describing it as 'one of the fastest growing news brands in the world' and 'the most engaged news brand on social media' (Press release, 2016). In fact, the business model of this disruptor was a mix of partial aggregation of external news from the web and partial internal content production, and then a sophisticated platform to capture value. This JV, together with the prior JV with *The Huffington Post*, reveals that incumbents can facilitate their BMA by forming alliances with disruptors (see also Gans, 2016) who had succeeded in devising new business models. The BMA develops by incorporating new forms of value creation and capture from the disruptor, thus avoiding the risks of stand-alone experimentation and the difficulties of early-stage competition and conflicts.

In addition to alliances, a related mechanism to speed up and secure the BMA process in phase 2 is the acquisition of entrants employing disruptive models. Acquisitions and alliances are related governance mechanisms on a same continuum (Capron and Mitchell, 2012). The company made several acquisitions during phase 2, but the most relevant from a BMA standpoint was the acquisition in 2013 of 51 percent of an online open community for movies: *mymovies.it*. This community was the largest platform and online database of films in Italy, created in 2000 through the contributions of normal viewers of films, and having an installed base of three million monthly unique users in 2013. With these features, this entrant clearly employed a disruptive business model based on external contributors and platforms. The GM of the digital division of GEDI explained this disruptive model:

> *'Mymovies.it can be interpreted within the set of initiatives of participatory content production, since each movie title is wrapped around by people's comments. However, the real value is in the 'crowd-selection'! The website offers a synthetic index, called 'MYmonetro,' that suggests what movies deserve to be seen, based on the comments of hundreds of viewers.'*

In the next paragraph, we discuss how the incorporation of disruptive model can be effectively implemented to limit clashes with the old model and negative transfer problems (Finkelstein and Haleblian, 2002).

Mixing business models to limit tensions and failures. Alliances and acquisitions are not always successful, due for instance to negative transfer problems when there are significant differences between acquirers and targets (Finkelstein and Haleblian, 2002). In addition to that, the integration of different models can be difficult due to intrinsic tensions between the different logics (Sauermann and Stephan, 2013). To understand how incumbents can circumvent similar pitfalls, we can consider how GEDI managed the JV with a disruptor such as *The Huffington Post*. The Italian venture operated under a mixed business model (half open and half closed) that limited tensions. First, GEDI assigned the role of executive editor of the *huffingtonpost.it* to a traditional journalist, Lucia Annunziata, despite the website's heavy reliance on blogs and aggregation. Second, it physically located the *HuffPost*'s newsroom in the same building of its *La Repubblica* newspaper—contrary to

recommendations that radical new ventures should be separated from incumbents (Christensen and Raynor, 2003; Gilbert, 2005). Third, it was paying the external contributors (about 1,000 bloggers) unlike the US *HuffPost*. The Italian venture also employed a traditional small newsroom of four to five journalists, because only 'two-thirds of our content come from external bloggers and other websites,' the vice managing editor explained. Thanks to a mixed model, the integration of the new venture within GEDI did not produce clashes and struggles. In theoretical terms, we can expect that pre-adapting a highly disruptive model to an incumbents' predominant model allows the reduction of potential conflicts by increasing 'similarity.' This approach increases the efficacy of BMA through alliances or acquisitions because 'similarity' is associated with positive transfer and performance (Finkelstein and Haleblian, 2002).

Reduction of stand-alone experimentation in phase 2. The threat of entrants in phase 2 and the more advanced stage of a disruption life cycle discourage incumbents' stand-alone experimentation, favoring faster and more secure alliances or acquisitions. Hence, alliances and acquisitions are not only more favorable mechanisms of BMA in phase 2, but they are also likely to substitute incumbents' stand-alone experimentation. We found that GEDI reduced its recourse to experimentation to only two cases in phase 2, one of which was a failure (*Reporter*), with only one succeeding (*ilmiolibro.it*).

In 2011, GEDI launched *Reporter*, a citizen journalism platform based on quality videos. People could send their investigative pieces of video journalism to GEDI, which would then assess them and train the best filmmakers (through the Repubblica Academy). The aim was to build an external community of trained reporters to rely on, another attempt at BMA. However, the journalist and founder of *Reporter* said:

> *'Something unexpected happened. The day when reporter.repubblica.it went online, we immediately received negative comments from bloggers. The complaints were about the amounts we offered to pay. Following a mistake with our technology provider, it appeared that we were offering to pay a minimum of five euro per video. We promptly rectified the mistake by modifying the minimum price to 150 euro. However, the negative mood among bloggers and our competing newspapers remained, and we were accused to take advantage of our contributors because the amount was too small for a publisher like us.'*

During the following years, even with the modified remuneration price for contributors, the size and interest in *Reporter* remained small, and the project was ended in 2016, suggesting that the failure was not only due to the initial technical mistake. The Italian disruptor in this market was YouReporter, a low-end disruptor that set a standard of low-quality free contributions in video citizen journalism and gained scale, thus disrupting GEDI's attempt to establish *Reporter*.[1] Interestingly, while GEDI terminated its stand-alone experimentation, the competitor RCS Media Group acquired the disruptor YouReporter in 2014. This purchase further suggests that acquisitions and alliances can be better than

incumbents' stand-alone experimentation in a more advanced stage of a disruption life cycle.

