



HAL
open science

Drivers and Pathways of NPD Success in the Marketing-External Design Relationship

Aurélie Hemonnet-Goujot, Delphine Manceau, Celine Abecassis-Moedas

► **To cite this version:**

Aurélie Hemonnet-Goujot, Delphine Manceau, Celine Abecassis-Moedas. Drivers and Pathways of NPD Success in the Marketing-External Design Relationship. *Journal of Product Innovation Management*, 2019, 36 (2), pp.196-223. 10.1111/jpim.12472 . hal-01883760

HAL Id: hal-01883760

<https://amu.hal.science/hal-01883760>

Submitted on 11 Mar 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Drivers and Pathways of NPD Success in the Marketing–External Design Relationship*

Aurélie HEMONNET-GOUJOT**

Aix Marseille Université, CERGAM, IAE Aix

13540, Puyricard, Aix-en-Provence, France

Phone number: +33 6 60 22 54 82

aurelie.hemonnet@iae-aix.com

Delphine MANCEAU

NEOMA Business School

9 rue d'Athènes 75009 Paris, France

Phone number: +33 6 98 58 22 35

delphine.manceau@neoma-bs.fr

Céline ABECASSIS-MOEDAS

Universidade Católica Portuguesa

Palma de Cima, 1649-023, Lisbon, Portugal

Phone number: +351 965 848 445

ceabec@ucp.pt

* The authors thank the editor Gloria Barczak, the Associate Editor and three anonymous reviewers for their comments and helpful advice.

** Corresponding author

Article published in *Journal of Product Innovation Management*, 2019, vol. 36, no 2, p. 196-223, <https://onlinelibrary.wiley.com/doi/abs/10.1111/jpim.12472>

Drivers and Pathways of NPD Success in the Marketing-External Design Relationship

Abstract

Marketing often cooperates with external design in the new product development (NPD) process. While this relationship is crucial for NPD success and is a typical case of interorganizational collaboration between a business-oriented function (marketing) and a creative partner (external design), a comprehensive understanding of this relationship remains lacking. As the NPD field evolves to open systems that have changed concepts like functional integration into interorganizational integration, this study contributes to NPD literature by developing an integrated conceptual framework leading to a model of drivers and pathways of NPD success in the marketing-external design relationship. Building on the literature on NPD, design management and relationship marketing, and on nine dyadic case studies from the luxury fragrance and cosmetics industry, a content analysis was conducted, enriched by a crisp-set qualitative comparative analysis (QCA). This research confirms several NPD success drivers suggested in the literature and reveals three new drivers: source of design expertise, designer brand commitment, and number of NPD stages involving designer. The first new driver (source of design expertise) impacts the relationship process, which then impacts NPD success, while the other two drivers (designer brand commitment and number of NPD stages involving designer) directly influence NPD success. The article also identifies the pathways of NPD success, showing that contact authority and designer brand commitment are necessary conditions for NPD success, especially when combined with a high number of NPD stages involving designer or a previous relationship. The results also indicate that pathways of NPD success may differ according to the source of design expertise.

From a managerial perspective, this study provides recommendations to managers to select the right design partner and choose from a range of drivers and pathways to devise more effective ways to work with external designers, thereby leading to NPD success.

Practitioner Points

- When resorting to external design, branding, a major asset for marketing, has to be carefully managed, and designer brand commitment is a key element that the marketing department should follow closely.
- When resorting to external design, marketing departments should consider two necessary conditions for NPD success: involving their key decision-makers with the designer (contact authority) and encouraging designer brand commitment.
- Whenever these two necessary conditions are met, the third condition favoring NPD success is either to involve external design in many NPD stages or to choose a partner with whom the brand has previously worked.
- Marketing should adapt the relationship process to the source of external design expertise to promote NPD success. Particularly when resorting to *star-based* external designers, marketers should create mechanisms to ensure consistency with brand identity.

Introduction

Many companies outsource design in the NPD process (Abecassis-Moedas et al., 2012, Czarnitzki and Thorwarth, 2012, Perks, Cooper and Jones, 2005). Heineken worked with Ora Ito to design its new aluminum beer bottle, Kenzo and Nina Ricci called on Karim Rashid and Philippe Starck, respectively, to design new fragrance bottles, and Tide worked with the Studio Davis agency for its new Excel gel. In major European countries such as France and the United Kingdom, up to 50% of companies' design budgets are dedicated to external design (French Ministry of Economy, 2010). In such cases, marketing is often the company's

key contact with external designers (Chiva and Alegre, 2007, MacPherson and Vanchan, 2009), including both design agencies and individual designers who collaborate on a project-by-project basisⁱ. Yet, a poor relationship with external design can lead to commercial failure (Luchs, Swan and Creusen, 2016, Roy and Potter, 1993).

Although marketing-design integration in the NPD process within companies is an important field of investigation (Luchs et al., 2016, Melewar, Dennis and Kent, 2014) and appears among the 2016-18 Marketing Science Institute's research prioritiesⁱⁱ, prior research has mainly analyzed the relationship between marketing and internal design (Beverland, 2005, Beverland, Micheli and Farrelly, 2016, Zhang, Hu and Kotabe, 2011). The literature dedicated to the marketing-external design relationship remains scarce (Borja de Mozota, 2003, Bruce and Cooper, 1997, Bruce and Daly, 2007). As resorting to external design implies an increase in complexity and uncertainty (Bruce and Morris, 1994, Luchs et al., 2016, Von Stamm, 2008), the marketing-external design relationship is expected to differ from the internal design-marketing one by requiring specific relationship patterns in the NPD process. Yet, while marketing-internal design relationship benefits from specific theoretical frameworks such as sensemaking (Beverland et al., 2016) or inter-functional collaboration in NPD (Zhang et al., 2011), the literature on the marketing-external design relationship is practice-oriented and does not rely on a clearly defined conceptual framework. It provides managerial guidelines for the external design selection process, brief or output evaluations. Conditions of success in the relationship with external designers and especially the influence of practices and types of designers are however still unclear (Ravasi and Stigliani, 2012).

This article thus aims to fill this gap in the literature by addressing the following research question: What are the drivers and pathways of NPD success in the relationship between marketing and external design?

Building on the literature on NPD, design management and relationship marketing and on a multiple dyadic case study from the luxury fragrance and cosmetics industry, which combines the richness of nine case studies with the benefits of the dyadic perspective, a case content analysis was conducted, enriched by a crisp-set qualitative comparative analysis (QCA). All case studies were in the same industry to identify success drivers related to relationship dynamics and partner characteristics rather than those related to industry differences.

From a theoretical point of view, this article contributes to the NPD literature in three ways. First, former research underlined how much the NPD field evolves to open systems that have changed concepts like functional integration to more interorganizational integration, thus requiring new theoretical approaches to better capture the nature of new product development (NPD) success drivers (Evanschitzky et al., 2012). By investigating more broadly NPD success drivers through the merging of three streams of research, this article addresses this need and extends the NPD literature by developing an integrated conceptual framework of NPD success drivers adapted to interorganizational collaboration between a business-oriented function (marketing) and a creative partner (external design). Second, this study identifies new success drivers such as source of design expertise, designer brand commitment, and number of NPD stages involving designer. Third, this article argues that NPD success is linked to specific combinations of drivers, therefore providing a model of pathways of NPD success in the marketing-external design relationship.

This article is organized as follows. The literature review presents the complexity of the marketing-external design relationship in the NPD process. Potential drivers of NPD success are suggested. The research methodology based on nine dyadic case studies enriched by a QCA is then presented. After presenting the results, the study implications and limitations are discussed.

Theoretical Framework

While design is a growing body of academic research in the field of management, a common definition remains lacking (Luchs et al., 2016). Design is defined as a process or set of activities that determines properties of products (Ravasi and Stigliani, 2012), as the output of the process (product) (Homburg, Schwemmler and Kuehnl, 2015) or as a strategic tool (Borja de Mozota, 2006). This article is built on the distinction between two aspects of design as defined by Luchs and Swan (2011, p. 338): (1) the product design process, defined as “the set of strategic and tactical activities, from idea generation to commercialization, used to create a product design,” and (2) its output, that is, the product design, defined as “a set of constitutive elements of a product that consumers perceive and organize as a multidimensional construct comprising the three dimensions of aesthetics, functionality and symbolism” (Homburg et al., 2015, p. 44).

Similarly, marketing is a multi-faceted construct that refers to marketing departments (Verhoef and Leeflang, 2009), marketing actions, or marketing assets (brand and consumer equity) (Edeling and Fischer, 2016). This article focuses on companies with dedicated marketing departments in charge of developing knowledge about customer needs to assess market potential and initiate NPD projects (Drechsler, Natter and Leeflang, 2013).

Influence of the Marketing-Design Relationship on NPD Success

Because of complementary features, the marketing-design relationship is crucial for NPD success (Beverland et al., 2016). This relationship enables (1) better knowledge of customers (Moorman and Rust, 1999, Verhoef and Leeflang, 2009), since designers help marketers to unravel latent needs and collect insights (Veryzer and Borja de Mozota, 2005); (2) differentiation from competition by providing higher consumer value and brand affection (Kumar, Townsend and Vorhies, 2015) due to products that generate meaning, emotion and

delight (Chitturi, Raghunathan and Mahajan, 2008, Ravasi and Lojacono, 2005, Verganti, 2009); and (3) assurance of brand renewal (Beverland, 2005) due to designers' ability to reconfigure brands' symbols and signs (Verganti, 2003).

Despite these synergistic features, the actors in the marketing-design relationship must overcome profound differences (Beverland, 2005, Beverland et al., 2016, Bruce and Daly, 2007). First, marketing and design do not evaluate performance similarly, as marketing seeks commercial success and brand consistency (Beverland, 2005), while design values originality and awards (Ordanini, Rubera and Sala, 2008). Second, they have a different sense of time. Marketing praises short lead times, while design approach is based on exploration (Borja de Mozota, 2003). This difference results in discrepancies in managing uncertainty. While marketing is reluctant to take risks and extensively relies on reporting and quantified results (Borja de Mozota, 2003), design, as a creative activity, is intrinsically linked to uncertainty and risk-taking (Cooper and Press, 1995, Ordanini et al., 2008). Third, while marketers value control (Borja de Mozota, 2003), designers aspire to autonomy and freedom (Chaston, 2008). Due to designers' creativity, often correlated with their outgoing personalities, it is difficult to set up a classic management mode (Caves, 2000).

