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Strategic renewal: Can it be done profitably?

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ABSTRACT

Industry transformation requires strategic renewal at the level of individual firms. Executives then face the dilemma of choosing renewal paths in the face of uncertainty over the competitive environment of the future, and hence the profitability of potential strategies. This dilemma motivates us to study industry transformation from the perspective of strategic renewal among 208 large firms in the global pulp and paper industry. The findings of our qualitative comparative analysis show that only a minority of firms in our sample succeeded in profitable proactive renewal. Content-wise, there were similarities in the pursued strategies over the wider population, but only a few maintained superior profitability while proactively renewing. Our results, overall, highlight the importance of understanding the processual nature and execution of strategic renewal.

1. Introduction

“If you don’t transform your company, you’re stuck” (Xerox CEO Ursula Burns, May 23, 2012) – this statement exemplifies a common assumption in the business press and among management gurus. However, according to a study by the Boston Consulting Group, 75% of attempted renewals fail (Walter et al., 2013). If this is so, to what extent is strategic renewal possible, and how should it be managed? This question has received extensive academic attention. Representing the latest phase of renewal research, Teece (2019) argues that strategic renewal is challenging due to the irreversibility of investments and uncertainty over their outcomes. Firms moving ahead with new technologies, product designs or geographical markets, for example, face an increasing cost of changing such decisions. Past commitments to strategies also create inflexibilities relating to “organizational structures, culture, and human capital” (p. 23). Moreover, the elements of the organization must be congruent to work well together (Teece, 2019). This means that changing one part has repercussions for the functionality of the whole organization.

The literature on strategic renewal defines it as “the process, content, and outcome of refreshment or replacement of attributes of an organization that have the potential to substantially affect its long-term prospects” (Agarwal and Helfat, 2009: 282). It includes changes in organizational resources and competences (Danneels, 2011), and the alteration of a firm’s path dependence (Volberda et al., 2001b). In their recent review, Schmitt and others (2018: 85) conclude that strategic renewal “focuses on the shift from one (competitive) strategy to another, rather than exploring specific competitive strategies’ antecedents, nature, and outcomes.”

The recurring elements in the above definitions include the notion of purposeful change to achieve better outcomes than without such change. We follow this co-creation approach to strategic renewal (Schmitt et al., 2018: 86) in which firms “proactively generate new opportunities and influence the market’s evolution” rather than realign with altered environmental conditions. An underlying assumption in proactive renewal is that some firms possess the capabilities to overcome their inertia to renew and actively fulfill their

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objectives, be it superior performance and/or long-term survival. An open question, correspondingly, is to what extent the idea of proactive strategic renewal is relevant in the analysis of industry transformations.

Earlier studies on industry transformations emphasize the role of new entries (e.g., Huygens et al., 2001) or firms outside the industry core (e.g., Jacobides et al., 2016) in catalyzing industry-level renewal processes. Moreover, the focus has been on the *variance* of renewal activities, that is, on the characteristics of the firm and the environment that influence what kinds of renewals are undertaken (e.g., Capron and Mitchell, 2009; Flier et al., 2003; Kim and Pennings, 2009; Volberda et al., 2001a). What has been ignored is the *sequence* of the renewal activities and the management of such processes. In addition, evolutionary studies (e.g., Barnett and Hansen, 1996; Huygens et al., 2001; Moodysson and Sack, 2016), focusing on the interplay between the firm and industry level, have empirically shown how and why the new entrants and their new combinations of capabilities and organizational goals diffuse into industries and essentially force incumbent firms to adapt. However, we have not identified many studies in which industry transformation happens through proactive renewals initiated by incumbents (for exceptions, cf. Flier et al., 2003; Kim and Pennings, 2009). Therefore, we are interested in two questions: (1) How does industry transformation aggregate from proactive renewals? (2) How and why do successful renewal processes proceed?

We focus on a specific kind of renewal: firms that sustain superior performance and renew despite already performing well. This proactive renewal approach is in contrast to the majority of case studies on renewal processes which tend to be triggered by declining performance due to environmental change (e.g., Agarwal and Helfat, 2009; Ben-Menahem et al., 2013; Crossan and Berdrow, 2003; Danneels, 2002; Danneels, 2011; Kwee et al., 2011; Rindova and Kotha, 2001; Tripsas and Gavetti, 2000). Our empirical exploration proceeds in three steps. Following examples from earlier configurational studies (e.g., Fiss, 2011; Grandori and Furnari, 2008), we first detect changes in strategy and structure associated with superior performance (i.e., success recipes or formulas) within an industry. These changes, in aggregate, indicate industry transformation. We then identify firms that switch from one success formula to another by maintaining relative profitability and denote them as successful renewals. Finally, we analyze these successful renewals from a process perspective, considering whether these exceptions contain more general theoretical value.

Our data comes from the global pulp and paper industry from 1989 to 2015. The industry is revelatory for the study of strategic renewal for two reasons: (a) chemical pulping technology is especially suitable for new product development (i.e., a firm may switch between product segments using its key technological knowhow and routines); and (b) the industry has been particularly turbulent since the 1970s due to globalization and radical changes in demand for different products. By identifying successful cases of strategic renewal from a population of 208 firms and subsequently analyzing the processual characteristics of their renewal with event structure analysis, we introduce a new level of empirical thoroughness to the research on strategic renewal and industry transformation.

Our study contributes to the strategic renewal literature in three ways. First, our qualitative comparative analysis indicates that success recipes appear simple, including only a few causal conditions, and suggest that complementarities among structural and strategic attributes are important to superior performance. Our research findings also complement the ongoing discussion on configurations of structural and strategic attributes leading to superior performance (e.g., DeSarbo et al., 2005; Doty et al., 1993; Fiss, 2011; Jansen et al., 2006). In line with the recent re-emphasis on the link between diversification and renewal (e.g., Kaul, 2012; Pettus et al., 2018), our success formulas suggest that related diversification could be an effective means of renewal because it enables firms to capture diverse opportunities.

Second, our event structure analysis of the rare successful renewals highlights an evolving path of resource-configuring activities, which underlines the importance of timing and pacing (Ben-Menahem et al., 2013; Volberda et al., 2001a). Successful transformers added new activities to their configuration of organizational attributes as the environment changed while hedging the risks of changes by maintaining old ones. Moreover, these few firms proactively built on the complementarities of activities such as releasing unprofitable resources, boosting operational efficiency, innovation, and product development, and securing market share in growing segments so that they are well-prepared for the next period's revenue generation (Cattani, 2006). Our findings also contribute to the conversation on industry transformations (e.g., Eggers and Kaplan, 2009; Jacobides, 2005; Kim and Pennings, 2009; Lamberg and Tikkanen, 2006; Porac et al., 2011). At the industry level, only a few firms who acted fast and proactively led the change in how value was created and captured in the industry (Spender, 1989). Other firms engaged in similar strategies yet with lesser quality in the execution of those strategies and subsequent higher costs of transforming. In aggregate, the mass of reactive and proactive renewal processes at the firm level results in industry-wide transformation.

Finally, in terms of a methodological contribution, our use of a set-theoretic approach and processual tracing technique offer the opportunity for more nuanced understanding of the processual nature of strategic renewal. The configurational approach (Fiss, 2007; Ragin, 2008) enables us to explore the complementarities of structural and strategic attributes in success recipes while the event structure analysis (Corsano and Heise, 1990; Griffin, 1993; Heise, 1989) sheds light on how the renewal processes evolve over time. We demonstrate how such a novel combination can generate additional theoretical and normative insights, and thus hold potential for

future work on strategic renewal.

2. Theoretical background

A recent review on strategic renewal¹ coins two views on the process: co-alignment and co-creation (Schmitt et al., 2018). The former sees renewal as a sequence of reactions to environmental change whereas the latter sees it as a proactive stance of continuous standard-setting and influencing industry evolution (see Table 1). In the present paper, we follow the latter approach in our quest to understand sustained superior performance. This view builds on some classic works of strategic renewal. Already at the dawn of renewal studies, Baden-Fuller and Stopford (1992) argued that firms within mature industries do not have to be victims of their environment and therefore they may have widely differing strategies that are based on the premise that demand is not an exogenous variable. Such strategies should be based on selective growth where new resources and capabilities are built to complement rather than substitute those already in existence. Moreover, such selectivity controls for the costs of growth, which may be substantial especially when the addition of new products or markets does not create economies of scale (Baden-Fuller and Stopford, 1992). Spender (1989) presented similar ideas under the concept of changing industry recipes. He views an industry recipe as an institutionalized rationality that can spawn different strategies. As some firms adopt a new rationality that spreads across the industry, the recipe changes. In consequence, the industry recipe comes with a degree of stability, but it is something that the firms create rather than a given factor (Spender, 1989). These classic works explicitly tie strategic renewal to industry transformation. Firms have widely differing strategies, and some firms adopt new ones that subsequently diffuse within the industry, resulting in changes in the industry recipe.