The other example of stand-alone experimentation in phase 2 was the launch in early 2008 of a self-publishing book platform, *ilmiolibro.it* (in English, *mybook*). The founder of *ilmiolibro.it* (also GEDI's head of digital entertainment) explained its disruptive open model:

> *'The system works that people publish their books on our platform, and at the same time they judge the quality of other authors' books. If many readers like the book, the author can opt for selling it directly through our platform in a digital version or can even use GEDI's printing presses to sell hard copies or to keep it for himself. Both possibilities weren't available to common people before our platform was created. In this respect, we democratized book publishing in Italy!'*

This was clearly a disruptive model compared to traditional book publishing. In the new open model, value creation is outsourced to a crowd and value capture can happen via a combination of online platform plus print. By 2014, *ilmiolibro.it* was a dominant player with over 30,000 titles published and an online community of more than 300,000 active members. This growth is interesting because it reveals that incumbents can introduce disruptive models through stand-alone experimentation, although it is difficult and might require specific conditions. A first condition might be that the domain of the disruptive business is 'unrelated' to those of the traditional core business, to limit conflicts and the pressure of real threats. For instance, GEDI traditionally operated only in the news business (not in books), but it became the Italian leader of book self-publishing, and, interestingly, traditional book publishers did not undertake similar initiatives (or they did it too late). A second condition can be the exact timing. *Ilmiolibro.it* was launched in an earlier stage of the disruption process, in 2008, when threats from disruptors were still relatively small (compared to those after 2012 that led to alliances and acquisitions). The two conditions–(1) relatedness to the core business and (2) degree of time advancement–might help with choosing between stand-alone experimentation and alliances/acquisitions as possible mechanisms for BMA.

DISCUSSION AND CONTRIBUTIONS

Rich strategy literature has demonstrated that the inability to adapt a business model after disruptions frequently leads to the demise of incumbent organizations (Christensen, 2006; Danneels, 2004; Gavetti and Tripsas, 2000). To understand how companies can adapt, we conducted a longitudinal study of a large news media publisher responding to internet disruption. We derived a model detailing the implications of different components of disruptive innovation and unveiling how incumbents can react through BMA.

Our first contribution is the development of a process model (Figure 3) identifying two distinct parts of disruptive innovations (disruptive technologies and disruptive business models) and presenting their consequences. We find that

the two parts represent the drivers of a possible adaptation process: in fact, they emerge in different moments in time, have different implications and induce different responses from incumbents. Disruptive technologies are likely to precede the emergence of disruptive business models because new technologies often open new markets and require entirely new models to profit from them effectively (Chesbrough and Rosenbloom, 2002; Christensen, 2007; Teece, 2007). This sequence was the case of our study, in which we considered the initial availability of new internet technologies that, as in the case of many other technological changes, only later favored the emergence of new ways of creating and capturing value. A similar example is the initial technological disruption of film photography by digital imaging, which later changed the business model of photography and caused the failure of Kodak (Tripsas and Gavetti, 2000). However, it is also possible that the emergence of disruptive business models do not require the arrival of radically new technologies (e.g., the insulin pen in diabetes care) or may precede a technological disruption (e.g., Ryanair's disruptive business model). For instance, Ryanair pioneered its ultra-low cost, no-frills model in the early 1990s, before the utilization of the internet (source: www.aviationreg.ie). Later, Ryanair's model became even more effective when subsequent internet technologies allowed the company to establish their first website in 2000 to further cut costs. We do not consider these complementary possibilities in this research, and therefore they might represent interesting avenues for future research.

Our second contribution was to introduce the notion of external economies of scale (Alcácer, 2006; Garud and Kumaraswamy, 1993; Marshall, 1920) into the study of disruptive innovations. Marshall (1920) theorized that external economies and network externalities emerge when radically new external factors of productions are made available to all companies (e.g., roads, electricity, but recently also the internet). Hence, we argue that disruptions making available new manufacturing and distributing technologies induce external economies of scale, and thus positive externalities. We focused, indeed, on disruptive technologies in manufacturing and distribution, a currently under-researched area (Cozzolino and Rothaermel, 2018). The internet represented such a type of change by providing a distribution network and new digital manufacturing tools. We found that, when external economies emerge after a disruption, incumbents have incentives to use the external resources, such as knowledge and technologies, to: (1) gain access to larger markets; (2) reduce costs; and (3) increase their innovation. Access to such external resources is likely to provide an advantage, compared to the sole reliance on internal factors of productions (on internal-only economies of scale). This difference presents the main generative mechanism (Cornelissen, 2017) of the BMA process: incumbents increase their access to external resources–thus opening their business model–to exploit external economies after disruptions.