To reduce inherent tensions between these two entities while creating positive synergies in the NPD process, previous research identified several drivers: leadership support, intergenerational teams, simultaneous control-autonomy coupling (Beverland, 2005), high integration between marketing and design in each NPD stage (Zhang et al., 2011) and adoption of a common framework through sensemaking practices (Beverland et al., 2016). Yet, despite their major contributions to the understanding of the marketing-design relationship, these articles focused on inter-functional collaboration between departments of the same company (e.g., marketing and internal design) without analyzing the specificities of the relationship between marketing and external design.

Specificities of External Design Management: Innovativeness, Expertise and Complexity

Resorting to external design in the NPD process tends to generate more radical innovation than the use of in-house or mixed approaches (Abecassis-Moedas et al., 2012, Perks et al., 2005, Von Stamm, 2008). Firms benefit from a new perspective, additional knowledge and designers' reputation (Abecassis-Moedas and Rodrigues Pereira, 2016). Residing outside the boundaries of the firm, external designers are less hampered by company politics and internal rigidities and can bring fresh ideas (Dell'Era and Verganti, 2010, Ravasi and Lojacono, 2005). Working with clients from diverse industries, they also possess rare innovative competencies due to their knowledge broker position (Hargadon and Sutton, 1997). This enables them to exploit a broad array of informational cues and to build their expertise (Boudreau et al., 2016).

Experts are individuals who are perceived to be comparatively outstanding in a particular domain because they possess greater knowledge, skills and experience than non-experts (Ericsson and Smith, 1991). This leads to the distinction between novices and masters (Cross, 2004, Lawson and Dorst, 2013, Zhang, 2015). While novices focus on product functionality and favor mental leaps, expert designers value product symbols and analogy making (Chai et al., 2015). While novices are problem-oriented through a problem definition focus and are more reactive, experts are solution-oriented through a problem scoping approach and an explicit problem-decomposing strategy and are more proactive (Cross, 2004, Ho, 2001, Ozkan and Dogan, 2013, Seitamaa-Hakkarainen and Hakkarainen, 2001). The extant literature in design is mostly limited to expert/novice differences in problem-solving approaches (Chai et al., 2015). Yet, there is a diversity of expertise (Ericsson and Smith, 1991), especially in design, due to the existence of several modes of design built on different design practices and different uses of knowledge in the creation approach taken by designers (Lawson and Dorst, 2013). This diversity calls for a distinction between the level of expertise

(novice to master) and the source of expertise of external designers, characterized by a complex collection of skills (Lawson and Dorst, 2013), including their inherent key assets (Abecassis-Moedas et al., 2012). Abecassis-Moedas et al. (2012) distinguish three types of external designers: *customer-based* external designers are characterized by their proximity to customers and their organizational flexibility, *process-based* external designers rely on specific creative processes and organizational capabilities, and *star-based* external designers rely on highly creative and talented individuals who benefit from an international reputation. Sources of design expertise are diverse, and strategies that firms use to manage them are still missing in the literature (Ravasi and Stigliani, 2012).

Resorting to external design also leads to complexity and risk. Primary obstacles are difficulties selecting and managing external design, misunderstandings of company issues and the potential loss of secrecy (Von Stamm, 2008). Moreover, control of the relationship with external designers is crucial to improving new product sales and profitability (Roy and Potter, 1993, Von Stamm, 2008), and specific relationship patterns are required to consider appropriate solutions between short-term versus long-term relationships and close versus distant relationships (Bruce and Morris, 1994). While design knowledge and design management in inter-firm alliances can generate a sustainable and distinctive competence (Bruce and Jevnaker, 1998), design is a complex process requiring thinking and working across different perspectives to produce an outcome (Lawson and Dorst, 2013). Thus, a “modus operandi” must be established for the relationship to be effective.

Initial NPD Success Drivers Suggested by the Literature

Research on NPD has used various indicators to evaluate success, and the literature is not consistent on the topic. Articles have addressed (1) new product outcomes with variables such as new product success (Troy, Hirunyawipada and Paswan, 2008) and new product performance (Brockman et al., 2010), (2) new product development outcomes with variables

such as NPD success (Coviello and Joseph, 2012, Griffin and Page, 1996, Sivadas and Dwyer, 2000) and NPD performance (Abecassis-Moedas and Ben Mahmoud-Jouini, 2008, Montoya-Weiss and Calantone, 1994, Song, Montoya-Weiss and Schmidt, 1997), or (3) “performance” as a general variable (Brown and Eisenhardt, 1995). As this research aims to identify the drivers of NPD success in the marketing-external design relationship, the second option, which focuses on NPD outcomes and success, was chosen.

To our knowledge, no previous article has focused on identifying the drivers and pathways that affect NPD success in the marketing-external design relationship, and a model is still needed. Since the relationship between marketing and external design is a business-to-business relationship – marketing is the buyer of the service sold by external design – some drivers can be inferred from the relationship marketing literature. A first stream of relationship research based on the social exchange theory (Morgan and Hunt, 1994) considers the best-performing exchanges to be those that abide by relational norms. Factors such as trust and commitment are important drivers of the partnership dyad (Moorman, Deshpande and Zaltman, 1993). Specifically, the holistic construct of relationship quality captures unique aspects of the relationship, including trust and commitment, an enduring desire to maintain a valued relationship, and reciprocity norms and exchange efficiency (Palmatier, 2008) (see Appendix A for construct definitions). Relationship quality is defined as an “overall assessment of the strength of a relationship, conceptualized as a composite or multidimensional construct capturing the different but related facets of a relationship” (Palmatier et al., 2006, p. 138). Relationship quality is influenced by previous relationship duration and contact authority (Palmatier, 2008, Palmatier et al., 2006). Contact authority captures the extent to which the seller (in our case, the external design) deals with the key decision-makers of the customer firm (in our case, the marketing department) to have access to valuable knowledge about the customer and its decision parameters and thus improve the

decision-making capabilities (Palmatier, 2008). Recently, the dynamic relationship marketing theory merged this first stream of research with a second stream focusing on the influence of the relationship's age on performance. This theory reveals the importance of a previous relationship duration for commitment, and especially for commitment velocity, which refers to the rate and direction of change in commitment (Palmatier et al., 2013).

Relationship quality has been shown to influence relationship effectiveness, measured as sales, word-of-mouth and customer loyalty (Palmatier, 2008, Palmatier et al., 2006). Some articles suggest that relationship quality, measured by trust, reciprocity norms and exchange efficiency, favors NPD success (Obal, Kannan-Narasimhan and Ko, 2016, Rindfleisch and Moorman, 2001, Sivadas and Dwyer, 2000), yet the link between commitment, a sub-dimension of relationship quality, and NPD success remains unclear, especially in the relationships that are not continuous in nature (Badrinarayanan and Arnett, 2008, Bstieler and Hemmert, 2015, Sjoerdsma and van Weele, 2015, Walter, 2003).

As our literature review shows, external designers, as creative partners, require specific relationship patterns. Compared to the previous literature in relationship marketing (Rindfleisch and Moorman, 2001, Sivadas and Dwyer, 2000), the nature of the seller is different, since it belongs to the creative industries that highly value the notion of talents who act according only to their inspiration (Caves, 2000). The nature of the relationship is also complex because it does not concern the transfer of tangible goods with objective economic value as in the classic buyer–seller relationship; rather, it concerns designing a new product starting from intangible ideas. This involves strong uncertainty, since the design's economic value is revealed only after market introduction (Caves, 2000). A single theoretical lens based on relationship marketing may thus be inappropriate.

References to the design management and NPD literature also appear to be relevant to identify other potential drivers that affect NPD success in the marketing-external design

relationship. The design literature underlines the importance of respect, a common understanding of the final objectives, clear role definitions (Cooper and Press, 1995), trust (Bruce and Jevnaker, 1998) and frequent discussions between partners (Von Stamm, 2008). More specific drivers are also suggested, such as nurturing a long-term relationship (Borja de Mozota, 2003), providing a dedicated area for freedom and independence (Chaston, 2008, Ravasi and Lojacono, 2005), maintaining top management support and favoring knowledge transfer (Verganti, 2003). Other drivers of NPD success are also suggested by seminal works in the NPD literature, especially in the area of inter-functional integration (Montoya-Weiss and Calantone, 1994, Song et al., 1997). Early product definition, existence of a formal NPD process and top management support favor success (Montoya-Weiss and Calantone, 1994) as well as organizational drivers such as a high degree of interpersonal interaction, intense communication (Song et al., 1997) and transfer mechanisms (Bailetti and Litva, 1995).

Although they provide additional insights into the phenomenon of interest, the potential drivers suggested by the design management and NPD literature are neither exhaustive nor integrated into a model. Our topic of interest leads us to combine the results of these three streams of research (relationship marketing, design management and NPD) to suggest a preliminary comprehensive view of NPD success drivers and to distinguish between two categories of drivers: (1) relationship attributes, which are characterized by a previous relationship and the existence of contact authority, and (2) the relationship process (Table 1).

Insert Table 1

Pratt (2008) guidelines were then followed to keep distance from the phenomenon and generate new insights to build a model of drivers and pathways of NPD success in the marketing-external design relationship.

Research Methodology

Rationale, Setting and Sampling Approach

Because this research focuses on the scarcely-explored phenomenon of the marketing-external design relationship in the NPD process, the multiple case study methodology appears particularly appropriate to gain a precise understanding of this relationship while generating new insights (Eisenhardt, 1989, Yin, 2013). Qualitative research designs are also well suited for analyzing interactive processes (Langley, 1999). For each case, semi-structured interviews and archival documents were combined, forming a dyadic perspective including both marketing and external design viewpoints to provide a sound understanding of this relationship. This method treats the dyadic cases as a series of experiments that confirm or invalidate emerging conceptual insights (Eisenhardt and Graebner, 2007). It strengthens the robustness of the study and draws out contextual differences (Yin, 2013). Furthermore, in the current study, the internal validity of the findings is strengthened by a QCA.