Proactive strategic renewal assumes that firms within an industry can have different structures and strategies. The origin of such intra-industry heterogeneity lies in different initial resource endowments and divergence forces, including local learning and feedback loops (Noda and Collis, 2001). For Baden-Fuller and Teece (2019), heterogeneity is driven by the capacity to perceive opportunities that others have not seen. As one firm chooses to try out an opportunity, others do not necessarily follow because of uncertainty over profitability. Research results on sustained superior performance suggest that following is less likely when an opportunity is created rather than discovered, that is, firms should focus on building mountains rather than climbing them (Henderson and Graebner, 2020). Such a mountain may mean, for example, the development of a new technology. As a case in point, some of the introductions of new types of tennis rackets resulted in a new industry-wide de facto standard, and hence industry transformation, while others did not (Kim and Pennings, 2009). Such novel technological designs come with the risk of choosing the wrong technology. The ability to take on such a risk likely depends on whether the organization is structured to be able to recover from wrong technological choices (Eggers, 2016). According to Eggers, the ability to recover is enabled by a hybrid R&D structure with centralized and decentralized components, and a focus on the business case rather than on specific technologies.

Proactive strategic renewal instinctively comes with a focus on timing and pacing. Proactive renewal allows the advantage of time to prepare strategies to deal with anticipated changes, but with the cost of limited knowledge of the anticipated shift (Teece, 2019). Firms may make wrong bets when preparing for change, the content of which is at least to some extent unknown. The time horizon for renewal varies according to the rate of change in the environment: stable competition and hyper-competition require different paces of renewal (Floyd and Lane, 2000). The alignment of internal and external rates of change is positively related to performance (Ben-Menahem et al., 2013). This is a goldilocks situation: the window of opportunity for action is limited and firms should not act too early nor too late (Calori et al., 2000). Klingebiel and Joseph (2016) emphasize the importance of timing–strategy alignment in innovation in relation to competitors whereas Katila and Chen (2008) advise firms to avoid “learning contests in which they search at the same time as their rivals”. The timing of proactive renewal is hence a firm-level choice whereas the determination of its appropriateness takes place at the industry level. Timing does appear to be a choice, as Volberda et al. (2001a) found when they observed that the speed of renewal is largely determined at the firm level and not at the industry or country level. To be able to move with proactive opportunity creation, firms should have an appropriate amount of slack. Too many slack resources focused on a resource-dissipating business may threaten the survival of the firm, but delaying slack resource allocation will likely decrease the stock of slack available to build the new business (Mollona, 2017). Slack is also required for maintaining and building absorptive capacity, the latter of which takes time (Ben-Menahem et al., 2013). Agility always comes with a cost (Teece, 2019), and determining the appropriate amount of slack is a proactive choice.

Baden-Fuller and Stopford (1992) already highlighted the importance of building resources and capabilities that complement rather than substitute the existing ones. Flexibility requires a degree of stability – renewal is a combination of preservation and transformation (Calori et al., 2000). The ability to build new resources and capabilities also depends on the scope of the firm. Firms with a broad portfolio of skills benefit from adding more, but such additions are risky for narrow portfolio firms (Wezel and van Witteloostuijn, 2006). Similarly, the positive performance effects of diversification strategies depend on their coherence (Dosi et al.,

¹ Strategic renewal includes the assumption that some firms possess the capabilities to overcome their inertia to renew and actively fulfill their objectives, be it superior performance and/or long-term survival. To understand how firms can successfully renew, scholars have explored key mechanisms underlying such a phenomenon. Several distinct but related mechanisms of strategic renewal in the literature include exploration–exploitation, ambidexterity, innovation, and dynamic capabilities (for a quick review see Tuncdogan et al., 2019: 3–9). Under dynamic business environments, firms must select, modify, and enhance its resources and capabilities. Such resource-reconfiguration actions engage dynamic capabilities. Teece (2019) discusses how successful strategic renewal is achieved through the formation and enactment of dynamic capabilities. Agarwal and Helfat (2009: 283), suggest “strategic renewal contains a role for dynamic capabilities through modification of the organization’s resource base.” In this paper, we assume dynamic capabilities to be the underlying mechanism for firms to renew successfully.

Table 1
Positioning the concepts of proactive and reactive renewal and dynamic capabilities.

	Foci	Antecedents	Firm-level outcomes	Industry-level outcomes
Proactive renewal (co-creation)	Process and outcome preceding renewal	Creation of opportunities	Continued high performance	Increases inter-firm variation and potentially starts a bandwagon effect.
Reactive renewal (co-alignment)	Process and outcome of renewal	Drop in performance	Increase in performance	Decreases inter-firm variation.
Dynamic capabilities	Mechanism necessary for renewal	Experience, learning, and managerial vision	Accumulation of capabilities and change	NA

2020). Moreover, entering into new technologies is found to be more successful with acquisitions as opposed to greenfield investments (Blomkvist et al., 2014), and the elimination of assets in mature industries tends to have a negative effect on performance (Morrow et al., 2004). The adverse effects of elimination are likely explained by interdependencies between activities. Such interdependencies may increase inertia, but they also enable a flow of resources and information which are necessary for renewal (Albert et al., 2015). Again, we face a goldilocks situation: structural differentiation is required for developing new things, but sufficient integration is necessary for establishing an appropriate context for such development efforts (Burgers et al., 2009).

Proactive strategic renewal includes the assumption of management action. Executives need to envision how the environment is likely to change in the future and make active decisions on which opportunities to create and exploit. Managerial intentionality is the intermediary between organizations and their environments, and it explains outlier behavior and inter-firm differences in the frequency and timing of renewal actions (Flier et al., 2003). In the model by Hutzschenreuter et al. (2007), managerial intentionality varies in the degree of focus on innovation and imitation, the geographic focus on global or regional operations, and the aspiration level, meaning whether executives perceive their comparison group to be the average players or the firms at the performance frontier. Managerial intentionality then needs to be transmitted to the lower levels of the organization through empowering employees (Chakravarthy and Gargiulo, 1998). Decisions by top management should be followed by the authorization of lower levels of the organization to progress with opportunities (Angwin et al., 2015). When the “green light” fails to appear, firms fail to proceed with favorable opportunities.

Proactive strategic renewal operates at the intersection of management action and industry transformation. Managers instigate strategic changes with the expectation of positive performance outcomes and these changes aggregate into industry transformation. The firm-level outcomes thus depend on industry-level developments which are hard to predict. Furthermore, at the firm level renewals may cover changes in various strategic and structural attributes. In our empirical work, we are interested in strategic renewals where firms sustain superior performance by shifting their configurations of structure and strategy measured by specific attributes. A growing body of organizational literature has recognized that organizational outcomes tend to be the product of interactions among interdependent attributes (Siggelkow, 2002; Tushman and O’Reilly, 2002). This interdependence resonates with the insight of configuration theory, which underscores the aggregated and systemic aspects of organizational phenomena (Miller, 1986, 1987, 1996). The configurational approach has therefore been the preferred choice for research on organizational design despite being under different labels, such as typologies, taxonomies, generic strategies, or archetypes (e.g., Burns and Stalker, 1961; Furnari et al., 2020; Hofer and Schendel, 1978; Miles and Snow, 1978; Miles and Snow, 2003; Mintzberg, 1979; Mintzberg, 1983; Porter, 1980).

Building on the interdependent nature of configurational thinking, the notion of complementarities (Milgrom and Roberts, 1995; Whittington et al., 1999) highlights the risk of transitioning between configurations of organizational attributes. This notion emphasizes the benefits of coherent and interdependent, rather than individual, modifications of organizational variables because “doing more of one thing increases the returns to doing more of another” (Milgrom and Roberts, 1995: 181). The payoff for changing one organizational attribute is dependent on the potential synergy among other elements of a firm’s structure and strategy. In other words, a firm’s attribute that is associated with positive performance might, when combined with its complements, produce negative payoffs when considered individually. Therefore, the possibility of a successful strategic renewal depends on how firms coordinate their renewal themes (across and within categories) to ensure the complementary benefits among the firm’s attributes. Such a coordinating theme is central to a firm’s competitive advantage.

In the next section, we discuss the characteristics of the pulp and paper industry as our research setting. We then identify successful cases of strategic renewal from a population of 208 firms, elucidate the characteristics of those successful renewals, and how such processes take place.

3. Research setting: the pulp and paper industry from 1989 to 2015

A valid question concerns the existence of an industry called the “pulp and paper industry” (Stokes and Banken, 2015). Although we recognize the heterogeneity among the firms that we treat as members of a specific population, we have strong reasons to see the industry as a relevant study object. First, there is a long line of research (e.g., Cohen, 1984; Ghosal and Nair-Reichert, 2009; Laestadius, 1998; Lamberg et al., 2012) perceiving the pulp and paper industry as a unitary population of companies. Second, an established published ranking for the industry as a global population already demonstrates its existence as a sociocognitive group (e.g., Porac et al., 1995; Porac et al., 2002; Porac et al., 2011), with shared ideas about product ontology (everything produced from different forms of pulp), an industry recipe (how value is created and captured; Spender, 1989), reputational ranking (which companies are the best), and boundary beliefs (which firms belong to the social group of pulp and paper firms). Unlike many other industries (e.g., grocery

retailing or console games), the main binding mechanism is not a shared pool of customers but chemical and mechanical pulp and their technical characteristics – in some sense like the oil industry or other raw material-centered industries.² Accordingly, our choice to study the pulp and paper industry follows established research traditions both conceptually and in terms of empirical research.