A third contribution was to unveil the evolution of the BMA process after disruption. Figure 3 illustrates that this is a two-phased model, where the two phases are triggered by the emergence of disruptive technologies and disruptive business models. In phase 1, the availability of external new disruptive technologies generates

external economies of scale and thus creates opportunities for incumbents to exploit external resources. By accessing external knowledge and technologies, incumbents can create new value at a lower cost (see also Grant and Baden-Fuller, 2004). The fact that the technological disruption occurs at the complementary-asset level (old-line manufacturing and distribution) is a favorable condition for perceiving opportunities in phase 1 (because the 'core' is not directly affected). From prospect theory (Kahneman and Tversky, 1979), when actors perceive an opportunity they tend to react creatively and are more likely to take risks. The opportunity perception is a reason why an incumbent can respond to the arrival of disruptive technologies with immediate and high experimentation. A second reason why experimentation is an important mechanism of adaptation in phase 1 is because, in the 'fluid stage' of a new technology, product innovation tends to be high (Utterback and Abernathy, 1975). The benefits for each incumbent to exploit external economies and the fact of being in an initial technology race stage (Schilling, 1999), both induce incumbents to act as 'stand-alone' players in their initial experimentation efforts. We found consistent evidence of initial 'stand-alone' experimentation in our case.

In a phase 2 of the BMA process, incumbents face new entrants pioneering novel disruptive business models. As indicated above, new disruptive technologies might ultimately require new business models, which typically require time to emerge. Entrants are more likely to pioneer new disruptive models (Ansari et al., 2016; Danneels, 2004). But how do incumbents react? When the disruption of the value creation and capture components of incumbents' business models becomes visible in phase 2, the potential losses cause threat perception (Kahneman and Tversky, 1979). To rapidly and effectively respond to the threat in phase 2, incumbents are likely to use alliances and acquisitions as new adaptation mechanisms, rather than phase 1's stand-alone experimentation, which is generally riskier and slower. In phase 2, the focal company of this study formed alliances with disruptors (e.g., *The Huffington Post*, *Business Insider*) and acquired potential disruptors (e.g., *mymovies.it*) as well as external publishers (e.g., *La Stampa* newspaper). Of the sole two residual attempts at stand-alone experimentation in phase 2, one failed. Our evidence confirms that the stand-alone experimentation mechanism is less appropriate during phase 2.

The study also offers contributions to understanding how value creation and capture change after disruptions in manufacturing and distribution. Prior to the disruption, value creation occurs through internal knowledge production and value capture through proprietary specialized assets (see Figure 2, left side). This closed model is typical of traditional vertically integrated incumbents (Teece, 1986) and it has also been referred as a Chandlerian model (Chandler, 1990). After the examined disruption, value creation results from a combination of both internal and external knowledge, and value capture results from the development of platforms and the control of customers' data (see Figure 2, right side). Platforms are, by definition, distribution and manufacturing assets (Gawer and Cusumano, 2014). Hence, we can expect that the emergence of external economies and externalities not only induces companies to create value through

external resources, but also to capture value by developing platforms. In fact, network literature suggests that platforms are created to internalize externalities (Katz and Shapiro, 1994). This phenomenon can explain why disruptive entrants introduce models in which they create value by orchestrating third-party knowledge and then capture value through platforms. Facebook and Google Search are two notable examples. In addition, incumbents facing similar threats need to develop platforms because their manufacturing and distribution technologies have been destroyed (see again Figure 2). The examined company transformed its old model into a multi-platform business model that also relies on external knowledge sources. This finding provided insights about the necessary changes to the subcomponents of a business model (e.g., structure and competences).

Another important feature of the BMA process is that it is not linear, but rather recursive, and can lead to mixed business models (see Figures 3 and 1, combining internal and external knowledge). Even if the generative mechanism after the examined disruption was the opening to external economies, we did not find strong evidence of a sole directionality of innovation. We found instead that the company sometimes needed to return to the old closed model, and in general never abandoned the prior closed model, but continued to invest in it (e.g., acquiring professional newspapers or diversifying offline using its old model). Conditions inducing incumbents to return to their old model are: (1) difficulties of the new exploration effort (e.g., failures, tensions, entrants' success); (2) residual value in the old model (see also Gilbert, 2006; Siggelkow, 2001); and (3) unexpected exogenous conditions (e.g., external new market setbacks). There is a potential implication here to ambidexterity literature, because we further clarify when it is appropriate to use 'simultaneity' or 'temporal sequencing' of exploration and exploitation (O'Reilly and Tushman, 2016; Raisch et al., 2009). A temporal separation is possible (although probably not desirable) in phase 1 of the BMA process when disruptors have not emerged yet. A simultaneity is inevitable in phase 2 of the BMA process when the more advanced process of disruption creates threats and makes new exploration crucial.