To reduce heterogeneity and more easily draw comparisons, all cases were in the same industry: the luxury fragrance and cosmetics industry. It is fiercely competitive and characterized by several hundred product launches per year and increasingly crowded shelves. This context is characterized by frequent marketing-external design relationships in which design plays a critical role in new product differentiation and success. As noted by the CEO of ID Perfumes, quoted in the *Wall Street Journal* (Holmes, 2012), “Bottle design becomes increasingly important – certainly as important as the actual fragrance.” The importance of design is also emphasized by the VP Creative Director of Elisabeth Arden: “Packaging holds the whole business. At launch, packaging is 70% of it. If your packaging doesn’t work, you are in trouble” (Matusow, 2012). In such activities, an effective relationship between marketing and external design is crucial. Marketing departments are

usually responsible for coordinating the NPD process and often select external designers to develop bottles for fragrances and jars for cosmetics.

To select the cases, a retrospective approach was adopted, and theoretical rather than statistical sampling was followed (Eisenhardt, 1989). The ranking of the top 100 fragrance and cosmetics brands in the French luxury market, one of the leading markets in this industry worldwide, served as an initial reference. First, cases addressing the launch of a new product brand (ex. Chanel Gabrielle) that entailed the creation of a new product design, such as a fragrance bottle, were identified. Second, contact was made with marketers and external designers who were involved throughout the NPD process. Their willingness to participate and to provide access to information was confirmed. The marketers were senior managers in charge of the relationship with external designers and had an average of nine years of experience in multinational companies. The external designers were project leaders, and most were owners of their design agency; these agencies were generally SMEs. Data collection ended when theoretical model saturation was reached (nine dyadic cases). This number of cases follows Eisenhardt's approach (1989, p.545), which suggests conducting between four and ten case studies to obtain sufficient data while managing complexity. Table 2 contains details of the nine NPD cases and the informants' profiles.

Insert Table 2

Data Collection

The data were collected through 18 face-to-face semi-structured interviews. Each member of the dyad was interviewed separately. Several measures were taken to mitigate potential retrospective biases. The interview guidelines required informants to describe the project, the context and the objectives. They were asked to relate chronologies of events; to describe how and when external design was integrated into the NPD process; and to narrate precisely the relationship at each stage to identify the respective roles, precise actions and interaction

processes. To encourage the accuracy of informants' accounts, confidentiality was guaranteed. Each interview lasted between 45 and 90 minutes and was recorded and transcribed. Internal validity of the findings was increased through triangulation with secondary data from different sources (panel data for commercial success; website analysis and trade press articles to gain additional insight on brands, external designers and NPD projects; and internal sources such as marketing files or designers' drawings and presentations).

To evaluate NPD success, a subjective assessment was made based on the managers' perceptions, following methodologies used in previous research (Coviello and Joseph, 2012, Sivadas and Dwyer, 2000, Troy et al., 2008). Building on criteria used in the NPD literature (Abecassis-Moedas and Ben Mahmoud-Jouini, 2008, Montoya-Weiss and Calantone, 1994, Song et al., 1997) and on the typology of success indicators used by Griffin and Page (1996), following criteria were assessed: *customer measures* through market share and fit with the consumer needs; *financial measures* through profitability; and *program measures* through team satisfaction with the outcome measured by the intention to conduct a new NPD process with the same external designers ("expectation of relationship continuity").

Data Analysis Process

To identify NPD success drivers, a methodology similar to that of Coviello and Joseph (2012) was adopted. Cases were polarized according to managerial perceptions of NPD success and failure, leading to the identification of two polar sets (Table 3). Success cases were defined as cases that met three or four of the success criteria (four cases). Failure cases met none or only one of these four criteria (five cases).

Insert Table 3

Although interviews were conducted with individuals, the unit of analysis was the organizational dyad (marketing and external design) rather than the individuals. To understand the marketing-external design relationship during the NPD process, the relationship was first analyzed using the sequence of events approach (Langley, 1999). Based on Cooper's stage-gate approach (2008) — idea generation, concept generation, early design, late design and launch — a precise chronology of events was built for each case. The data were analyzed, sorted and codified using the NVivo10 qualitative software program. An initial analysis was based on deductive thematic codes derived from the relationship marketing, design management and NPD literature, such as “contact authority,” “trust” and “previous relationship.” Then, following Miles and Huberman's approach (1994), a second round of analysis refined the coding and included, when necessary, new codes extracted from the empirical material (such as “designer brand commitment”).

After conducting an in-depth within-case analysis to obtain a sound understanding of each case under study, a cross-case comparison technique was adopted (Eisenhardt, 1989). This process helped to identify specific drivers and pathways for each category (NPD success and failure). A model emerged from the comparison of NPD successes and failures (Yin, 2013). The results were then further enriched by a QCA, which was used to provide cross-case analysis with logical rigor (Berg-Schlusser et al., 2009) and to analyze the combinations of various NPD success drivers. QCA aims to identify all the necessary and sufficient conditions that lead to a specific outcome (Ragin, 2008)ⁱⁱⁱ. This analysis helps to identify causal complexity between several conditions causally related to an outcome while acknowledging the possibility that multiple paths may lead to that outcome (Berg-Schlusser et al., 2009). Specialized software fsQCA 2.5 was used to test and identify which NPD success drivers in the marketing-external design relationship identified through the nine dyadic case study analysis were necessary and/or sufficient conditions for NPD success. This QCA also helped

to refine the causality analysis in terms of the combinations of variables. To reduce the complexity of the data sets, a logical minimization was performed based on the construction of a truth table (Appendix B) (Woodside, 2013).

For the remainder of this article, the following standard designations are used: the successful cases are referred to as S (S1, S2, S3 and S4) and the failure cases as F (F1, F2, F3, F4 and F5). The distinction between marketers and external designers is presented as follows: S_{1M} for marketers and S_{1D} for external designers.

Results

The data analysis aided in the understanding of the complex marketing-external design relationship through confirmation of the drivers suggested in the literature, the identification of new drivers and the disclosure of pathways leading to NPD success. The findings are grouped into two categories: (1) identification of new drivers through (a) the influence of *relationship attributes* on the relationship process and (b) the influence of the *relationship process* on NPD success and (2) identification of pathways of NPD success (Figure 1). Following Pratt (2008), the most compelling data, also called “power quotes”, are presented in the body of the article. “Proof quotes” that are used to show the prevalence of a point are presented in tables.

Insert Figure 1

Influence of Relationship Attributes on the Relationship Process

Each relationship began with the same process: selection of the external designer, formal agreement and a briefing session. None of the external designers held long-term contracts with the marketing departments. Each project was a one-shot contract, even though some dyads had previously worked together on other projects. External designers were paid for the delivery of a precise project. None of them received a share in the product’s future success

(such as royalties on sales). The nine relationships lasted from one to two years. The analysis of the relationship attributes confirmed that a previous relationship and contact authority influence relationship quality, as suggested in the literature, but also influence the external designers' commitment to brand identity. The analysis also brought to light another key driver that influences the relationship process: the source of external designers' expertise (further named "source of design expertise").

Influence of Previous Relationship and Contact Authority on Relationship Quality. In the success cases, three dyads (out of four) had a previous relationship [S2, S3, and S4], while in the failure cases, only two dyads (out of five) had such a relationship [F2 and F5]. Data analysis suggests that a previous relationship favored trust and improved fluidity of the marketing-external design working process, influencing relationship quality. Thus, the results confirm the positive link between a previous relationship and relationship quality. Our findings also confirm the theoretical framework conclusion that contact authority strengthens relationship quality (Table 4).

Insert Table 4

Influence of Previous Relationship and Contact Authority on Designer Brand Commitment. In three success cases [S2, S3, and S4], the external designers had a long-term relationship with the marketing departments, as they had worked together on other NPD projects. External designers thus had deep brand knowledge regarding brand identity and values. They were better able to meet marketing's expectations, suggesting designs that echoed brand values. This analysis revealed the influence of a previous relationship on a new driver of relationship quality: designer brand commitment, characterized by designers' ability to go the extra mile to build on brand values, roots and positioning to innovate (see Appendix A). This brand commitment was essential to creating a product design that fit the brand identity while increasing product differentiation.

We chose to work with this designer because she knows the brand by heart; she knows its heritage perfectly... Consumers liked this luxurious, artistic, gold product (S4_M). This product is inspired by the brand's heritage. It gives prestige and value to the brand (S4_D).

They [designers] already knew the brand very well since they had worked previously on project X... This packaging was unique and immediately attributed to brand Y. According to consumers, "no other brand could have done it" (S3_M).

We had already worked for this prestigious house (...) We tried to propose a story that was legitimate for this brand (S3_D).

In contrast, in the failure cases [F2 and F5], when a previous relationship existed, it was shorter and focused on smaller-scale projects (graphic design for F5 or limited edition for F2), limiting the transmission of brand values and identity.

The brief was very factual: "here is the target, here is the positioning," with a succinct presentation of the brand history (F5_D).

These findings also revealed the positive influence of contact authority on the designer brand commitment:

It is very comfortable for an agency to work directly with the CEO... When we have the opportunity to work directly with the decision-maker who agrees or disagrees with our proposals, as was the case for this brand, he told us precisely his vision for the project and that created alchemy (S2_D).

When the VP said, "bottle cap must be shiny", we were so involved in the project, and we told ourselves "it is not a good direction"... Then, we made the mock up, and we recognized the fit with the other products of the brand, telling ourselves, "It's not so stupid"(S3_D).

Influence of the Source of Design Expertise on Designer Brand Commitment. When analyzing the relationship attributes, the data suggested that the source of design expertise – that is, the specific resources and skills of external designers – was a criterion that marketing used in the selection phase (Table 5).