At the outset, the paper and pulp industry would look like a manifestation of Teece's (2007: 1325) characterization of "[...] rust belt' industries that experience low rates of technological innovation where complementors are not important, and where the coevolution of technologies and institutions is not significant." Before the 1990s, the industry was relatively stagnant. Primary competitive advantages originated on a Chandler (1990) scale and scope mechanisms conjoined with investments in gradually improving paper machines (Toivanen, 2005) and pulp chemistry (Hujala et al., 2013). The demand for the main products – printing papers and packaging materials – correlated very strongly with GDP growth (Diesen, 1998), making strategic planning relatively simple (Carlsson et al., 2009; Davis et al., 1992; Kald, 2003) compared to more volatile industries. However, if we look at the period of industry evolution from the late 1980s to the 2010s, the paper and pulp industry is relatively distant from this picture. Most of the largest companies have made a change contingent on five mega-changes, each affecting the industry's strategic options directly. These industry-shaping forces are listed and characterized in Table 2.

The paper and pulp industry's unique feature is the flexibility of chemical pulp as raw material for different types of products in the business-to-consumer and business-to-business segments. Accordingly, most of the market segments have existed since the early phases of the industry. However, if we consider all potential products, from printing papers to diapers and textiles, and focus on different geographical markets (see Fig. 1), the industry looks less stagnant. A typical example is tissue paper, which in the US and other developed countries is a brand business and technically very advanced (in terms of weight and softness). In contrast, in some countries, tissue is used less, or the quality is deficient. Tissue and diapers also reflect the dramatic changes in business approaches during the period of our study. Instead of building on increasing operational effectiveness, the main emphasis in winning formulas was maximizing customer satisfaction in terms of quality in tissue (likewise in diapers) and investing, especially in marketing:

Every operation, from winding and sheeting to packaging and palletizing, needs to reflect the need for increased product differentiation ... there will almost certainly be fewer tissue lines in this part of the world that run the same product, day-in, day-out. The demands of the marketing department will be felt on the production floor to an unprecedented degree [...] as these technologies decrease the commoditization of tissue and add value. A trend that began with simple, single-color designs, often based on colored laminating glues, is gaining increasing sophistication, with the reproduction of intricate, multi-colored cartoon characters, for example. (Hellner, 2007: 44)

In this model, some traditional sources of advantage – especially the pulp price – became less important than in the traditional core businesses. In the 1990s, most large companies still focused on making newsprint and magazine papers. The market for this product, however, became increasingly difficult. One reason was the emergence of electric communication channels and the subsequent decrease in demand:

In the long term, the Internet is expected to curtail newsprint consumption by 537,000 tons by 2004, according to Resource Information Systems Inc. (RISI). In addition, consumption will be impacted by the trend of publishers slimming their newspapers to a 50-in web, which can reduce newsprint consumption by up to 8%. (Mcintosh, 1999: 11)

Another reason was the increasing size and productivity of paper machines. When productivity overturned GDP growth (i.e., the basis for market growth), prices started to decrease. Simultaneously, the industry globalized rapidly. China and South Asia became important production sites with the most modern paper machines. As there was no significant demand at first, the new machines further complicated the global market situation. Chinese and Asian firms, for example, first learned to use their modern paper machines and then expanded into the global market with superior productivity and possibilities to use their capabilities in head-to-head competition with US and European companies.

China is the one nation that does and will account for more than half of the absolute growth in paper and board – more than the US, Europe, Latin-America combined. A very interesting opportunity indeed, however with the same fundamental demand as anywhere else: we must be able to build a sustainable competitive differentiation. Stora Enso CEO Jouko Karvinen (Rushton, 2010: 18)

Likewise, firms specialized in making pulp from eucalyptus entered the global competition from countries like Portugal and Brazil, which previously had been exporting markets rather than producers and competitors.

The strength of VCP was the flexibility to produce different grades of paper with 100% eucalyptus fiber – coated, uncoated, thermal, label, carbonless – sharing the time of the paper machine ... we want to have the capacity to produce different grades of paper, ... We have partners in Europe trying to make quality paper from 100% eucalyptus fiber. We looked at how to become global scale in paper ... Votorantim Celulose e Papel (VCP) CEO Jose Luciano Penido (Toland, 2007: 14)

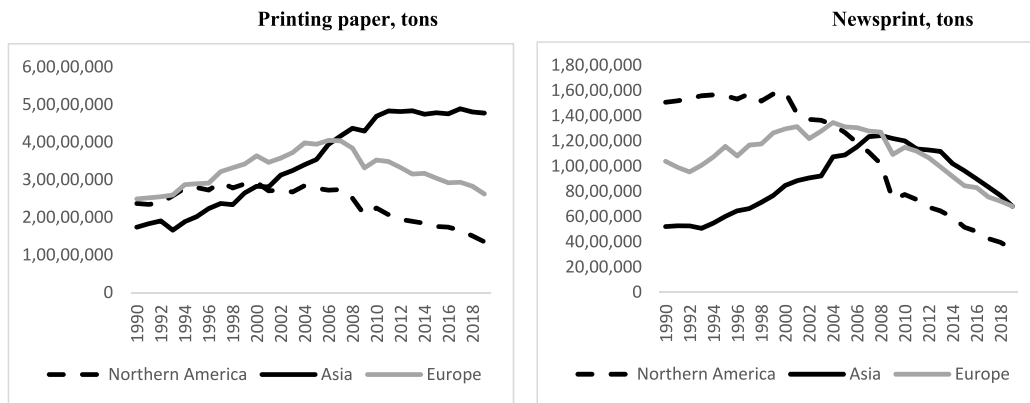
Business problems in the printing paper market started to increase the importance of packaging, hygiene, and tissue products since 2000:

The US and Europe remain the larger markets, but annual consumption growth is lower than the growth of the economy. Paper consumption growth in these areas is in fact lower than the GDP growth, but tissue grows more, even in a weak economy, so there should always be growing demand. VCP CEO Jose Luciano Penido (Rushton, 2008: 15)

² SIC codes for the industry as listed in the rankings are 2611 (pulp mills), 2621 (paper), 2631 (paperboard), and 2676 (sanitary paper products).

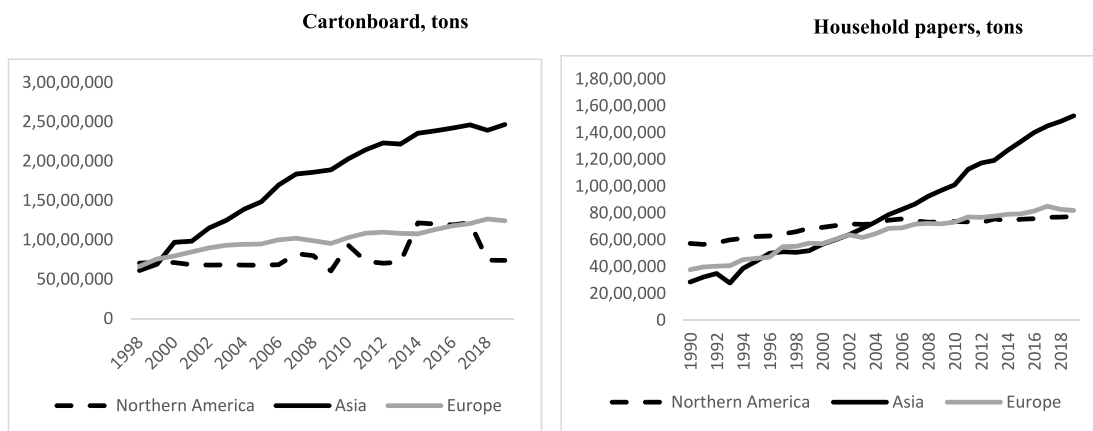
Table 2
Pulp and paper industry-shaping forces 1989–2015.

	1989–1999	2000–2010	2011–2015
Demand	Starting from the introduction of cable TV and later Internet printing papers, the demand for printing papers gradually declined, first in the US, later in Western Europe, and Australia.	Slowly growing or declining printing paper market resulted in overcapacity, especially in the US and Europe. Demand for packaging materials and tissue exhibited gradual (US and Europe) or strong (China, South America) growth.	Increasing rapid decline in the printing paper market yet simultaneous strong growth in packaging materials (as an outcome of expanding e-commerce).
Technology	Continuing efficiency in printing paper machines, the introduction of record-wide machines in China.	A stable period of low investment rates into new machines.	The main emphasis is on more efficient packaging material machines and conversion of printing paper machines to produce thin paperboard.
Institutional pressure	The overarching institutional pressure was globalization in all forms: homogenization of practices and processes, presence in multiple geographic regions and market segments, and subsequent multipoint competition between the largest companies.	Increasing public pressure, especially from EU authorities, to reduce waste and follow the FSC certificate. Simultaneously, similar pressures to act socially responsible emerged in “new markets”, especially in South America.	Environmentalism and heavy societal pressure signal responsibility in reducing carbon footprint and protecting biodiversity has become a norm in the industry.
New markets (and competitors)	China and Russia open their markets for foreign direct investments, which were lucrative due to the low level of paper consumption originating in the communist era. Simultaneously, especially Asian corporations entered the domestic and global market.	South American firms became more of a threat due to the proximity to land areas suitable for eucalyptus farming.	E-commerce expansion and the subsequent need for packaging materials suddenly tilt US corporations from a declining trajectory to the center of new product development.
Resource competition	The traditional emphasis on Northern hemisphere fibers (mainly spruce and pine) continued, complemented with recycled paper mass.	Eucalyptus becomes a new option for making pulp suitable for packaging materials, increasing the importance of South America as an investment target for incumbent companies and new companies from Argentine, Brazil, and other South American countries.	The importance of Northern fiber rises again as the range of products made from chemical pulp expands.