The study also unveils the tensions during the BMA process that might hinder successful adaptation. We found that, when a company tries to open its firms' boundaries to external knowledge and participants (Chesbrough, 2006; Garud and Kumaraswamy, 1993), one type of conflict that can emerge relates to differences between internal and external logics (to an extreme, between open and closed logics). We provide evidence of viable strategies that a company can use to mitigate conflicting logics (Laursen and Salter, 2014; Sauermann and Stephan, 2013). When there is a tension with external participants and it is difficult to create a business with them (through stand-alone experimentation), we found that a possible strategy is to acquire or ally with companies that have already internalized the external participants. The alliance with *The Huffington Post* was an example of a similar strategic option in phase 2 (see Figure 3). In the case of acquisitions, which can also lead to conflicts, an additional strategy is to use mixed models by adjusting a new model to an old one, to increase similarity and avoid negative transfers (Finkelstein and Haleblian, 2002).

Generalizability. The model developed herein generalizes well beyond the media context. In fact, the main generative mechanism of the process (exploiting external economies after disruptions in manufacturing and distribution) applies to multiple industries facing internet disruption. Our prediction is that companies increase their access to external resources and open their model, without abandoning their closed model, to (1) reduce costs; (2) create new businesses and innovations; and (3) to increase size (grow their market). Consistently, Procter & Gamble has used the external economies of the internet to increase innovation and new product development through the crowd, opening its business model through an inside-out effort (Vanhaverbeke and Chesbrough, 2014). Ryanair (and subsequently other airlines) has used the external economies of the web to reduce their costs dramatically by cutting out travel agencies and selling directly to end consumers through their websites. Google Music and Facebook have used disruptive technologies to access content and user's contact details from their mobile phone, growing their installed base and exploiting external knowledge, and have also used external app developers to increase their innovation (e.g., on Apple's App Store). Related to the last example, Nokia has been less capable of engaging with external developers in order to exploit the external economies of the web, and as a result, its operative system Nokia Symbian suffered from a lack of 'apps' and was overtaken by entrants like Google Android and Apple iOS.

The mechanism of stand-alone experimentation observed for phase 1 is also generalizable to other contexts. As observed, stand-alone experimentation can be justified by the opportunity perception of gains (Kahneman and Tversky, 1979) and by the technology race (Schilling, 1999). Between 1998 to 2001, incumbents in industries such as banks, insurance, travel, and high tech all started experimenting to seize the early opportunities of new technologies, contributing to the formation of the internet bubble. Also, the other mechanism of phase 2's alliances and acquisitions is common to several industries facing similar disruption. Indeed, especially after 2009, incumbents in most industries (education, TV, banks, telecommunication, etc.) turned to alliances and acquisitions in reaction to the threat of the obsolescence of their business models (see also Cozzolino and Rothaermel, 2018). Possible examples are Paym (a proprietary mobile payment system developed by an alliance of UK banks in 2014), Hulu (a streaming platform responding to Netflix, owned by Walt Disney, Fox, NBC Universal and Time Warner), and Coursera and edX (platforms formed by a consortium of universities for online education).

Another generalizable prediction is that platforms are used after the examined disruption to enable and internalize externalities. In fact, disruptive entrants using platform-based open models are common across many sectors (e.g., Uber for taxis; Airbnb for accommodation). Platform-style responses by incumbents are also abundant: Coursera, Hulu, and Paym are all controlled by incumbents, and Spotify is owned by incumbent record labels.

Finally, the identified tensions in BMA are also generalizable. The innovation in Ryanair's business model of exploiting external pilots taken from external

agencies has generated conflicts (Independent, 2018). Facebook's model of granting control to third-party apps (see Cambridge Analytica) has created tensions with customers' data (Financial Times, 2018). In the remainder of the paper, we present additional specific contributions.

Contributions to Disruptive Innovation Literature

The lack of conceptual clarity behind the disruptive innovation concept has partially hindered the progress of this literature (Danneels, 2004; Govindarajan and Kopalle, 2006; King and Baatartogtokh, 2005). Markides (2006) relates this problem to the failure to distinguish between types of disruptions, at the technology, product, and business-model level. Christensen (2006, p. 43) also acknowledged: 'I made a mistake when I labeled the phenomenon as a disruptive technology; the disruptive business model in which the technology is deployed paralyzes the incumbent leader.' Our paper is, to our knowledge, the first empirical research that considers the two components of disruption (disruptive technologies and disruptive business models) simultaneously and investigates their effects on incumbents' BMA. Our process study was well suited to unveil how these two components are related, and how they affect incumbents. Disruptive technologies tend to come first and do not necessarily paralyze incumbents, but rather create opportunities. Disruptive business models tend to emerge after, when entrants find ways to commercialize previous disruptive technologies, and they threaten incumbents' business models. Hence, the two types of disruption have different effects on established organizations, and only the second type can threaten incumbents and lead to failure—if incumbents do not adapt their business model. This fine-grained understanding of the components of disruptions and their implications can be fruitful for the progress of disruptive innovation studies.