Insert Table 5

Source of design expertise was crucial in the selection phase but also appeared to have a major influence on the relationship process^{iv}. *Customer-based* external designers [S3, S4, F1, F4, and F5] adapted their proposals to their clients' needs and requests. Yet, this attitude resulted in weaker brand commitment, especially in the absence of a previous relationship

[F1, F4, and F5], because the designers were unwilling to challenge the marketers' interpretation of brand identity:

I had a very precise vision of what I wanted even though I don't know how to draw. I transmitted the brand values, vision and a clear concept (F1_M).

You can always question the brief, but it was not our objective (F1_D).

Process-based external designers [S1 and S2] adopted specific methods to immerse themselves in the brand's values:

We wanted to position the brand in high-end perfumes while being consistent with the jewelry universe. Then, the design agency was left free to work, and it submitted different creative proposals (S2_M).

In-depth work on the brand is fundamental. The first thing to do is to understand it. We analyzed its DNA, its main characteristics, to build the creative strategy. From these characteristics, we identified stylistic attributes that were then translated into bottle shapes... We truly believe in the history of brands, and we absolutely do not want to distort or influence it with the style of our designer (S2_D).

Finally, *star-based* external designers' activities [F2 and F3] were initially based on object creations (such as furniture) sold under their own signature. They possessed strong creative skills and did not seek to adopt existing brand values or to develop brand values.

He creates from scratch. He likes innovative things that never existed before. He did not adopt a marketing approach (...) He just wants to have fun and create a new shape. (...) He does not care if it fits your brand and your target (F2_M).

I know nothing about the perfume world. What I am doing is offering a new way of looking at an object. I do not invent a typology that already exists; I just offer a different view (...) It is a different object, that's all (F2_D).

Influence of the Source of Design Expertise on the Number of NPD Stages Involving Designer. The analysis revealed that the number of NPD stages involving designer was influenced by designers' source of expertise. *Customer-based* external designers were not involved in the concept generation stage but only later, in the early design stage, and were given very precise directions. For example, in F1, the concept was clearly defined, and the marketer even sent designers an amber-colored vase to show the specific shade desired for the packaging. On the other hand, *process-based* and *star-based* external designers were involved in many different stages (Table 6).

Insert Table 6

Process-based external designers were integrated into many stages, although they were not officially mandated for this. They took the lead in the early stages of the NPD process, especially in the concept stage, during which they did not hesitate to challenge the initial brief and to suggest new directions for the brand. They thus remained involved longer than expected (Table 7). *Star-based* designers were systematically involved in both the early design and launch stages. The designers' strong auras were viewed as added value to the press conference, a key event in this industry (Table 7).

Insert Table 7

Influence of the Relationship Process on NPD Success

Following the examination of the relationship attributes and their influence on the relationship process, the influence of the relationship process on NPD success was assessed.

Influence of Designer Brand Commitment on NPD Success. A deeper analysis of the success cases showed that in these cases, external designers fully grasped the marketing vision and brand identity. According to the marketers, success was mainly due to consistency between the new product design and brand identity.

Nowadays, the packaging is the main element in our luxury industry... This packaging was so strong and embodied the brand mix so well that we used it everywhere: in TV and press advertising, on point-of-sales material visuals, on folding boxes... Thanks to this project, we gained market share (S3_M).

My job is to try and bring a design that is consistent with the brand (S3_D).

In contrast, in the failure cases, the external designers were not always fully committed to integrating brand values, which led to products that were not consistent with brand identity. In F3, for instance, the designer recognized that he had not fully integrated the brand requirements in terms of market target and brand identity:

I wanted to suggest alternative designs, not another classical fragrance bottle, but something different... I think that at the end of the day, this fragrance bottle was slightly too intellectual for the target of the fragrance market, where you have to appeal to women and to be girly. Personally, I am not used to focusing on this anecdotal

dimension... The bottle is a little bit too cold because it is plain white. We could have added some ornamentation; it looks a little bit old fashioned... It may be slightly too simple (F3_D).

The bottle was slightly too retro; we would have liked it to be more modern (F3_M).

Influence of the Number of NPD Stages Involving Designer on NPD Success. Further comparison of relationship patterns between success and failure cases highlighted the importance of the number of NPD stages involving designer. An event analysis showed that successful relationships were those in which the external designers were the most intensively integrated. More specifically, the involvement of external designers in various stages of the NPD process, not only in early design stage but also in concept generation or late design stages, was prevalent in successful cases (Table 8).

Insert Table 8

Pathways of NPD Success

The QCA was used to establish whether the drivers that were identified through the multiple dyadic case studies were necessary and/or sufficient conditions for NPD success. In its crisp-set version, QCA is based on Boolean logic. To conduct the analysis, the values of the conditions and the outcome of interest are dichotomized into values of 0 and 1, with 1 indicating that a given condition/outcome is present and 0 indicating its absence. Computation of the complex solution revealed that both the consistency of the data, i.e., the extent to which condition X is necessary for outcome Y (analogous to a correlation coefficient), and the coverage of the data, i.e., the size of the relationship between the outcome set and the condition set (analogous to the coefficient of determination r^2) (Woodside, 2013), were very high (Table 9). In line with Ragin (2006, p. 299), the consistency is high and above the minimum threshold of 0.75, while no threshold exists for the coverage value in the crisp-set QCA. These values indicate, with a high degree of certainty, that the combination of the identified drivers was necessary to produce NPD success.

Two pathways led to NPD success. The first pathway indicates that contact authority combined with designer brand commitment and with a high number of NPD stages involving designer led to NPD success. Conversely, if external designers were involved in many NPD stages with contact authority but no brand commitment, NPD failure occurred (Table 9). The second pathway indicates that a previous relationship combined with contact authority and designer brand commitment resulted in NPD success. These two pathways were fully consistent (consistency = 1) and explained a satisfactory number of cases of NPD success (coverage = 0.75). This complex solution analysis thus shows that four conditions – namely, a previous relationship, contact authority, number of NPD stages involving designer and designer brand commitment – lead to NPD success. Contact authority and designer brand commitment appeared in both pathways, indicating that they are necessary conditions, i.e., that they must be present for a successful outcome to occur, but are not sufficient to ensure NPD success. A condition (here called a driver) is necessary when it is always present when the outcome occurs. It is sufficient when on its own it explains the resulting outcome (Berg-Schlusser et al., 2009).

To better consider the influence of different designer types on the relationship, sources of design expertise were then introduced into the complex solution (Table 9). The results reveal that the first pathway was especially relevant in the case of *process-based* external designers (consistency = 1; coverage = 0.5). The second pathway was particularly confirmed in the case of *customer-based* external designers. Conversely, two pathways led to NPD failure, including *customer-based* and *star-based* external designers. These results suggest that the pathways of NPD success may differ according to the source of design expertise. Yet, due to the limited number of each type of designer in our sample, one cannot at this stage identify NPD success pathways for all types of designers, and especially for *star-based* ones.

Insert Table 9

The content analysis of the multiple dyadic case study combined with QCA however provided a deeper understanding of the pathways of NPD success (Table 10).

Insert Table 10

Discussion and Propositions

Building on the literature on related topics (NPD, design management and relationship marketing) and on nine dyadic case studies analyzed through a content analysis combined with a QCA, this research provides a model of drivers and pathways of NPD success in the marketing-external design relationship (Figure 1). First, it introduces three new NPD success drivers: source of design expertise, designer brand commitment and number of NPD stages involving designer. Second, our results reveal the pathways leading to NPD success that are the basis of the research propositions. It especially shows that contact authority and designer brand commitment are necessary conditions for NPD success, especially when combined with a high number of NPD stages involving designer or a previous relationship. The results also indicate that pathways of NPD success may differ according to the source of design expertise.

This study is distinct from the literature examining the advertising agency-client relationship (ACR) that also addresses creative partners^v. First, ACR is not linked to the NPD process and does not impact tangible aspects of the product. NPD commits the company to a much longer term, requires more cooperation and implies greater investments than a communication operation. Second, our study addresses the direct relationship between a business-oriented function (marketing) and a creative partner (external designer), while ACR focuses on an indirect relationship with creative partners, since it analyzes the relationship with non-creative account directors who are mediators between the marketing and creative roles (Beverland et al., 2007, Keegan et al., 2017). Finally, the marketing-external design relationship is discontinuous and project-based, while ACR is continuous and focuses on

long-term contracts. Consequently, the focus is different. While our study identifies the conditions that favor NPD success, the ACR literature focuses on relationship longevity. Our study therefore leads to several new research propositions.

First, it shows that NPD success can occur even though external designers are not involved in the idea generation stage. This can be partly explained by past research on NPD, which indicates that inter-functional cooperation is a critical determinant of NPD success due to communication, similar task orientation and interpersonal relations (Song et al., 1997). These results suggest that when working with external design, NPD success is less impacted by the early involvement of external design (Cooper, 2008) than by the involvement of designers in a high number of NPD stages and by the implementation of mechanisms that lead to a high level of brand commitment, such as contact authority. One possible explanation is that such NPD stages involving designer and brand commitment are a means to ensure product consistency with brand values, thereby leading to NPD success. Indeed, if designers are involved in a high number of NPD stages but not committed to brand identity, NPD failure occurs. This leads to the following proposition:

P1: The combination of (1) *contact authority*, (2) *designer brand commitment* and (3) *a high number of NPD stages involving designer* leads to NPD success.

Our findings also show that a previous relationship is a driver of relationship quality, in line with prior research which suggests it is a means to foster familiarity, mutual understanding, respect, trust, stability and continuity of the relationship (Borja de Mozota, 2003, Bruce and Cooper, 1997, Bruce and Morris, 1994, Verganti, 2003, Von Stamm, 2008). Our study also reveals that a previous relationship combined with contact authority and designer brand commitment leads to NPD success. This result can be explained by the fact that external designers might already be familiar with the appropriate brand values and have a refined knowledge of the brand customers' needs, which influence their brand commitment.

Furthermore, contact authority favors decision-making that ensures respect of brand identity.

This leads to the following proposition:

P2: The combination of (1) *previous relationship*, (2) *contact authority* and (3) *designer brand commitment* leads to NPD success.