- Marketing: Business to business, based on highly routinized relationship marketing.
- Technology: Technological front-end driven by cost optimization and quality (opacity, whiteness, glossiness, printability).
- Price per ton: Higher than newsprint yet low and trend downwards.

- Marketing: Business to business, based on highly routinized relationship marketing.
- Technology: Highly standardized, driven by efficiency and cost optimization.
- Price per ton: Relatively low and trend downwards.



- Marketing: Business to business, based on highly routinized relationship marketing.
- Technology: High variety depending on product functionality (range from perfume boxes to industrial wrapping).
- Price per ton: High variety, trend upwards.

- Marketing: Business to consumers, based on brand image and distribution channels in retailing.
- Technology: High variety depending on product functionality, less emphasis on efficiency than in printing and newsprint.
- Price per ton: High variety, trend upwards.

Fig. 1. Global pulp and paper market trends.

Accordingly, an important factor was the economic development in China, South America, and former Warsaw Pact countries, and another the emergence of e-commerce requiring more and better packaging solutions. It is also noteworthy that paper machines suitable for newsprint and printing paper production could be converted to make thinner paperboard qualities. Accordingly, the largest companies started to look for new business opportunities outside the traditional core businesses. The most recent years have meant an industry transformation from the paper industry to “bioproducts,” meaning an increasingly innovative use of chemical pulp in various product segments and new types of pulp to replace oil-based plastic products.

On top of developing our existing businesses we aim to develop production technologies and new products with high added value. Biofuel are among these products. The demand for biofuel is slowly growing and finding added value for energy wood like logging residues, stumps and bark is interesting for us. Therefore building a biomass-to-liquid bio refinery may be an option for us providing we get the EU’s New Entrants Reserve (NER300) grant for the development of the new technology. The cost of

the first full scale commercial bio refinery is significant, around EUR 300 million ... UPM president and CEO Jussi Pesonen (Rushton, 2011: 14)

If we think of market development as a function of various geographical markets and product segments, we have an increasingly complex industry environment lacking a uniform success recipe. In one sentence, the industry has become increasingly global not only in terms of technology and industrial standards (as prior to the 1970s) yet also in terms of product markets and raw material availability: practically all firms in our sample are dependent on global competitive dynamics. As Appendix 1 illustrates, amid radical industry transformation, all surviving firms eventually renewed themselves.

4. Data and method

4.1. Fuzzy set qualitative comparative analysis

To identify successful configurations of structures and strategic behaviors, we use fuzzy set qualitative comparative analysis (fs/QCA) (Ragin, 1987, 2000, 2007, 2008). This choice was driven by the need to understand causality as set-theoretic relations rather than as correlations (Fiss, 2007; Ragin, 1987, 2000, 2008). Fs/QCA characterizes three aspects of causal complexity: conjunction, equifinality, and asymmetry (Misangyi et al., 2017; Short et al., 2008). Conjunction implies that outcomes of interest are the results of interdependent attributes that combine into distinct configurations. Equifinality refers to the idea that more than one configuration can be linked to a particular outcome (Katz and Kahn, 1978). For instance, high levels of performance might be achieved through several paths (Gresov and Drazin, 1997). Asymmetry means that the set of causal conditions leading to the presence of an outcome could be different from the set leading to the absence of such outcome. Due to these characteristics, fs/QCA has become a popular method in strategic management research (e.g., Fiss, 2011; Greckhamer et al., 2008).

4.2. Data measurement and calibration

Firms in our sample came from the longstanding PPI Top 100 list, which is published annually by the magazine *Paper and Pulp International (PPI)*. The list features major players from the global pulp and paper industry and has been recognized by industry professionals since the 1970s. The ranking is based on the net sales of pulp, paper, converting, and merchandising (PPCM) operations.

We gathered news headlines and abstracts from companies which have been ranked in the top 100 in the pulp and paper industry from 1989 to 2015. In total, there are 208 firms that have been listed in the PPI Top 100 at least once during the examined period. We were interested in the top 100 firms in the industry because renewal might become more challenging with increased complexity. As firms age and grow, they become more complex and hence it is more difficult for them to reconfigure their interdependent structural and strategic attributes to fit with the changing environment (Barron et al., 1994; Bruderl and Schussler, 1990; Fichman and Levinthal, 1991).

Our data on strategic actions come from the Paperbase International database hosted by Innventia. We coded competitive actions from newswires and abstracts. In addition, we also extracted other relevant data for each firm from PPI in the September issues of all years between 1989 and 2015. These data include figures for pulp and paper sales, profit, and the number of employees. We compiled data relating to founding years, product and market diversification from various sources including companies' reports, and were able to use the database of paper and pulp companies of the world. We measured market growth as the growth in global paper and paperboard consumption.

To calibrate our outcome and causal measures, we referred to the best practices in QCA studies in strategy and organization research as proposed by Greckhamer et al. (2018). We transformed these measures into fuzzy scores by applying the direct method of calibration. This method requires three qualitative anchors: full membership (1), full non-membership (0), and a crossover point (0.5), which is "the point of maximum ambiguity in the assessment of whether a case is more in or out of a set" (Ragin, 2008: 30). Uncalibrated measures permit assessment of the positions of cases relative to one another. Calibrated measures, on the other hand, are directly interpretable. For example, calibration would permit one to classify a company as a high or low performer rather than as merely better or poorer performing than some other company.

To determine the breakpoints for calibration, we had looked for external criteria in the pulp and paper industry reports. However, we decided to use the properties of the study's sample to derive the breakpoints (examples of studies using this method: Greckhamer, 2011, 2016) for three reasons. First, the top 100 companies produced on average 69% of the industry's output throughout the research period. Hence, their data largely represent the context of the industry in the given timeframe. Second, since our study dates back to 1989, there has been no consistent source of industry information regarding organizational performance and the attributes in question, such as strategic actions and structural characteristics. Finally, also an important reason, when accessing the outcome of strategic renewal, we take the position that success or failure should be measured relatively in a population (the focal firm versus its rivals) within a certain timeframe (van Rooij, 2015). Thus, using within-sample breakpoints will enable such assessment.

4.2.1. Outcome measure

We focus on proactive strategic renewal, which assumes that firms renew without existential threat. Hence, our research mission is not about avoiding exit, but about maintaining superior performance. Our outcome of interest is therefore firm performance, measured as net profit margin and calculated as net earnings (after tax and excluding extraordinary items) divided by sales revenue. Following earlier renewal studies, we used profitability as a measure of firm performance (e.g., Haleblan and Finkelstein, 1993; Jansen et al., 2006; Volberda et al., 2001b; Zahra, 1993; Zhang and Rajagopalan, 2010). Both net profit and sales revenue account for pulp, paper,

converting and merchanting operations only. We used a net profit margin specific to pulp and paper-related operations as a proxy for firm performance instead of other indicators such as return on capital (or total assets) because some of the firms in our dataset operate in multiple segments other than pulp and paper. Thus, an overall return on capital may not accurately and consistently reflect the performance of pulp and paper operations in our sample of firms. This is another reason why we could not use industry data (e.g., industry median return on assets) to simply calibrate our data.

Data to calculate the net profit margin were collected from the *PPI* Top 100 magazines. The average net profit margin for the whole dataset (208 companies, 1989–2015) was 7.6%. The breakpoints were set for each period separately. Furthermore, to avoid anchored breakpoints skewing toward negative cases, the calibration process treated company cases with negative profitability as zero profitability. We chose the 90th percentile as the breakpoint for full membership of superior performance, the 10th percentile for full non-membership, and the 50th percentile for crossover threshold. Table 3 reports fuzzy scores for performance outcomes for the three periods and other causal measures.

By comparing the firms' raw profitability (uncalibrated measure) across the periods, we observe that 12 cases successfully improved their profitability from period 1 to period 2, and 29 cases did the same from period 2 to period 3 (see Appendix 2). This pattern is expected in a large sample, and has been extensively studied in the turnaround literature (e.g., Filatotchev and Toms, 2006; Ndofo et al., 2013). Nevertheless, by comparing the fuzzy scores (calibrated measure), we notice that there are only a few cases which successfully maintained superior performance from one period to another. A fuzzy score of equal or higher than 0.95 indicates a superior performance. The calibrated measure allows us to see which firms have been the superior performers within a period (by calibrating against other firms' performance within that specific period). Calibration is meaningful because firms tend to compare among themselves. In addition, calibration within a specific period is important because firm operation is embedded in a certain context. The external environment in the 1990s is different from the one in the 2000s. Therefore, a raw profitability margin of 19.3% is considered superior performance in 1990s, but this must be more than 21.5% in the 2000s (see Table 3 Summary of calibration for outcome and causal conditions). In a similar vein, for example, although Suzano's profit dropped from 34.6% to 22.1% from period 1 to period 2, the firm is still considered as performing superiorly against its peers in both periods. This is because its profit margins' fuzzy scores surpassed 0.95.

The turnaround literature has been largely interested in firms that renew for profitability reasons, from low to high(er) profitability, while little attention has been paid to firms that renew in a proactive way and remain competitive. The fact that only a few cases managed to sustain their superior performance is an interesting finding, and it merits further investigation.