A second contribution to disruptive innovation literature derives from studying a specific type of technological disruption: in manufacturing and distribution/sales. Contrary to the innovator's dilemma (Christensen, 1997), we found that incumbents are likely to invest and experiment early when disruptive technologies make new factors of production available. The studied company showed an admirable pattern of early innovation and investment. This exception to the common inertial prediction that incumbents do not allocate resources and efforts to disruptions (Christensen and Bower, 1996; Danneels, 2004) is illuminated by considering the type of technological disruption in this case. First, disruptive technologies in factors of production generate 'external economies of scale' (Garud and Kumaraswamy, 1993; Marshall, 1920) and incentivize incumbents to adopt the new technologies to exploit external benefits. Hence, the advent of disruptive technologies does not constitute an inertial force per se, as it can create opportunities and incentives to adopt superior technologies. Second, the emergence of external economies diminishes the firm-specific advantages of previous 'internal economies of scale,' thus incentivizing incumbents to adopt the external disruptive technologies.

Third, disruptive technologies in manufacturing and distribution also permit incumbents to deploy their upstream core knowledge through new assets (gaining new 'economies of scope'), and this is another reason to adopt and invest early. All that points to the importance of considering the type of disruptive technology more closely, and to consider the role of 'economies of scale' and 'economies of scope,' in addition to demand factors (Adner, 2002; Christensen, 1997).

A final contribution relates to how to circumvent tensions during disruptions. Ansari et al. (2016) offer an important theorization of how disrupting entrants mitigate conflicts with incumbents through cooperation and continuous adjustments. We integrate this concept by taking the incumbents' perspective and revealing that acquisitions, alliances, and a mixed business model (half-closed and half open) can reduce conflicts and negative transfer problems (Finkelstein and Haleblian, 2002).

Contributions to Business Model Literature

An important lacuna in business model innovation literature refers to the antecedents and processes of BMA (Foss and Saebi, 2017). We contribute here by unveiling the antecedents, hindering factors, and processes of BMA. The study reveals that two key drivers of incumbents' BMA are the arrival of disruptive technologies and disruptive business models. In terms of process, we show that these antecedents lead to opportunity and threat perception, and induce BMA though experimentation (Sosna et al., 2010) and alliances/acquisitions (Bock et al., 2012). Through these adaptation and governance mechanisms, incumbents readapt the value creation and capture dimensions of a business model.

A second contribution refers to studies of open business models (Chesbrough, 2006; Vanhaverbeke and Chesbrough, 2014), as we highlighted a condition for outside-in strategies. Our study suggests that an outside-in strategy of insourcing external knowledge is more likely when there are external economies (Marshall, 1920). The finding also complements the inside-out open strategy described by Garud and Kumaraswamy (1993) for Sun Microsystems, when the company made its internal technologies available to external competitors to establish a standard. While Garud and Kumaraswamy (1993) studied a disruptor (Sun) seizing network externalities through an inside-in strategy, we show that incumbent can react to disruptions by seizing external economies (outside-in). Future research might be needed to further understand these options. A related implication of our study is that adaptation requires mixed model—e.g., opening to external knowledge while maintaining internal knowledge production. A closed model remains fully necessary in a market where the disruptive technology cannot be implemented (e.g., offline). In the new market with external economies (e.g., online), a more open model is beneficial. However, even in the new market, the quality of the internal core knowledge production and the brand of an organization may induce incumbents to consider mixed models (e.g., the metered paywall of the *New York Times* and of *La Repubblica*) or fully closed models (the paywall of the *Wall Street*

Journal). Hence, professionalism through internal core knowledge and value capture through proprietary assets remain important (see Figures 1 and 2).[2] At the same time, incumbents might need to develop proprietary ecosystems in the form of interconnected platforms to exchange external resources and customer data to capture value (for instance, through open APIs, as in the case of GEDI; see also Supporting Information Figure A1 in the online appendix). At the end of the BMA process, GEDI's two markets of readers and advertisers became 'layers' connected by multi-platforms (see Figure 2).

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NOTES

[1] Another insight form *Reporter* is that external contributors (e.g., bloggers, citizens) may be unwilling to contribute to professional entities, due to different institutional logics. This situation is opposite to the common NIH or not-invented-here syndrome (Katz and Allen, 1982) according to which individuals within organizations reject external innovations.