This article also reveals that the source of design expertise, when combined with other drivers, may influence NPD success. Our data indicate that resorting to *customer-based* external designers leads to NPD success when a previous relationship exists, when designers benefit from contact authority and when designers are committed to brand identity. In the case of a long-term and close relationship (previous collaboration and contact authority), the advantages of resorting to *customer-based* external designers can be compared to those when collaborating with internal design.

This study also shows that due to their specific creative and organizational processes, *process-based* external designers are more likely to be committed to brand, which is strengthened by contact authority. They are also involved in a high number of NPD stages, especially in the concept stage (Table 6). These findings lead to the following propositions:

P3a: When the source of external design expertise is customer-based, the combination of (1) *previous relationship* (2) *contact authority* and (3) *designer brand commitment* leads to NPD success.

P3b: When the source of external design expertise is process-based, the combination of (1) *contact authority*, (2) *designer brand commitment* and (3) *a high number of NPD stages involving designer* leads to NPD success.

Finally, while the literature suggests that resorting to *star-based* designers enhances firm performance (Gemser and Wijnberg, 2002), our results do not confirm this link. *Star-based* external designers whose source of expertise is built on their individual creativity are attractive resources for marketing departments, since they provide a competitive advantage in

terms of creativity, innovation, and branding (Abecassis-Moedas et al., 2012). The introduction of radical innovations is frequently associated with designers' own individual interpretative capabilities (Verganti, 2009). Their creativity can be evaluated through the number and nature of the design awards they have earned, which is considered an indicator of innovativeness (Dell'Era and Verganti, 2010, Gemser and Wijnberg, 2002, Walsh, Roy and Bruce, 1988). Awards act as a trigger of purchase (Sung, Nam and Chung, 2010) and are positively linked to design firm performance (Gemser and Wijnberg, 2002). Yet, in our data, *star-based* designers do not lead to NPD success. One possible explanation for this result is that *star-based* designers' will to nurture a new product design is based on their individual creativity rather than the brand's history and values, leading to low brand commitment. As a consequence, their new product creation might be disconnected from the brand's identity – which might occur even though the external designers are involved in a high number of NPD stages. These findings lead to the following proposition:

P3c: When the source of external design expertise is star-based, (1) *contact authority* and (2) *a high number of NPD stages involving designer* are essential but not sufficient conditions for NPD success.

Our findings thus suggest that the source of design expertise may matter. They also show that while the number of NPD stages involving designer clearly matters, other elements might impact NPD success, such as the nature of the NPD stages in which the designers are involved (Table 6). Due to their specific organizational processes, *process-based* designers are, for example, more prone to be involved in the concept generation stage than other designers. Yet, based on our data, it cannot be clearly determined whether source of design expertise matters more than the number of NPD stages involving designer or the nature of NPD stages in which designers are involved in pathways of NPD success.

Conclusion

Theoretical Implications

At a theoretical level, this study heeds the call for a better understanding of the conditions required for NPD success in the marketing-external design relationship (Ravasi and Stigliani, 2012), which is a typical case of interorganizational collaboration between a business-oriented function (marketing) and a creative partner (external design). A model of drivers and pathways of NPD success was developed through a research design based on multiple case studies of NPD successes and failures, a dyadic perspective and QCA, which has seldom been used in the innovation field. This approach allows for theory development, and it thus contributes to and extends existing literature in four distinct ways.

First, this study enriches the NPD literature in several ways. As the NPD field evolves to open systems that have changed concepts like functional integration to more interorganizational integration leading to the emergence of new success factors (Evanschitzky et al., 2012), this study managed to identify new NPD success drivers. By merging three streams of research, confirming the importance of investigating more broadly NPD success factors (Evanschitzky et al., 2012), this research therefore proposes an integrated conceptual framework to better capture the nature of NPD success drivers in the marketing-external design relationship.

Furthermore, while earlier studies have indicated that successful NPD requires various drivers (Cooper, 2008, Evanschitzky et al., 2012, Montoya-Weiss and Calantone, 1994, Song et al., 1997, Zhang et al., 2011), they provided little guidance on how firms can achieve that. By arguing that NPD success is linked to specific pathways of the different success drivers, this study proposes a dynamic approach thus providing new knowledge on the interactions between different drivers. It reveals combinations of drivers that lead to NPD success as well as showing how some individual drivers influence others.

It especially shows that involvement in the idea generation stage is not always a major driver of NPD success as suggested by Cooper (2008). Our findings indicate that when marketing departments work with external design, designers must be involved in many stages of the NPD process, late stages being as important as early stages. By revealing the importance of the number of NPD stages involving designer, this study also establishes the link between marketing-external design integration and NPD success, thereby extending the results of Zhang et al. (2011). In addition to number of NPD stages involving designer, this research extends the NPD literature by identifying designer brand commitment as a new driver of NPD success.

Second, this study contributes to deepening the marketing-design literature and especially the emerging knowledge on marketing-external design relationship (Borja de Mozota, 2003, Bruce and Cooper, 1997, Bruce and Daly, 2007). Previous research on marketing-design relationship focused on the importance of ensuring new product consistency with brand core values and heritage (Beverland, 2005, Beverland, Wilner and Micheli, 2015, Karjalainen and Snelders, 2010), revealing how design practices enable the renewal of the brand while preserving its identity (Beverland et al., 2015, Karjalainen and Snelders, 2010). Yet, these prior articles focused on internal designers who are already immersed in the brand and did not establish a link with NPD success. While confirming the importance of branding in the marketing-design relationship, this study shows that external designers do not systemically integrate this dimension. It reveals that branding, a major asset for marketing, has to be carefully managed when resorting to external design and that external designers' commitment to brand cannot be taken for granted, even though it is a necessary condition for NPD success. Furthermore, while internal designers are within the company and easily available throughout the NPD process, our results underline the importance of integrating external designers in a high number of NPD stages.

Third, this research enriches literature on design expertise, which is an under-researched area in the NPD and design literature (Cross, 2004, Lawson and Dorst, 2013, Zhang, 2015). While the literature on design expertise mostly embraces the concepts of novice and expert (Ozkan and Dogan, 2013), with level of expertise often measured by years of experience (Ericsson and Smith, 1991), this study shows that considering the level of expertise is not sufficient in the marketing-external design relationship. Indeed, even when external designers have the same level of expertise (Table 2), the pathways to NPD success may differ according to their sources of expertise, which are based on methodological assets (*customer-based* or *process-based*) or personal assets (*star-based*). By distinguishing the source of expertise from the level of expertise, this research offers a finer-grained understanding of what constitutes design expertise and suggests a new dimension of this construct.

Finally, this research enriches the relationship marketing literature (Palmatier, 2008, Palmatier et al., 2006, Sivadas and Dwyer, 2000) by refining the understanding of the link between commitment and NPD success in the context of external design partnership that is discontinuous and project-based. Our research especially reveals another dimension of commitment, the designer brand commitment that is the commitment in the partner's strategic vision. This commitment relies on the desire to value the brand identity of the partner which is a specific way to maintain a valued relationship (Appendix A). This research also shows that designer brand commitment is a driver of NPD success. The study identifies three drivers that influence designer brand commitment and that are linked to relationship attributes: a previous relationship, contact authority and source of design expertise.

Managerial Implications

Marketing department innovativeness is a means to increase innovation performance (Drechsler et al., 2013, Verhoef and Leeflang, 2009), and marketing departments are looking

for new ways to generate ideas that lead to stronger competitive advantage. The frequency of relationships with external creative partners, and especially external designers, makes it vital for marketing managers to better understand the NPD success drivers in such situations. This research shows that in the relationship between a business-oriented function and a creative partner, the quality of the relationship and a common understanding of each party's objectives are just as important drivers of NPD success as the creative characteristics of the partner and its reputation. The model developed here can guide marketing managers in choosing the right partner, handling the relationship and choosing from the range of drivers and pathways to devise more effective ways to work with external designers in the NPD process. Our study therefore provides key recommendations to managers.

First, this study suggests that managers should consider two necessary conditions for NPD success: contact authority and strong brand commitment. This means that the company should appoint C-suite members or at least senior marketing executives to be external design's contact to ensure efficient and fast decision-making capabilities. They should also choose an external designer who seems highly committed to understanding and respecting the brand identity and who can adapt its creativity to the brand characteristics, and this constraint should be recalled at each stage of the creativity process. Note that key decision-makers will also be able to put more pressure on the design agency to respect the brand identity.

Second, this study proposes two pathways leading to NPD success. The first pathway implies that the three conditions of contact authority, designer brand commitment and high number of NPD stages involving designer are met. The second pathway implies that the three conditions of having a previous relationship with the chosen external designers, contact authority, and designer brand commitment are met. This means that whenever the two necessary conditions mentioned in the previous paragraph are met, the third condition to

foster NPD success can either be to involve the external designer in many NPD stages or to choose a partner with whom the brand has worked before.

Third, this study emphasizes the importance of considering the source of design expertise to adapt the relationship process and thus promote NPD success. Once the company has chosen an external designer and identified its profile in terms of design expertise, the marketing department should emphasize different aspects of the collaboration. If it is a *customer-based* external designer, marketing managers should stimulate even more designer commitment to brand identity, especially when the marketers and designers have not collaborated before. When the external designers are *process-based*, marketers should involve them as soon as possible in the NPD process, especially during upstream activities such as need identification or concept generation, and throughout the entire NPD process. When it is a *star-based* external designer, special precautions should be taken. While *star-based* designers are attractive to marketing departments, our results suggest that managers should handle this relationship very carefully and create mechanisms for control and to ensure consistency with brand identity. Brand monitoring should be included in the checklist of the go/kill decision at each stage of the NPD process (Cooper, 2008).

Limitations and Future Research

The results must be viewed in light of the study's limitations. First, the initial purpose of this research was to obtain an in-depth understanding of the drivers and pathways of NPD success in the marketing-external design relationship using a multiple dyadic case study enriched with the crisp-set analysis. Our research would benefit from larger-scale replication to test our results, measuring the respective weight of each factor in its contribution to performance and allowing further exploration of NPD success pathways with more cases for each source of design expertise. This would also help to distinguish whether the number of NPD stages

matters more than the nature of the NPD stages in which designers are involved in the pathways of NPD success. Moreover, while the literature suggests that resorting to external design increases product innovativeness, further research could determine the extent to which source of expertise moderates this link.