4.2.2. Causal conditions

Strategic attributes: Drawing on Eisenhardt and Martin (2000), we propose four ways a firm can (re)configure its resources base: leveraging, creating, accessing, and releasing, through which it can achieve new resource configurations to cope with changing market circumstances. Leveraging resources enables renewal through drawing on the firm's existing resources. One example of leveraging is to extract additional value from underutilized resources and capabilities to serve a different market fit subject to the fungibility of such resources (Danneels, 2002; Miller, 2003). Second, a new competence may be built through combining newly created resources internally, which requires explorative learning (Levinthal and March 1993). The first two resource configuration modes correspond to two conventional mechanisms: respectively, internal actions of exploitation and exploration that firms employ to develop and create knowledge in order to better fit into their environment according to organizational learning and adaptation theories (Levinthal and March 1993; Levitt and March 1988; Lewin et al., 1999; March, 1991). Third, an alternative way to alter the resource base is to access new resources from relationships and interactions with other organizations instead of building the new one on its own. Examples of this mode include alliances, technology consortia, merger and acquisitions (Das and Teng, 2000; Harrison et al., 2001). This third mode re-emphasizes alternative views of interfirm competition that go beyond the conventional rivalrous mode of thinking (Chen and Miller, 2015), consistent with the literature on competition-cooperation (Gnyawali and Madhavan, 2001; Khanna et al., 1998; Lenz, 1980), and stakeholder theory (Freeman, 1984; Freeman et al., 2010). Finally, the last mode of resource modification involves shedding existing resources, such as cutting or deferring capital spending and unessential maintenance, reducing working capital, reducing staff or divesting assets in a business unit when such unit is no longer profitable or in line with the organization's broad strategies. The cut might also be done to support other operations in difficult times with a focus to stay alive. In addition, firms may choose to exit a market to avoid rivalry or to strategically redefine their market positions. Market exit can therefore be considered as both an outcome of interfirm competition as well as a strategic move (Baum and Korn, 1996; Porter, 1980). This corresponds to the last mode, resource releasing.

We performed the same calibration process and anchored thresholds for all causal measures (four categories of strategic actions: leveraging, creating, accessing, and releasing). Furthermore, to the best of our knowledge, there has been no study that calibrated firms' strategic attributes by the percentage of action categories. Since the average figures of the causal measures do not change drastically, we used one set of breakpoints to calibrate throughout three periods. The measures for *strategic actions* were calculated as the sum of moves undertaken by a firm in each period (Smith et al., 1997; Young et al., 1996). To neutralize the effect of varying numbers of news items per period, the number of firm actions assigned to a particular category in a particular period was divided by the total number of identified firm actions in that period. To calculate the three breakpoints for each action measure, we took the 10th, 50th, and 90th percentiles, respectively, from the series made of the relative shares from 208 firms for a period of 27 years (1989–2015) in each action category. For example, referring to Table 3, in the CREATING measure, if the relative share of the internally-creating-new-resource category in a certain period was below 4%, a fuzzy score of 0 was given, while a share of more than 40% gave that observation full membership (fuzzy score of 0.95).

Structural attributes: *Firm age* was measured in years between the founding year of the firm and the year of actions under analysis

Table 3
Summary of calibration for outcome and causal conditions.

Calibration for Outcome measure				
Net profit margin calculated as net earnings (after tax and excluding extraordinary items) divided by sales revenue for each period. Both net profit and sales revenue account for pulp, paper, converting and merchandising operations only.				
Percentile	Fuzzy score	1989–1999	2000–2010	2011–2015
0.9	0.95	19.30%	21.50%	11%
0.5	0.5	9.70%	5.60%	4.40%
0.1	0.05	2.40%	1.20%	1.50%

Note: Within a period, firms with an outcome measure of fuzzy score that is equal to or more than 0.95 are considered as superior performers in such period.

(Miller and Chen, 1996). *Organization size* was based on the number of employees. For the measure of *market diversity*, two components were included. Geographic expansion (“GEOEXP”) was measured as the number of markets where the firm sells its products (i.e., America, Asia, Australasia, Europe, Middle East, Scandinavia, and South America). Product diversification (“PRODIV”) is the number of product types each firm produces. There were seven options available: pulp, paper, tissue, packaging, forest product, other paper and pulp related products, and others. We used the fs/QCA software package 3.0 (Ragin and Sean, 2017) for this analysis.³

Out of the 208 firms that have appeared on the *PPI* Top 100 list once from 1989 to 2015, 61 have exited the industry over the years. While 59 firms exited via mergers and acquisitions, only two firms exited via dissolution (see Appendix 3). Effectively, this results in 67 full cases in the 1989–1999 period, 96 in the 2000–2010 period, and 91 in the 2011–2015 period. A full case in our sample refers to a firm with all the necessary data available for calibration during the period of study.

5. Identification of success recipes and successful renewals

We first conducted necessity tests of all conditions and their negation, applying a generally accepted rule-of-thumb consistency benchmark of ≥ 0.9 (Schneider and Wagemann, 2012) and considering coverage as the measure of a necessary condition’s relevance (Ragin, 2006). We then proceeded to conduct sufficiency analyses using Ragin (2008) truth table algorithm. Since the number of cases in one temporal window was relatively large, the minimum acceptable frequency threshold was set to at least two to avoid interference from configurations with one case. The frequency threshold identifies the minimum number of observations that must be present for a truth table row to be included in the analysis. For example, if we specify a frequency threshold of two, any truth table row with fewer than two observations will be classified as a “remainder,” that is, it should be treated as if they do not empirically exist. Furthermore, the lowest acceptable raw and PRI (proportional reduction in consistency) consistency score for solution was set at higher or equal to 0.78, which is above the minimum recommended threshold of 0.75 (Ragin, 2006, 2008). Recent QCA studies in top academic journals in management (Dwivedi et al., 2018; Garcia-Castro and Francoeur, 2016) have also applied consistency thresholds of at least 0.75–0.76 in their analyses. However, scores of less than 0.75 generally indicate substantial inconsistency and that a sufficiency relationship does not exist. We followed the current convention and report a combination of parsimonious and intermediate solutions (Fiss, 2011; Ragin and Fiss, 2008). Further detailed discussions on the nature of the causal inference in the fs/QCA as well as on the set-theoretic definitions of necessity and sufficiency can be found in Ragin (2000); the truth table algorithm is discussed in Ragin (2008); and for more on core and peripheral conditions as well as neutral permutations, see Fiss (2011).

Overall, necessity tests showed no presence of necessary conditions while sufficiency analyses yielded various configurations of structural and strategic attributes linked to superior performance. Table 4 shows the summary of our fuzzy set analyses for three periods. The format and notations for solution tables follow Ragin and Fiss (2008), and Fiss (2011). Black circles (“●”) indicate the presence of a condition, and circles with a cross-out (“X”) indicate its absence. In addition, large circles refer to core conditions, and small circles represent peripheral conditions. Blank spaces in a solution indicate a “don’t care” situation in which the causal condition may be either present or absent.

Table 4 shows that success solutions in all three periods exhibit a level of consistency of over 0.8. Following the convention, we further report the solution coverage. The overall solution coverage scores vary from 0.18 to 0.36, indicating that these configurations account for at least 18% of the instances of outcome (as superior performance) in a certain period. This suggests that there are other high-performing configurations that are not identified in this analysis due to low frequency, meaning single cases. The achieved coverage scores are in line with other studies applying QCA (e.g., Bell et al., 2014; Dwivedi et al., 2018). In addition, there exist only peripheral conditions in configurations from 2011 to 2015. The general implication is that although there is a path to superior profitability after 2011, it does not include core causal conditions. Additionally, it is interesting to note that the number of configurations for superior performance dropped from four pathways to one during the studied period. This trend means that the variety of profitable strategies decreased, which might be due to the lower demand growth trends in the later years.

There are two main configurations that lead to superior performance in the first period of 1989–1999. S1.1a&b represent old and

³ Moreover, Ragin (2008) recommends avoiding the use of 0.5 as the membership score for causal conditions. Due to the law governing the intersection of fuzzy sets, cases with scores of exactly 0.5 are difficult to analyze. To avoid such technical issues and ensure that no cases are dropped from the analyses, we added a constant of 0.001 to the causal conditions of scores below 1 (Fiss, 2011; Greckhamer, 2011; Ragin, 2008).

Table 4
Configurations for achieving superior performance.