[2] Organizational culture might be another factor explaining heterogeneity in the degree of openness. Both Google and Apple opened to external developers to exploit the external economies of the internet, but Apple opened less (Apple is a notoriously closed-culture company). Likewise, the *Wall Street Journal* used a more closed model online compared to the *Financial Times* (although they are similar economic newspapers of comparable high quality), and the difference could be related to the more closed cultures of the *Wall Street Journal* and of News Corporation (the company that owned the newspaper for a long time). In the paper, we explain the main effect, as well as the initial trade-offs and tensions relating to opening a business model after disruption. Future research could consider other factors, such as culture, to explain firm-level heterogeneity.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

REFERENCES

Adner, R. (2002). 'When are technologies disruptive? A demand-based view of the emergence of competition'. *Strategic Management Journal*, **23**, 667–88.

Adner, R. and Kapoor, R. (2010). 'Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations.' *Strategic Management Journal*, **31**, 306–33.

Aitamurto, T. and Lewis, S. C. (2013). 'Open innovation in digital journalism: Examining the impact of Open APIs at four news organizations'. *New Media & Society*, **15**, 314–31.

Alcácer, J. (2006). 'Location choices across the value chain: How activity and capability influence collocation'. *Management Science*, **52**, 1457–71.

Ansari, S. A., Garud, R. and Kumaraswamy, A. (2016). 'The disruptor's dilemma: TiVo and the U.S. television ecosystem'. *Strategic Management Journal*, **37**, 1829–53.

Audipress. (2012). *Indagine sulla lettura dei quotidiani e dei periodici in Italia*. Available at http://www.audipress.it/ (accessed 10 December 2012).

Bock, A. J., Opsahl, T., George, G. and Gann, D. M. (2012). 'The effects of culture and structure on strategic flexibility during business model innovation'. *Journal of Management Studies*, **49**, 279–305.

Boudreau, K. (2010). 'Open platform strategies and innovation: Granting access vs. devolving control'. *Management Science*, **56**, 1849–72.

Capron, L. and Mitchell, W. (2012). *Build, Borrow, or Buy: Solving the Growth Dilemma*. Boston, MA: Harvard Business Press.

Casadesus-Masanell, R. and Zhu, F. (2013). 'Business model innovation and competitive imitation: The case of sponsor-based business models'. *Strategic Management Journal*, **34**, 464–82.

Cennamo, C. and Santalo, J. (2013). 'Platform competition: Strategic trade-offs in platform markets'. *Strategic Management Journal*, **34**, 1331–50.

Chandler, A. D. (1990). *Strategy and Structure: Chapters in the History of the Industrial Enterprise*. Cambridge, MA: MIT Press.

Chandler, A. D. (1993). *The Visible Hand: The Managerial Revolution in American Business*. Boston, MA: Harvard University Press.

Chesbrough, H. (2006). *Open business models: How to thrive in the new innovation landscape*. Cambridge, MA: Harvard Business Press.

Chesbrough, H. and Rosenbloom, R. S. (2002). 'The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spin-off companies'. *Industrial and Corporate Change*, **11**, 529–55.

Chesnais, P. R., Mucklo, M. J. and Sheena, J. A. (1995). 'The fishwrap personalized news system'. In: *Proceedings of IEEE 2nd International Workshop on Community Networking: Integrating Multimedia Services to the Home*. Princeton, NJ, June 1995.

Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, MA: Harvard Business School Press.

Christensen, C. M. (2006). 'The ongoing process of building a theory of disruption'. *Journal of Product Innovation Management*, **23**, 39–55.

Christensen, C. M. and Bower, J. L. (1996). 'Customer power, strategic investment, and the failure of leading firms'. *Strategic Management Journal*, **17**, 197–218.

Christensen, C. M. and Raynor, M. (2003). *The Innovator's Solution: Creating and Sustaining Successful Growth*. Boston, MA: Harvard Business School Press.

Christensen, C. M., Raynor, M. E. and McDonald, R. (2015). 'Disruptive innovation'. *Harvard Business Review*, **93**, 44–53.

Cornelissen, J. (2017). 'Editors comments: Developing propositions, a process model, or a typology? Addressing the challenges of writing theory without a boilerplate'. *Academy of Management Review*, **42**, 1–9.

Cozzolino, A. and Rothaermel, F. T. (2018). 'Discontinuities, competition, and cooperation: Coopetitive dynamics between incumbents and entrants'. *Strategic Management Journal*, **39**, https://doi.org/10.1002/smj.2776.

Danneels, E. (2004). 'Disruptive technology reconsidered: A critique and research agenda'. *Journal of Product Innovation Management*, **21**, 246–58.

Doz, Y. L. and Kosonen, M. (2010). 'Embedding strategic agility: A leadership agenda for accelerating business model renewal'. *Long Range Planning*, **43**, 370–82.

Eisenhardt, K. M. (1989). 'Building theories from case study research'. *Academy of Management Review*, **14**, 532–50.