Second, this research focuses only on the luxury fragrance and cosmetics industry, in which marketing-external design relationships are frequent, marketing and design play critical roles in product differentiation, and brands are considered key assets. While this research benefits from examining a relatively homogeneous group of firms, its conclusions require some caution. Because the effects of external relationships on NPD success are stronger for low-tech than for high-tech sectors (Evanschitzky et al., 2012), and because this study lends support to some findings from previous studies, it is expected that the model is generalizable to other low-tech sectors (such as fast-moving consumer goods and the fashion industry). Yet, given the peculiarities of this empirical context (high-interest products, mass production, business-to-consumer sector), further research in other industries is needed to determine whether the model can be applied to other settings. The study should also be replicated in other industrial sectors where branding is less important. Finally, while this study reveals the importance of contact authority, replication of this study in other sectors may reveal other relevant drivers linked to the customer-focused dimension.

References

- Abecassis-Moedas, C., S. Ben Mahmoud-Jouini, C. Dell'Era, D. Manceau, and R. Verganti. 2012. Key Resources and Internationalization Modes of Creative Knowledge-Intensive Business Services: The Case of Design Consultancies. *Creativity and Innovation Management* 21 (3): 315-31.
- Abecassis-Moedas, C., and S. Ben Mahmoud-Jouini. 2008. Absorptive Capacity and Source-Recipient Complementarity in Designing New Products: An Empirically Derived Framework. *Journal of Product Innovation Management* 25 (5): 473-90.
- Abecassis-Moedas, C., and J. Rodrigues Pereira. 2016. External design for reputation, perspective and exposure. *Creativity and Innovation Management* 25: 396-407.
- Badrinarayanan, V., and D.B. Arnett. 2008. Effective virtual new product development teams: an integrated framework. *Journal of Business & Industrial Marketing* 23 (4): 242-48.

- Bailetti, A.J., and P.F. Litva. 1995. Integrating customer requirements into product designs. *Journal of Product Innovation Management* 12 (1): 3-15.
- Berg-Schlosser, D., G. De Meur, B. Rihoux, and C.C. Ragin. 2009. Qualitative comparative analysis (QCA) as an approach. In: *Configurational comparative methods*. Thousand Oaks, CA: Sage Publications, 1-18.
- Beverland, M. 2005. Managing the Design Innovation–Brand Marketing Interface: Resolving the Tension between Artistic Creation and Commercial Imperatives. *Journal of Product Innovation Management* 22 (2): 193-207.
- Beverland, M., F. Farrelly, and Z. Woodhatch. 2007. Exploring the dimensions of proactivity within advertising agency—client relationships. *Journal of Advertising* 36 (4): 49-60.
- Beverland, M.B., P. Micheli, and F.J. Farrelly. 2016. Resourceful sensemaking: Overcoming barriers between marketing and design in NPD. *Journal of Product Innovation Management* 33 (5): 628-48.
- Beverland, M.B., S.J. Wilner, and P. Micheli. 2015. Reconciling the tension between consistency and relevance: design thinking as a mechanism for brand ambidexterity. *Journal of the Academy of Marketing Science* 43 (5): 589-609.
- Borja de Mozota, B. 2003. *Design management: using design to build brand value and corporate innovation*. New York: Allworth Press.
- Borja de Mozota, B. 2006. The four powers of design: A value model in design management. *Design Management Review* 17 (2): 44-53.
- Boudreau, K.J., E.C. Guinan, K.R. Lakhani, and C. Riedl. 2016. Looking across and looking beyond the knowledge frontier: Intellectual distance, novelty, and resource allocation in science. *Management science* 62 (10): 2765-83.
- Brockman, B.K., M.E. Rawlston, M.A. Jones, and D. Halstead. 2010. An exploratory model of interpersonal cohesiveness in new product development teams. *Journal of Product Innovation Management* 27 (2): 201-19.
- Brown, S.L., and K.M. Eisenhardt. 1995. Product Development: Past Research, Present Findings, and Future Directions. *Academy of Management Review* 20 (2): 343-78.
- Bruce, M., and R. Cooper. 1997. *Marketing and design management*. London: Intl Thomson Business Press.
- Bruce, M., and L. Daly. 2007. Design and marketing connections: creating added value. *Journal of Marketing Management* 23 (9-10): 929-53.
- Bruce, M., and B.H. Jevnaker. 1998. *Management of design alliances: sustaining competitive advantage*. Chichester: John Wiley & Son Ltd.
- Bruce, M., and B. Morris. 1994. Managing external design professionals in the product development process. *Technovation* 14 (9): 585-99.
- Bstieler, L., and M. Hemmert. 2015. The effectiveness of relational and contractual governance in new product development collaborations: Evidence from Korea. *Technovation* 45: 29-39.
- Caves, R.E. 2000. *Creative industries: Contracts between art and commerce*. Boston: Harvard University Press.
- Chai, C., F. Cen, W. Ruan, C. Yang, and H. Li. 2015. Behavioral analysis of analogical reasoning in design: Differences among designers with different expertise levels. *Design studies* 36: 3-30.
- Chaston, I. 2008. Small creative industry firms: a development dilemma? *Management Decision* 46 (6): 819-31.
- Chitturi, R., R. Raghunathan, and V. Mahajan. 2008. Delight by Design: The Role of Hedonic Versus Utilitarian Benefits. *Journal of Marketing* 72 (3): 48-63.
- Chiva, R., and J. Alegre. 2007. Linking design management skills and design function organization: An empirical study of Spanish and Italian ceramic tile producers. *Technovation* 27 (10): 616-27.
- Cooper, R., and M. Press. 1995. *The design agenda: a guide to successful design management*. Chichester: John Wiley and Sons.
- Cooper, R.G. 2008. Perspective: The Stage-Gate idea-to-launch process - Update, what's new, and NexGen Systems. *Journal of Product Innovation Management* 25 (3): 213-32.
- Coviello, N.E., and R.M. Joseph. 2012. Creating major innovations with customers: insights from small and young technology firms. *Journal of Marketing* 76 (6): 87-104.
- Cross, N. 2004. Expertise in design: an overview. *Design studies* 25 (5): 427-41.

- Czarnitzki, D., and S. Thorwarth. 2012. The Contribution of In-house and External Design Activities to Product Market Performance. *Journal of Product Innovation Management* 29 (5): 878-95.
- Dell'Era, C., and R. Verganti. 2010. Collaborative Strategies in Design-intensive Industries: Knowledge Diversity and Innovation. *Long Range Planning* 43 (1): 123-41.
- Drechsler, W., M. Natter, and P.S. Leeflang. 2013. Improving Marketing's Contribution to New Product Development. *Journal of Product Innovation Management* 30 (2): 298-315.
- Edeling, A., and M. Fischer. 2016. Marketing's impact on firm value: Generalizations from a meta-analysis. *Journal of Marketing Research* 53 (4): 515-34.
- Eisenhardt, K.M. 1989. Building Theories from Case Study Research. *Academy of Management Review* 14 (4): 532-50.
- Eisenhardt, K.M., and M.E. Graebner. 2007. Theory Building from Cases: Opportunities and Challenges. *Academy of Management Journal* 50 (1): 25-32.
- Ericsson, K.A., and J. Smith. 1991. *Toward a general theory of expertise: Prospects and limits*. Cambridge University Press.
- Evanschitzky, H., M. Eisend, R.J. Calantone, and Y. Jiang. 2012. Success factors of product innovation: An updated meta-analysis. *Journal of Product Innovation Management* 29 (S1): 21-37.
- French Ministry of Economy. 2010. *The design economy*. France: French Ministry of Economy. Direction Générale de la Compétitivité de l'Industrie et des Services (DGCIS), Ministère de l'Economie de l'Industrie et de l'Emploi.
- Gemser, G., and N.M. Wijnberg. 2002. The economic significance of industrial design awards: A conceptual framework. *Academic Review* 2 (1): 61-71.
- Griffin, A., and A.L. Page. 1996. PDMA success measurement project: recommended measures for product development success and failure. *Journal of Product Innovation Management* 13 (6): 478-96.
- Hargadon, A., and R.I. Sutton. 1997. Technology Brokering and Innovation in a Product Development Firm. *Administrative Science Quarterly* 42 (4): 716-49.
- Ho, C.-H. 2001. Some phenomena of problem decomposition strategy for design thinking: differences between novices and experts. *Design studies* 22 (1): 27-45.
- Holmes, E. 2012. Perfume Bottles Gone Wild. *Wall Street Journal (Europe Edition)*, June 7.
- Homburg, C., M. Schwemmler, and C. Kuehnl. 2015. New product design: Concept, measurement, and consequences. *Journal of Marketing* 79 (3): 41-56.
- Karjalainen, T.M., and D. Snelders. 2010. Designing Visual Recognition for the Brand. *Journal of Product Innovation Management* 27 (1): 6-22.
- Keegan, B.J., J. Rowley, and J. Tonge. 2017. Marketing agency–client relationships: towards a research agenda. *European Journal of Marketing* 51 (7/8): 1197-223.
- Kumar, M., J.D. Townsend, and D.W. Vorhies. 2015. Enhancing Consumers' Affection for a Brand Using Product Design. *Journal of Product Innovation Management* 32 (5): 716-30.
- Langley, A. 1999. Strategies for Theorizing from Process Data. *Academy of Management Review* 24 (4): 691-710.
- Lawson, B., and K. Dorst. 2013. *Design expertise*. Oxford: Architectural Press.
- Luchs, M., and K.S. Swan. 2011. Perspective: The Emergence of Product Design as a Field of Marketing Inquiry. *Journal of Product Innovation Management* 28 (3): 327-45.
- Luchs, M.G., K.S. Swan, and M.E.H. Creusen. 2016. Perspective: A review of marketing research on product design with directions for future research. *Journal of Product Innovation Management* 33 (3): 320-41.
- MacPherson, A., and V. Vanchan. 2009. The outsourcing of industrial design services by large US manufacturing companies. *International Regional Science Review* 33 (1): 3-30.
- Matusow, J. 2012. Beauty company of the year-excellence in packaging: Elizabeth Arden. Retrieved February 7, 2012, from https://www.beautypackaging.com/issues/2012-01/view_features/beauty-company-of-the-year-excellence-in-pack/
- Melewar, T.C., C. Dennis, and A. Kent. 2014. Global design, marketing and branding: Introduction to the special issue. *Journal of Business Research* 67 (11): 2241-42.
- Miles, M.B., and A.M. Huberman. 1994. *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks: Sage.