Calibration for Structural attributes					
		SIZE	AGE	GEOEXP	PRODIV
Definition		Firm size is based on the number of employees	Firm age is measured in years between the founding year of the firm and the year of actions under analysis.	Geographic expansion is measured as the number of markets where the firm sells its products	Product diversification is the number of product types each firm produces
Percentile	Fuzzy score				
0.9	0.95	25,028	139	5	5
0.5	0.5	5183	57	2	3
0.1	0.05	1459	10	1	1

Calibration for Strategic attributes					
		CREATING	LEVERAGING	ACCESSING	RELEASING
Four modes of resource configuration					
Definition		Creating new resources internally	Drawing on existing resources	Accessing new resources from external parties	Shedding existing resources
Examples		New product development, new raw material, new technologies, new R&D activities	Investments or streamlining activities to increase capacity, to enhance operational efficiency and cost savings	Joint venture, alliances, technology consortia, merger and acquisitions	Cutting or deferring capital spending and unessential maintenance, reducing working capital, reducing staff or divesting assets in a business unit
Percentile	Fuzzy score	Share of creating activities over total activities in a period by a firm	Share of leveraging activities over total activities in a period by a firm	Share of accessing activities over total activities in a period by a firm	Share of releasing activities over total activities in a period by a firm
0.9	0.95	40%	36%	50%	45%
0.5	0.5	21%	14%	32%	25%
0.1	0.05	4%	3%	14%	8%

large firms that generally focus on leveraging on existing resources and internally creating new ones at the same time (subsequently denoted as resource-leveraging and creating activities). Firms such as Boise, Klabin, UPM, Oji Paper, and Weyerhaeuser followed this recipe. One possible underlying complementary is that long-established and large corporations may possess sufficient resources to carry out both process and product innovation. In some cases, these resource-leveraging and creating activities were supported by the reorganization activities. On the other hand, while S1.2a&b are old firms, they are well-diversified in products and have been expanding to several different geographical markets. Intuitively, because they are diversified, their main strategies have been largely merger and acquisition as well as collaboration. Smurfit Kappa, Domtar, Munksjö, and Suzano Papele Celulose adopted this configuration. Unlike those following configuration S1.1, the firms following the S1.2 recipes had the tendency to acquire new capabilities from external parties.

Turning to the next period of 2000–2010, S2.1a&b describes diversified firms (sometimes focusing on both resource-leveraging and creating activities) that secured their superior performance mainly by reallocating or divesting their resources. Solution S2.1a is similar to S1.1a but the causal conditions take turns being either core or peripheral. Examples of firms sticking to recipes S2.1a&b include Suzano Papele Celulose, Metsä, Rayonier, and Neenah Paper. As for configurations S2.2 and S2.3, they encompassed another two alternative paths to superior return but included only peripheral ones. We observed that firms following recipe S2.2 (e.g., Soporcel, Portucel) were diversified (though not necessarily old and large) yet only focused on leveraging on current resources. In contrast, firms echoing S2.3 (e.g., Procter & Gamble, Kimberly Clark) were old and large corporations whose strategies mainly included creating new resources.

There was only one configuration that led to superior performance in the last period of 2011–2015. Firms, such as Procter & Gamble, Kimberly Clark, Mayr-Melnhof, and DS Smith, endorsed this recipe. They were long-established, large, and diversified firms. Their strategies have been a combination of internally creating new resources and externally acquiring resources, which is like S2.3 except for an additional action category of collaboration.

In general, while success recipes appear relatively stable between the first two periods, none of them continued to generate superior performance in the third period of analysis. Additionally, the majority of the configurations are simple and they focus around a few key elements. For instance, almost half of the superior performance configurations in Table 4 consist of one single strategic attribute (S1.2a, S2.1b, S2.3, S2.4), a third include two strategic attributes (S1.1b, S1.2b, S3.1), and only a fifth feature a combination of three strategic actions (S1.1a, S2.1a). This finding is contrary to the risk of too simple or monolithic strategies highlighted by Miller and Chen (1996). Miller (1996) further emphasizes the need for reassessment to avoid being too narrowly focused and too simple to match the environmental complexity.

Despite the simplicity of a successful recipe and the fact that firms adopted different structural and strategic configurations in different periods to maintain superior performance, only a few did it successfully. Moreover, complex multiple interactions of organizational attributes potentially contribute to the difficulty of successful transitions between configurations. A further investigation of

truth tables and observations consistent with the high performing configurations (Table 4) identified firms that transformed and whether they did it successfully. Of the limited number of firms that manifested successful configurations (the lower part of Table 4), three firms (Suzano, Kimberly-Clark, and Procter & Gamble) managed to transform from one success formula into another between periods while maintaining high degree of profitability (i.e., successful renewals). No firm successfully transformed twice. Next, we examine the processes resulting in these three successful renewal cases.

6. The proactive strategic renewals of Suzano, Kimberly-Clark, and Procter & Gamble

We followed the best practices in QCA studies by Greckhamer et al. (2018: 491) to return to our case data to complement fs/QCA findings and facilitate configurational theory building through case-level analyses. Similar processes have been followed in other studies, for example in Aversa et al. (2015) and Dwivedi et al. (2018).

We complement the fs/QCA results by conducting event structure analysis (ESA) for the three cases that have successfully implemented proactive renewal. ESA offers a systematic procedure to develop a logical structure of observed events and their dependencies, which is guided by the production system logic (Corsano and Heise, 1990; Griffin, 1993; Heise, 1989). We extracted the three firms' key events from newswires and abstracts on Paperbase International database hosted by Innventia. We then established when and why these events were related to one another, and how the current event might depend on other preceding events. This analysis process generated chronological lists of events and their logical relations for the periods of inquiry as illustrated in Appendices 4.1–4.3. Based on these analyses, we constructed higher-level descriptions of the causal sequences and interdependencies of observed events leading to the outcome of successful renewal in Suzano, Procter & Gamble, and Kimberly-Clark (see Figs. 2–4). Such analytical views uncover the proactive renewal process, showing how these firms coordinate their renewal themes to ensure complementary benefits in the new resource configurations and how different action categories influence each other over time to shape the success of the renewal.

Based on the ESA results, we elaborate in this section on (1) how Suzano succeeded in renewal at the turn of the 2000s, and (2) how Kimberly-Clark (K–C) and Procter & Gamble (P&G)^{4,5} renewed and maintained superior performance around 2010.

Although the successful renewals by the three firms took place in different periods, we observed a common pattern in the broad categories and development paths of the resource-configuring activities. To maintain superior performance, that is, to maximize profit margin, firms either maximize sales or minimize costs or do both. On the cost side, it appears that all three firms performed similar activities to control costs. However, there is only so much that they could save via operational-efficiency improvement, capacity adjustment, reorganization, and restructuring. Therefore, on the revenue side, what might guarantee their superior performance are how these firms prepared themselves for the next period's internally resource-creating activities, and how they coordinated resource configuration activities to achieve the complementary benefits. These activities are essential because they are mainly responsible for generating sales.

Suzano started preparing for new products in consumer packaging through joint ventures, mergers and acquisitions (M&As), and adjusting its production capacity in its mills in the 1990s. In the 2000s, the firm introduced consumer-packaging products and recycled paper. The sales of the new products were supported by the new sales strategy to strengthen business-to-business customer relationships through greater transparency. Since the paper and pulp industry, especially in cartonboard, is analogous to other heavy industries such as steel and aluminum, where the sales rely on a few solid customer relationships, it is not surprising that Suzano put effort into building strong and long-term customer relationships. More importantly, the net earnings were further boosted by a new management model, enhancing the firm's reputation with forestry certification, and divesting its non-core business in petrochemicals (see Fig. 2). Overall, the resource-creating projects in the 2000s by Suzano were supported by resource-leveraging and divestment activities. This combination means that the firm continued refining its current processes and capitalized on its current strengths while pursuing new ventures and products of differentiation. The firm did not hesitate to cut profitable as well as unprofitable units or markets if these were not serving the long-term goal.

In the cases of P&G and K–C, the introduction of new products in the 2000s was largely supported by in-house innovation centers. Subsequently, the sales engine was powered by overseas research centers because of market expansion to emerging markets and new marketing models (e.g., P&G moving to social media advertising). Both K–C and P&G boosted their internal resource-creating activities by collaborating and acquiring new resources from external parties through design (e.g., both firms working with designers to enhance product differentiation) and material-sourcing (e.g., K–C with Booshoot for tissue from bamboo fiber) partnerships (see Figs. 3 and 4). This combination worked well since working with new start-ups and research partners might bring in more diverse and better ideas. Acquisitions might also enable firms to become early movers, if not first movers.

In addition, the content of resource-configuring activities was relatively different in each period. In fact, the content of strategies has become more complex. First, during the 1990s, innovation activities mainly focused on new product development. At the turn of the 2000s, firms started to consider new sales and marketing strategies, new material sourcing, and a movement toward sustainability. Second, resource-leveraging activities cover not only new investments in capacity expansion but also operational efficiency through modernizing, the use of big data, implementation of advanced logistic and robotic tools. Third, in the new millennium more emphasis appeared to be put on other collaborative activities as alternative means to access external resources in addition to acquisition. The

⁴ For comparative purpose, we studied only P&G's pulp and paper-related business units (baby, feminine, and family care), whose net sales accounts for approximately 27% of the group's revenue (2015 P&G annual report).

⁵ Source for the time series: FAOSTAT/Forestry production and trade. Retrieved 10.01.2021 from <http://www.fao.org/faostat/en/#data/FO>.