Eisenmann, T. R., Parker, G. and Van Alstyne, M. W. (2011). 'Platform envelopment'. *Strategic Management Journal*, **32**, 1270–85.
FIEG. (2001). *La Stampa in Italia (1998–2000)*. Rome, Italy: Federazione Italiana Editori Giornali.
FIEG. (2013). *La Stampa in Italia (2011–2013)*. Rome, Italy: Federazione Italiana Editori Giornali.
Financial Times (2016). *Advertising: Facebook and Google build a duopoly*. 23 June.
Financial Times (2018). *'Mark Zuckerberg cannot control his own creation*. 11 April.
Finkelstein, S. and Haleblian, J. (2002). 'Understanding acquisition performance: The role of transfer effects'. *Organization Science*, **13**, 36–47.
Forbes. (2015). *How the collapse of the cable business model will bring the new era of television*. 16 August.
Foss, N. J. and Saebi, T. (2017). 'Fifteen years of research on business model innovation: How far have we come, and where should we go?' *Journal of Management*, **43**, 200–27.
Gambardella, A. and McGahan, A. M. (2010). 'Business-model innovation: General purpose technologies and their implications for industry structure'. *Long Range Planning*, **43**, 262–71.
Gans, J. S. (2016). *The Disruption Dilemma*. Boston, MA: The MIT Press.
Garud, R. and Kumaraswamy, A. (1993). 'Changing competitive dynamics in network industries: An exploration of Sun Microsystems' open systems strategy'. *Strategic Management Journal*, **14**, 351–69.
Garud, R., Jain, S. and Kumaraswamy, A. (2002). 'Institutional entrepreneurship in the sponsorship of common technological standards: The case of Sun Microsystems and Java'. *Academy of Management Journal*, **45**, 196–214.
Gawer, A. and Cusumano, M. A. (2002). *Platform leadership: How Intel, Microsoft, and Cisco drive industry innovation*. Boston, MA: Harvard Business School Press, 29–30.
Gawer, A. and Cusumano, M. A. (2014). 'Industry platforms and ecosystem innovation'. *Journal of Product Innovation Management*, **31**, 417–33.
Gilbert, C. G. (2005). 'Unbundling the structure of inertia: Resource versus routine rigidity'. *Academy of Management Journal*, **48**, 741–63.
Gilbert, C. G. (2006). 'Change in the presence of residual fit: Can competing frames coexist?' *Organization Science*, **17**, 150–67.
Glaser, B. G. and Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategy of Qualitative Research*. London: Weidenfeld & Nicholson.
Govindarajan, V. and Kopalle, P. K. (2006). 'The usefulness of measuring disruptiveness of innovations ex post in making ex ante predictions'. *Journal of Product Innovation Management*, **23**, 12–18.
Grant, R. M. and Baden-Fuller, C. (2004). 'A knowledge accessing theory of strategic alliances'. *Journal of Management Studies*, **41**, 61–84.
Henderson, R. (2006). 'The innovator's dilemma as a problem of organizational competence'. *Journal of Product Innovation Management*, **23**, 5–11.
Hill, C. W. L. and Rothaermel, F. T. (2003). 'The performance of incumbent firms in the face of radical technological innovation'. *Academy of Management Review*, **28**, 257–74.
Huber, G. P. and Power, D. J. (1985). 'Retrospective reports of strategic-level managers: Guidelines for increasing their accuracy'. *Strategic Management Journal*, **6**, 171–80.
Huff, J. O., Huff, A. S. and Thomas, H. (1992). 'Strategic renewal and the interaction of cumulative stress and inertia'. *Strategic Management Journal*, **13**, 55–75.
Independent (2018). *Ryanair engaged in 'negative' talks with unions – pilots' representation*. 1 February.
Jick, T. D. (1979). 'Mixing qualitative and quantitative methods: Triangulation in action'. *Administrative Science Quarterly*, **24**, 602–11.
Kahneman, D. and Tversky, A. (1979). 'Analysis of decision under risk'. *Econometrica*, **47**, 263–91.
Katz, M. L. and Shapiro, C. (1985). 'Network externalities, competition, and compatibility'. *American Economic Review*, **75**, 424–40.
Katz, M. L. and Shapiro, C. (1994). 'Systems competition and network effects'. *Journal of Economic Perspectives*, **8**, 93–115.
Katz, R. and Allen, T. J. (1982). 'Investigating the Not Invented Here (NIH) syndrome: A look at the performance, tenure, and communication patterns of 50 R&D Project Groups'. *R&D Management*, **12**, 7–20.
King, A. A. and Baatartogtokh, B. (2015). 'How useful is the theory of disruptive innovation?'. *MIT Sloan Management Review*, **57**, 77–90.
Laursen, K. and Salter, A. J. (2014). 'The paradox of openness: Appropriability, external search and collaboration'. *Research Policy*, **43**, 867–78.
March, J. G. (1991). 'Exploration and exploitation in organizational learning'. *Organization Science*, **2**, 71–87.
Markides, C. (2006). 'Disruptive innovation: In need of better theory'. *Journal of Product Innovation Management*, **23**, 19–25.