- Montoya-Weiss, M.M., and R. Calantone. 1994. Determinants of New Product Performance: A Review and Meta-Analysis. *Journal of Product Innovation Management* 11 (5): 397-417.
- Moorman, C., R. Deshpande, and G. Zaltman. 1993. Factors affecting trust in market research relationships. *The Journal of Marketing* 57 (1): 81-101.
- Moorman, C., and R.T. Rust. 1999. The role of marketing. *Journal of Marketing* 63 (Special Issue): 180-97.
- Morgan, R.M., and S.D. Hunt. 1994. The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing* 58 (3): 20.
- Obal, M., R. Kannan-Narasimhan, and G. Ko. 2016. Whom should we talk to? Investigating the varying roles of internal and external relationship quality on radical and incremental innovation performance. *Journal of Product Innovation Management* 33: 136-47.
- Ordanini, A., G. Rubera, and M. Sala. 2008. Integrating functional knowledge and embedding learning in new product launches: how project forms helped EMI Music. *Long Range Planning* 41 (1): 17-32.
- Ozkan, O., and F. Dogan. 2013. Cognitive strategies of analogical reasoning in design: Differences between expert and novice designers. *Design studies* 34 (2): 161-92.
- Palmatier, R.W. 2008. Interfirm Relational Drivers of Customer Value. *Journal of Marketing* 72 (4): 76-89.
- Palmatier, R.W., R.P. Dant, D. Grewal, and K.R. Evans. 2006. Factors Influencing the Effectiveness of Relationship Marketing: A Meta-Analysis. *Journal of Marketing* 70 (4): 136-53.
- Palmatier, R.W., M.B. Houston, R.P. Dant, and D. Grewal. 2013. Relationship velocity: toward a theory of relationship dynamics. *Journal of Marketing* 77 (1): 13-30.
- Perks, H., R. Cooper, and C. Jones. 2005. Characterizing the Role of Design in New Product Development: An Empirically Derived Taxonomy. *Journal of Product Innovation Management* 22 (2): 111-27.
- Pratt, M.G. 2008. Fitting oval pegs into round holes: Tensions in evaluating and publishing qualitative research in top-tier North American journals. *Organizational Research Methods* 11 (3): 481-509.
- Ragin, C.C. 2006. Set relations in social research: Evaluating their consistency and coverage. *Political Analysis* 14 (3): 291-310.
- Ragin, C.C. 2008. *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: University of Chicago Press.
- Ravasi, D., and G. Lojacono. 2005. Managing design and designers for strategic renewal. *Long Range Planning* 38 (1): 51-77.
- Ravasi, D., and I. Stigliani. 2012. Product design: a review and research agenda for management studies. *International Journal of Management Reviews* 14 (4): 464-88.
- Rindfleisch, A., and C. Moorman. 2001. The acquisition and utilization of information in new product alliances: A strength-of-ties perspective. *Journal of Marketing* 65 (2): 1-18.
- Roy, R., and S. Potter. 1993. The commercial impacts of investment in design. *Design studies* 14 (2): 171-93.
- Seitamaa-Hakkarainen, P., and K. Hakkarainen. 2001. Composition and construction in experts' and novices' weaving design. *Design studies* 22 (1): 47-66.
- Sivadas, E., and F.R. Dwyer. 2000. An examination of organizational factors influencing new product success in internal and alliance-based processes. *Journal of Marketing* 64 (1): 31-49.
- Sjoerdsma, M., and A.J. van Weele. 2015. Managing supplier relationships in a new product development context. *Journal of Purchasing and Supply Management* 21 (3): 192-203.
- Song, X.M., M.M. Montoya-Weiss, and J.B. Schmidt. 1997. Antecedents and Consequences of Cross-Functional Cooperation: A Comparison of R&D, Manufacturing, and Marketing Perspectives. *Journal of Product Innovation Management* 14 (1): 35-47.
- Sung, W.O., K.-Y. Nam, and K.-w. Chung. 2010. Strategic Use of International Product Design Award Schemes. *Design Management Journal* 5 (1): 72-86.
- Troy, L.C., T. Hirunyawipada, and A.K. Paswan. 2008. Cross-Functional Integration and New Product Success: An Empirical Investigation of the Findings. *Journal of Marketing* 72 (6): 132-46.
- Verganti, R. 2003. Design as brokering of languages: Innovation strategies in Italian firms. *Design Management Journal* 14 (3): 34-42.

- Verganti, R. 2009. *Design-Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*. Boston: Harvard Business School Press.
- Verhoef, P.C., and P.S. Leeflang. 2009. Understanding the marketing department's influence within the firm. *Journal of Marketing* 73 (2): 14-37.
- Veryzer, R.W., and B. Borja de Mozota. 2005. The Impact of User-Oriented Design on New Product Development: An Examination of Fundamental Relationships. *Journal of Product Innovation Management* 22 (2): 128-43.
- Von Stamm, B. 2008. *Managing innovation, design and creativity*. Chichester: John Wiley & Sons.
- Walsh, V., R. Roy, and M. Bruce. 1988. Competitive by Design. *Journal of Marketing Management* 4 (2): 201-16.
- Walter, A. 2003. Relationship-specific factors influencing supplier involvement in customer new product development. *Journal of Business Research* 56 (9): 721-33.
- Woodside, A.G. 2013. Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. *Journal of Business Research* 66 (4): 463-72.
- Yin, R.K. 2013. *Case study research: Design and methods*. Thousand Oaks, CA: Sage publications.
- Zhang, D. 2015. Industrial designers: are you ready for foreign markets? Assessing designer confidence and prediction accuracy in a transnational marketing context. *Creativity and Innovation Management* 24 (3): 449-63.
- Zhang, D., P. Hu, and M. Kotabe. 2011. Marketing-Industrial Design Integration in New Product Development: The Case of China. *Journal of Product Innovation Management* 28 (3): 360-73.

Table 1 Literature-Based Drivers of NPD Success in the Marketing–External Design Relationship

	Relationship Marketing Literature	Design Management Literature	NPD Literature
RELATIONSHIP ATTRIBUTES			
Previous relationship	-Previous relationship (<i>Palmatier, 2008, Palmatier et al., 2013</i>)	-Long-term relationship (<i>Borja de Mozota, 2003, Bruce and Morris, 1994, Von Stamm, 2008</i>)	
Contact authority	-Contact authority (<i>Moorman et al., 1993, Palmatier, 2008</i>)	-Top management support (<i>Verganti, 2003</i>)	-Top management support (<i>Montoya-Weiss and Calantone, 1994, Song et al., 1997</i>)
RELATIONSHIP PROCESS			
Relationship Quality			
	Trust (<i>Morgan and Hunt, 1994, Obal et al., 2016, Palmatier et al., 2006, Sivadas and Dwyer, 2000</i>)	-Trust (<i>Bruce and Jevnaker, 1998</i>)	
	Exchange efficiency -Communication quality -Information sharing -Contact frequency (<i>Obal et al., 2016, Palmatier, 2008, Rindfleisch and Moorman, 2001, Sivadas and Dwyer, 2000</i>)	-Common understanding (<i>Cooper and Press, 1995</i>) -Knowledge transfer (<i>Verganti, 2003</i>) -Frequent discussions (<i>Von Stamm, 2008</i>) -Clear role definitions (<i>Cooper and Press, 1995</i>)	-Transfer mechanism (<i>Bailetti and Litva, 1995</i>) -Intensity of communication (<i>Song et al., 1997</i>) -High degree of interpersonal interactions (<i>Song et al., 1997</i>)
	Reciprocity norms (<i>Palmatier, 2008, Rindfleisch and Moorman, 2001</i>)	-Value sharing (<i>Verganti, 2003</i>) -Respect (<i>Cooper and Press, 1995</i>)	-Give-and-take relationship (<i>Song et al., 1997</i>)

Table 2 List and Characteristics of Case Studies

Case	Interviews	Brand Description	New Product Description	Profile of Marketers' Respondents*	Profile of Groups Owning the Brands**	Profile of Designers' Respondents*	Source of Design Expertise (number of employees)
S1	2	Chinese brand introduced in Europe and owned by a multinational Chinese group	Skincare products, global range, female target Contemporary jars inspired by Chinese pharmacopoeia	Senior product manager (7)	Turnover: 356 M€ International: yes Industry: Perfume and cosmetics	Design Agency CEO (19)	Process-based (11-50)
S2	2	International luxury jewelry brand launching a new fragrance owned by a multinational French group	Perfume, female target Bottle shape inspired by precious stone	Marketing manager (10)	Turnover: 306 M€ International: yes Industry: Perfume and cosmetics	Design Agency's top executive (15)	Process-based (100-200)
S3	2	French high-end perfumery brand with strong international position and owned by a multinational French group	Skincare products, anti-aging, female target Bottle shape inspired by alveolus	Senior product manager (6)	Turnover: 20 320 M€ International: yes Industry: Perfume and cosmetics, alcohol, fashion...	Design Agency CEO (9)	Customer-based (11-20)
S4	2	French high-end perfumery brand with strong international position and owned by a multinational French group	Makeup, lipstick, female target New lipstick shape and mechanism	Marketing manager (9)	Turnover: 20 320 M€ International: yes Industry: Perfume and cosmetics, alcohol, fashion...	Design Agency CEO (15)	Customer-based (1-10)
F1	2	Italian fashion brand with international positions introducing a new fragrance to its portfolio	Perfume, male and female target Transparent bottle	Marketing director (25)	Turnover: 620 M€ International: yes Industry: Perfume and cosmetics, fashion	Design Agency CEO (16)	Customer-based (1-10)
F2	2	International luxury brand with Japanese origins owned by a multinational French group	Perfume, female target Bottle shape inspired by infinity symbol	Senior product manager (6)	Turnover: 23 659 M€ International: yes Industry: Perfume and cosmetics, alcohol, fashion...	Design Agency CEO (29)	Star-based (11-50)
F3	2	French fashion and perfumery brand with international position and owned by a multinational French group	Perfume, young female target Bottle shape inspired by a powder jar	Marketing manager (8)	Turnover: 17 500 M€ International: yes Industry: Perfume and cosmetics	Design Agency CEO (20)	Star-based (11-50)
F4	2	Well-known German fashion brand introducing a new fragrance owned by a multinational French group	Perfume, female target Cylindrical bottle shape	Marketing manager (13)	Turnover: 4 100 M€ International: yes Industry: Perfume and cosmetics	Design Agency CEO (25)	Customer-based (1-10)
F5	2	French brand with limited international activity owned by a US multinational group	Perfume, female target Bottle shape inspired by a woman's hat	Product manager (4)	Turnover: 82 000 M€ International: yes Industry: Perfume and cosmetics, food, household products	Design Agency CEO (19)	Customer-based (1-10)

*The number in brackets corresponds to the number of years of professional experience.