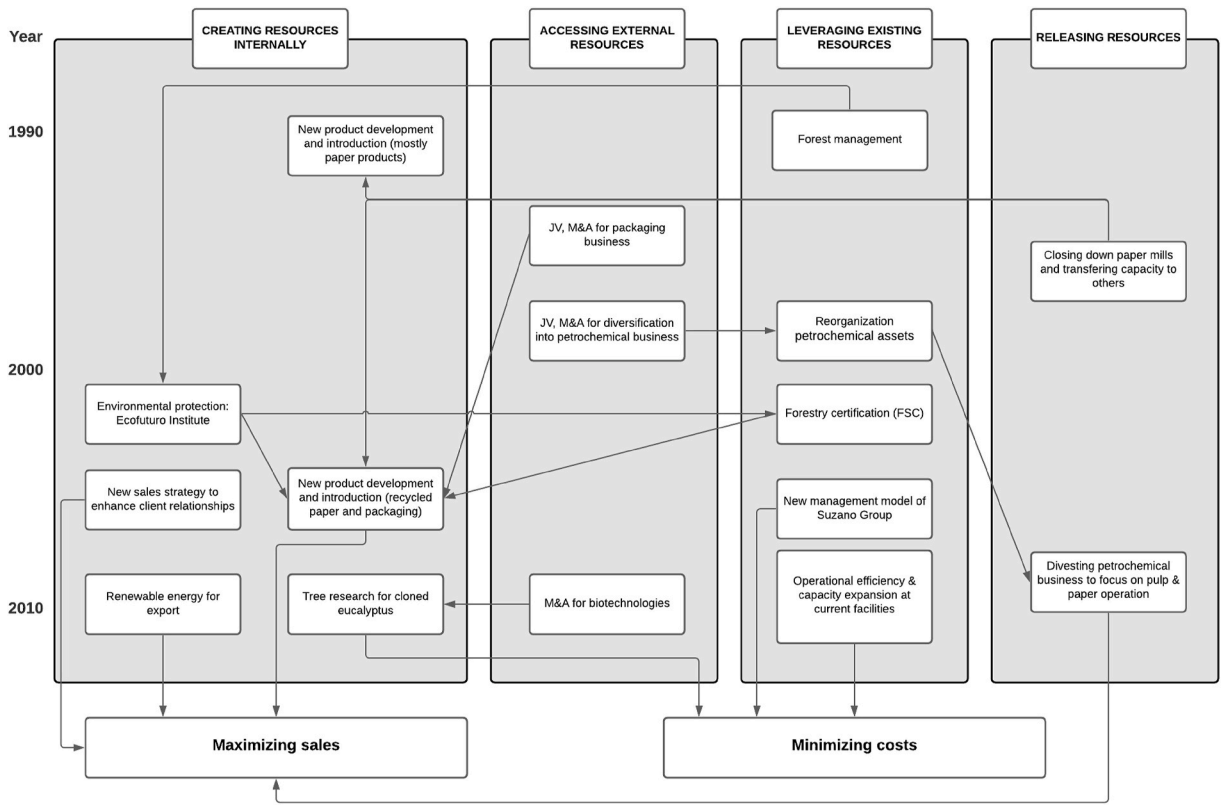


Fig. 2. Analytical view of the causal sequences in Suzano.

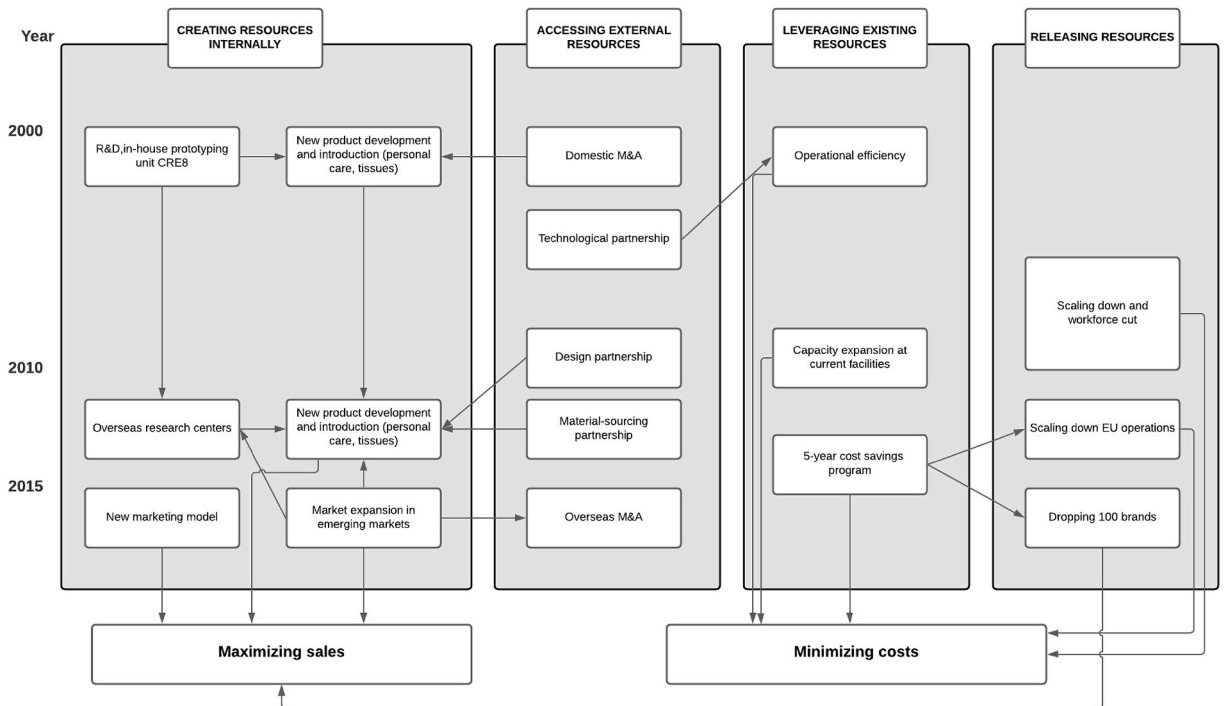


Fig. 3. Analytical view of the causal sequences in P&G.

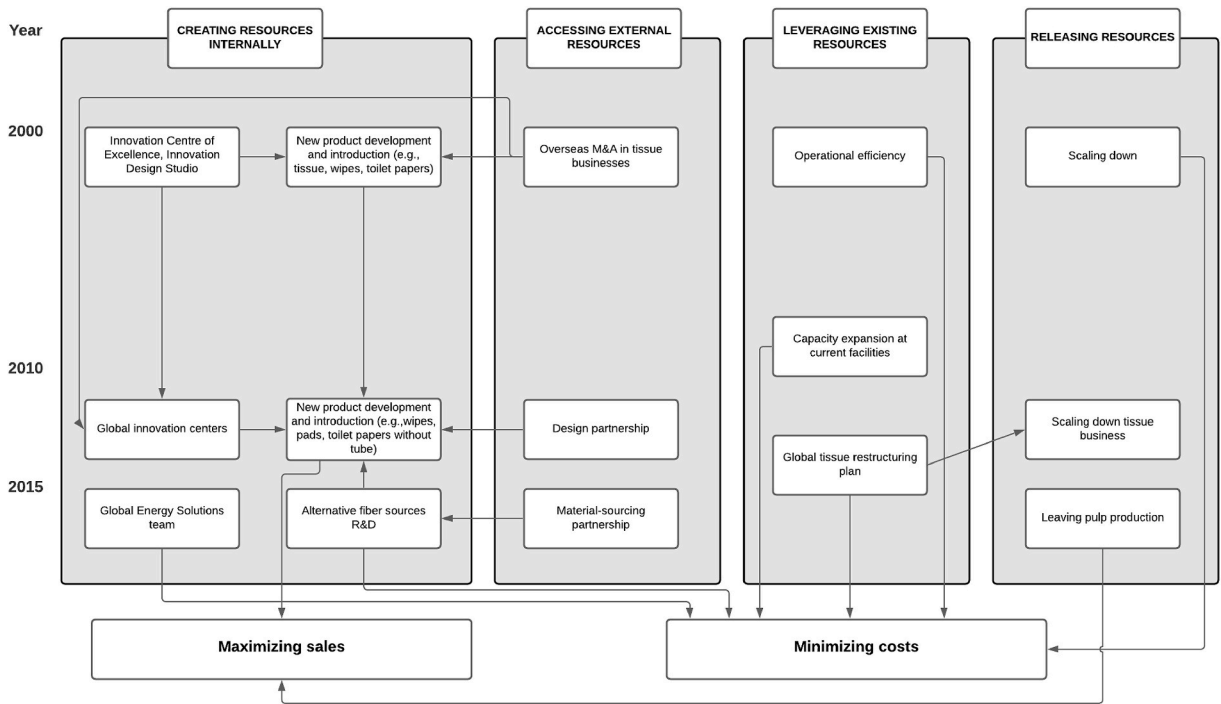


Fig. 4. Analytical view of the causal sequences in K-C.

types of collaboration activities were also temporally different. Collaboration projects were generally meant for new technologies during the 2000s, but after 2010 they were for product designs and new sources of raw materials.

Finally, our findings also indicate that successful transformers tend to pace their renewal by maintaining one strategic activity and adding new activities in the next period. Such incremental change allows the organizations time to adapt and recover. For instance, Suzano spread out reorganization and divestment activity evenly between periods 1 and 2. K-C and P&G, on the other hand, maintained a stable emphasis on internally creating new resources in periods 2 and 3, but increased collaboration in period 3. The gradualism of Suzano, K-C, and P&G was rendered possible by geographic expansion and related-product diversification, which muted the effects of the overall downturn in the economy.