McKinsey. (2015). *Disrupting beliefs: A new approach to business-model innovation*. McKinsey Quarterly, July.
OECD. (2007). *Participative Web and User-Created Content: Web 2.0, Wikis and Social Networking*. Paris, France: OECD Publishing.
O'Reilly, C. A. and Tushman, M. L. (2016). *Lead and Disrupt. How to Solve the Innovator's Dilemma*. Stanford, CA: Stanford University Press.
Osterwalder, A. and Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Hoboken, NJ: Wiley.
Parker, G. G. and Van Alstyne, M. W. (2005). 'Two-sided network effects: A theory of information product design'. *Management Science*, **51**, 1494–504.
PEW. (2013). *The state of the new media. An annual report on American journalism*. Pew Research Center's Project for Excellence in Journalism.
Prima Comunicazione (2013). *Lo strappo di Luca*. Prima Comunicazione, 439, Ed. Genesis.
Raisch, S., Birkinshaw, J., Probst, G. and Tushman, M. L. (2009). 'Organizational ambidexterity: Balancing exploitation and exploration for sustained performance'. *Organization Science*, **20**, 685–95.
Rochet, J. C. and Tirole, J. (2003). 'Platform competition in two-sided markets'. *Journal of the European Economic Association*, **1**, 990–1029.
Sauermann, H. and Stephan, P. (2013). 'Conflicting logics? A multidimensional view of industrial and academic science'. *Organization Science*, **24**, 889–909.
Schilling, M. (1999). 'Winning the standards race: Building installed base and the availability of complementary goods'. *European Management Journal*, **17**, 265–74.
Schlesinger, P. and Doyle, G. (2015). 'From organizational crisis to multi-platform salvation? Creative destruction and the recomposition of news media'. *Journalism*, **16**, 305–23.
Schneider, S. and Spieth, P. (2013). 'Business model innovation: Towards an integrated future research agenda'. *International Journal of Innovation Management*, **17**, 1–34.
Seamans, R. and Zhu, F. (2014). 'Responses to entry in multi-sided markets: The impact of craigslist on local newspapers'. *Management Science*, **60**, 476–93.
Siggelkow, N. (2001). 'Change in the presence of fit: The rise, the fall, and the renaissance of Liz Claiborne'. *Academy of Management Journal*, **44**, 838–57.
Sosna, M., Trevinyo-Rodríguez, R. N. and Velamuri, S. R. (2010). 'Business model innovation through trial-and-error learning: The Naturhouse case'. *Long Range Planning*, **43**, 383–407.
The Economist. (2011). *Special report: The news industry. Reinventing the newspaper*. 7 July.
The Guardian. (2016). *Why Facebook is public enemy number one for newspapers, and journalists*. 20 September.
The Wall Street Journal. (2016). *Plummeting newspaper ad revenues sparks new wave of changes*. 20 October.
Teece, D. J. (1986). 'Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy'. *Research Policy*, **15**, 285–305.
Teece, D. J. (2010). 'Business models, business strategy and innovation'. *Long Range Planning*, **43**, 172–94.
Tripsas, M. and Gavetti, G. (2000). 'Capabilities, cognition, and inertia: Evidence from digital imaging'. *Strategic Management Journal*, **21**, 1147–61.
Utterback, J. M. and Abernathy, W. J. (1975). 'A dynamic model of process and product innovation'. *Omega*, **3**, 639–56.
Van de Ven, A. H. and Poole, M. S. (1990). 'Methods for studying innovation development in the Minnesota Innovation Research Program'. *Organization Science*, **1**, 313–35.
Vanhaverbeke, W. and Chesbrough, H. (2014). 'A classification of open innovation and open business models'. In Chesbrough, H., Vanhaverbeke, W. and West, J. (Eds), *New Frontiers in Open Innovation*. Oxford: Oxford University Press, 50–68.
von Hippel, E. V. and von Krogh, G. V. (2003). 'Open source software and the 'private-collective' innovation model: Issues for organization science'. *Organization Science*, **14**, 209–23.
Wirtz, B. W., Pistoia, A., Ullrich, S. and Göttel, V. (2016). 'Business models: Origin, development and future research perspectives'. *Long Range Planning*, **49**, 36–54.
Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd ed). Thousand Oaks, CA: Sage.
Zott, C. and Amit, R. (2007). 'Business model design and the performance of entrepreneurial firms'. *Organization Science*, **18**, 181–99.
Zott, C., Amit, R. and Massa, L. (2011). 'The business model: Recent developments and future research'. *Journal of Management*, **37**, 1019–42.