7. Discussion and conclusion

Our findings add to the literature on strategic renewal by examining its prevalence and processes embedded in industry transformations. We have detected changes in success formulas, identified firms that proactively shift their strategies while maintaining superior performance, and gained an understanding of the evolutionary nature of their renewal paths. With a detailed analysis of the industry in question we elucidate the interplay of industry transformation and proactive renewal processes. Our empirical work provides a new level of thoroughness to the study of strategic renewal as we combine industry-level and firm-level analyses on a detailed data set of 208 firms in the global pulp and paper industry over a range of 27 years (1989–2015). This addresses the calls for more longitudinal research on renewal processes (Schmitt et al., 2018; Volberda et al., 2001b) embedded in industry transformations (Huygens et al., 2001; Kim and Pennings, 2009). Furthermore, our findings confirm the challenging nature of proactive strategic renewal, as only a few firms were able to shift from one success formula to another while sustaining superior performance, and no firm was able to accomplish that twice. Theoretically and methodologically, our research makes three contributions to the strategic renewal literature.

First, we find that success formulas are surprisingly simple. Complementarities between structural and strategic attributes underlie success rather than having something radically new. This finding relates to Teece (2019) argument on the necessity of congruence within an organization. For example, efforts to leverage and create resources internally produce superior performance when associated with resource-releasing activities. In such a high-performing configuration, the focal firm recalibrates its core resources and capabilities to boost the development and introduction of various product offerings. The complementarities from this success recipe are the result of enhancing operational efficiency of the existing processes, divesting non-core operations, and pursuing R&D in new material and products of differentiation. In another success formula, innovation tends to pay best when being complemented by accessing new resources from external parties. Through collaborative efforts and M&As, the acquiring firm is not only able to eliminate excess (or adjust) capacity but is also in a stronger position to invest in new technologies with the newly accessed resources. These new innovative projects enable the focal firm to respond to new customer demands through product diversification and differentiation (Garrette

et al., 2009; Poppo and Zenger, 1998). A common observation from these successful configurations is that related diversification appears to be an effective means of renewal. Superior-performing firms in our sample tend to add complexity to themselves by adding new products, expanding into new markets, and pursuing a set of diverse opportunities through a different combination of leveraging, creating, accessing, and divesting resources. This observation is in line with the recent re-emphasis on the link between diversification and renewal (Pettus et al., 2018). Indeed, such diversification strategy ensures these firms are ready for a broader range of products so that they can respond to new customer demand. Aligned with the emphasis on diversification, success appears to come from adding more rather than from removing. When adding more, it is important to design how different activities are connected.

This leads to our second contribution on renewal paths. Analysis of the high-to-high renewal cases demonstrates that these firms maintained many strategic activities while progressively adding new ones. Such an incremental process alleviates the risks of multiple simultaneous changes. This finding suggests that successful renewal is an evolving process rather than a discrete move underlining the importance of timing and pacing (cf. Ben-Menahem et al., 2013; Volberda et al., 2001a). In line with the findings of earlier studies on successful renewal cases (Agarwal and Helfat, 2009), successful firms released obsolete resources, invested in innovations and product development, enhanced efficiency in operations, and captured market share in growth businesses, such as household papers and packaging. Meanwhile, most firms in the industry continued investing in printing papers, even newsprint, and practically all firms relentlessly minimized costs. They eventually followed the example of the leading firms, which resulted in lower profitability for some, while many faced an existence-threatening decline before engaging in strategic renewal.

Considering the theoretical value of the different temporalities prevalent in the industry elucidates the broader meaning of proactive strategic renewal in industry transformations. Baden-Fuller and Teece (2019) argue that firms may choose to not renew in the face of an opportunity because there is uncertainty over profitability. Our results showcase the uncertainty in the profitability outcomes of the firms. Despite similarities in the pursued strategies, there is substantial variation in profitability outcomes and only a few firms were able to renew while maintaining superior profitability. The uncertainty may have discouraged some firms from pursuing said strategies, but also many who did ended up with sub-optimal outcomes. The classic works on strategic renewal leading to industry transformation (Baden-Fuller and Stopford, 1992; Spender, 1989) emphasize the role of pioneering firms changing the industry recipe that then diffuses to the rest of the industry. Our work adds a layer to this dynamic by distinguishing between firms that renew while maintaining superior profitability, firms that renew with inferior profitability outcomes, and firms that renew reactively or not at all. Sustainable industry transformation can only come from profitable companies and hence more research interest should be targeted at the rare cases of successful proactive renewal.

Third, we introduce the configurational approach to the study of strategic renewal, which allows us to examine how structural and strategic attributes combine in success formulas. Prior studies incorporating performance outcomes have relied on regression-related methods (e.g., Eggers and Kaplan, 2009; Kim and Pennings, 2009; Knott and Posen, 2009), which assume that the impacts of causal factors on the outcome variable are independently generated (Greckhamer et al., 2008). Furthermore, we employed event structure analysis (Corsano and Heise, 1990; Griffin, 1993; Heise, 1989) to shed light on the successful renewal processes. We demonstrated how further case-level analyses based on the fs/QCA findings and truth tables can provide insights into configurational transitions and thereby reveal how renewal processes evolve over time. Similar two-step strategies hold potential for further studies on strategic renewal and for other longitudinal phenomena in strategic management.

7.1. Limitations and avenues for future research

Choosing to study the largest firms in the global pulp and industry resulted in rich qualitative understanding on the simultaneous processes of industry transformation and strategic renewal. Subsequently, we have ignored other issues of importance. Forthcoming research, we propose, could address several specific limitations of this study.

First, for analytical reasons, we looked at industry transformation as a latent aggregate process rather than focusing on specific changes in the environment. There may be different kinds of environmental changes, some of which are more conducive to reactive renewals and some to proactive ones. Schmitt et al. (2018), for example, pose the question of whether organizations alternate between co-alignment and co-creation over time and what might trigger such shifts. These questions could be addressed with an application of fs/QCA to an industry-level data set with more numerous shifts in success recipes. This approach could make it possible to identify successive strategic renewals that alternate between proactive (high to high performance) and reactive (low to high performance) types.

Another limitation is the link between the firm and industry levels concerning especially the study of how the example of pioneering firms diffuses into the whole population of firms in an industry. Earlier studies have found both institutional (Zietsma and Lawrence, 2010) and market-based (e.g., Klepper and Thompson, 2006) explanations for why homogeneity tends to increase after some pioneering firms adopt novel business models and technologies. In addition, the numerous case studies on reactive firm-level strategic renewal show that the paths to a new normal may be highly idiosyncratic. However, we know considerably less on development paths and their drivers concerning entire populations. Future research could follow existing examples of multi-level systematic studies on renewal paths (e.g., Compagni et al., 2015) to analyze and create theories on how and why firms decide to follow or not follow pioneering firms and how such decisions result in industry-level renewal.

Finally, the fact that our sample comes from the pulp and paper industry might warrant caution for generalizing the research's findings to other industries. Conservatively speaking, our results may be more relevant to other raw material-centered or other heavy industries with the main binding mechanism being the fungibility of the material and the mechanical/chemical processes employed in production. Nevertheless, theoretically speaking, this sampling constraint might not represent a theoretical limitation because the resource (re)configuration modes (leveraging existing resources, creating resources internally, accessing resources externally, and

releasing resources) that we consider could represent how resources are generally configured in most firms. Perhaps, the only sample-specific findings might be the complementary effects, which may differ in other industries. Accordingly, future research may benefit from shedding lights on how complementarities between structural and strategic attributes are different in different industries.

7.2. Managerial implications

Our study presents several managerial implications. First, managers should be aware of the increasing complexity of strategic content, and the complementary effects between organizational attributes. Successful recipes can be simple, consisting of a few elements, but the key is how to execute the best combinations. Our findings suggest that efforts to both leverage current resources and internally create new ones produce superior performance when they are associated with organizational restructuring or resource-redistributing activities. The strategy of innovation and growth, however, tends to be of the most benefit in external collaboration and acquisition. In addition, managers should adopt multiple strategic approaches for innovation and collaboration, such as new material sourcing, sustainability-oriented culture as well as the use of big data, and the implementation of advanced logistic and robotic tools. Second, since renewal is an evolving process, not a discrete move, managers should consider phasing the firm's renewal effort by breaking it into short-term and long-term goals as well as by mobilizing resources to prepare for the next phase's internal resource-creating activities. The critical transitions between superior-performance configurations require consistency, not abrupt shifts.

8. Declarations of competing interest

None.

Author statement

Khoa Nguyen: Mirva Peltoniemi, Juha-Antti Lamberg, Conceptualization. Khoa Nguyen, Mirva Peltoniemi, Juha-Antti Lamberg, Data curation. Khoa Nguyen, Formal analysis. Khoa Nguyen, Funding acquisition. Khoa Nguyen, Juha-Antti Lamberg, Mirva Peltoniemi, Investigation. Khoa Nguyen, Mirva Peltoniemi, Juha-Antti Lamberg, Methodology, Khoa Nguyen, Project administration. Khoa Nguyen, Resources. Khoa Nguyen, Software. Mirva Peltoniemi, Khoa Nguyen, Supervision. Khoa Nguyen, Mirva Peltoniemi, Validation. Khoa Nguyen, Mirva Peltoniemi, Visualization. Lead author in method section, analysis chapters, supplementary files. Otherwise participated collaborative writing and editing., Participated collaborative writing and editing., Participated collaborative writing and editing., Roles/Writing - original draft. Lead author in method section, analysis chapters, supplementary files. Otherwise participated collaborative writing and editing., Lead author in Introduction and literature review. Otherwise participated collaborative writing and editing., Lead author in Industry characteristic chapter. Otherwise participated collaborative writing and editing., Writing - review & editing.

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Appendix A. Supplementary data

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