**The studied brands' turnover is not systematically made public and is often aggregated with the group's turnover. Released figures are those of the groups. They correspond to the year of the studied new product's launch.

Table 3 NPD Success Evaluation

	Customer measures		Financial measure	Program measure
Case*	Market shares/Sales	Fit with consumer needs	Profitability	Expectation of continuity ^b
S1	"We achieved our objectives. Our growth rate is +40%." (S1 _M)***	"Our customers liked the design very much." (S1 _M)	"Agency helped us to improve profitability." (S1 _M)	"After that project, we made the store design and spas project. And this year, we also invited them to join the new counter design project." (S1 _M)
S2	"Fully in line with our expectations in terms of turnover and sales volumes." (S2 _M)**	"You should not rely too much on consumers' feedback (...) There were no consumer tests." (S2 _D)	"Profitability levels were consistent with what was initially decided." (S2 _M)	"We then worked with them on a new masculine fragrance bottle, so this is proof that we were satisfied with their work." (S2 _M)
S3	"This project enabled us to gain market share." (S3 _M)**	"This packaging was unique and was attributed to brand 3. According to female consumers, 'No other brand could have done it except brand 3.'" (S3 _M)	"It is a commercial and financial success because we reached and even exceeded targets." (S3 _M)	"They have already been assigned to other projects. Thanks to this success, they are working on other skincare and fragrance packaging, and they have been briefed for merchandising tools." (S3 _M)
S4	"Market share results are positive." (S4 _M)**	"They appreciated the functional, practical and modern aspect of it. A little piece of art, golden, still quite luxurious." (S4 _M)	"It was below the profitability target." (S4 _M)	"We are now working together on a new makeup powder compact design." (S4 _M)
F1	"Was it in line with the objectives? No. It was a partial success." (F1 _M)***	"A bottle like this one cannot please everyone." (F1 _M)	"In terms of margins, it was positive." (F1 _M)	"We only worked together on an extension project for the same fragrance. We have not been selected to design their new fragrance." (F1 _M)
F2	"Our target was to be in the top 10 of fragrances during the launch." (F2 _M) Not confirmed by panel data**	A: "Did you organize consumer tests?" F2 _M : "Concerning the bottle design? No."	"We improved our profitability." (F2 _M)	"No new project has been developed with him." (F2 _M)
F3	"It was below our expectations. We did not achieve the objectives initially set." (F3 _M)**	"The bottle design was well perceived." (F3 _M)	"It was below our expectations. We did not achieve the objectives initially set." (F3 _M)	"No future collaboration is planned with our brand." (F3 _M)
F4	"There was no objective in terms of market share." (F4 _M)***	A: "Did you organize consumer tests on the bottle design?" F4 _M : "No, and it was an asset."	"Did we reach the margin target? Yes." (F4 _M)	Future collaboration was considered, but no new product is under development with this agency or has been launched so far.
F5	"The project did not meet the objectives of business performance." (F5 _M)***	-	"The project did not meet the objectives of business performance." (F5 _M)	"No new project is planned. We have not been working for them for many months." (D5 _M)

*Success cases were defined as cases that met at least three of these criteria. Failure cases were defined as cases that met none or only one of these criteria.

**Information was checked using panel data.

***Panel data provided by NPD Group not available for this brand in years N and N+1.

Table 4 Influence of Previous Relationship and Contact Authority on Relationship Quality

Influence of ... on relationship quality	Quotation
<i>Previous Relationship</i>	I wanted to work with people I trusted. (F1 _M). We have been working with her for years... In terms of the smoothness of the relationship, it was much easier, and it was very helpful (S4 _M).
<i>Contact Authority</i>	There was a close relationship between the marketing director and us, and so we worked twice as hard (...) (S3 _D). The marketing director managed the design of the bottle directly. She bypassed the established order because product managers are usually assigned to it. But, for us, it was far more efficient (F1 _D). I am sure that the shorter the decision-making process, the smoother the relationship, because it avoids having 25 different people giving their advice and then changing their minds. So, yes, I think it clearly helped (F4 _M).

Table 5 Influence of Source of Design Expertise on the Selection Process

Source of Design Expertise	Quotation
<i>Customer-based</i>	I knew precisely what I expected from the designer. Otherwise, if I hadn't had the idea, I would have hired a famous designer (F1 _M).
<i>Process-based</i>	We wanted to build a new strategy for the brand... We thought that it could be beneficial to work with a design agency that had previously worked on a new brand design (S2 _M).
<i>Star-based</i>	The impetus for this project was primarily the desire to work with designer X... X is an artist... He creates so much out of nothing. He enjoys creating innovative things that have never existed before (F2 _M). He is a famous designer (...) We wanted to work with someone who has a new and original approach, (...) who never designed a fragrance bottle (F3 _M).

Table 6 Involvement of the External Designers in Each Stage of the NPD Process

NPD stages	Identification of the Need	Concept Generation	Early Design and Development	Late Design and Development	Launch
Design agency					
Process-based					
S1		x	x	x	x
S2		x	x	x	x
Star-based					
F2			x		x
F3			x	x	x
Customer-based					
S3			x	x	
S4			x		
F1*			x	x*	
F4			x		
F5			x		

* This specific case is explained by the absence of internal engineers in the client company.

Table 7 Influence of the Source of Design Expertise on the Number of NPD Stages Involving Designer

Source of design expertise	Quotation
<i>Process-based</i>	<p><u>Concept Stage</u>. First of all, we made the brief (...). We described the brand positioning and the brand philosophy. Then, we had a discussion with the agency about the new packaging (S1_M). We helped them to define new objectives for the brand ... We deeply analyzed the brand through what we call a 'brand platform.' Sometimes there already is one, but in this case, there wasn't. We thus got them to trust us, telling them, "We will bring out the main features of this brand" (S1_D).</p> <p>The brief was loose in terms of final object but tight concerning the high-end jewelry universe (...) The concept was developed thanks to the agency's "fragrance-jewel" proposition (S2_M). We suggested the concept of "fragrance-jewel" and its territory (S2_D).</p> <p><u>Late Design Stage</u>. Concerning the design, glass bottle production and all the elements, we were responsible for; there was extreme rigor around quality. On top of our creative work, we also referred them to suppliers (S1_D).</p> <p>Our job is to challenge the engineers, not the opposite. We must find ways to achieve the best possible quality, taking into account both manufacturing costs and client budgets (S2_D).</p>
<i>Star-based</i>	<p><u>Late Design Stage</u>. The agency intervened when we were stuck industrially to give us its impressions in terms of feasibility and of aesthetic adaptation (...) The agency was very present and very involved not only in the early design stage (F3_M). After, in the industrialization phase, I always try to push the technical limits to the maximum. This was particularly true on this project (F3_D).</p> <p><u>Launch Stage</u>. Journalists are pleased to interview a star and to ask him questions directly. It is like a press event with guest stars, and therefore it ensures broad media coverage (F2_M).</p>

Table 8 Link between the Number of NPD Stages Involving Designer and NPD Success

NPD Stages	SUCCESS				FAILURE				
	S1	S2	S3	S4	F1	F2	F3	F4	F5
Identification of the Need									
Concept Generation	x	x							
Early Design	x	x	x	x	x	x	x	x	x
Late Design	x	x	x		(x*)		(x**)		
Launch	x	x				x	x		

* Total Delegation. No engineering department in the marketing department's company.

** Partial Integration of Designer. Consulting role.

Table 9 Complex Solution to Truth Table Minimization

Outcome	Causal configuration, coverage and consistency	Raw coverage*	Unique coverage**	Consistency
NPD Success	Model: npdsuccess = f(dsgncommit, prevrel, npdstage, bdcontact)			
	npdstage*dsgncommit*bdcontact	0.75	0.25	1
	prevrel*dsgncommit*bdcontact	0.75	0.25	1
	solution coverage: 1.00; solution consistency: 1.00			
NPD Failure	Model: npdfailure = f(npdstage, prevrel, dsgncommit)			
	~prevrel*~dsgncommit*~npdstage	0.6	0.6	1
	npdstage*~dsgncommit*bdcontact	0.4	0.4	1
	solution coverage: 1.00; solution consistency: 1.00			
	Causal configuration, coverage and consistency including source of design expertise	Raw coverage	Unique coverage	Consistency
NPD Success	Model: npdsuccess = f(npdstage, starag, customag, processag, prevrel, dsgncommit, bdcontact)			
	npdstage*~starag*~customag*processag*dsgncommit*bdcontact	0.5	0.5	1
	~starag*customag*~processag*prevrel*dsgncommit*bdcontact	0.5	0.5	1
	solution coverage: 1.00; solution consistency: 1.00			
NPD Failure	Model: npdfailure = f(npdstage, starag, customag, processag, prevrel, dsgncommit, bdcontact)			
	npdstage*starag*~customag*~processag*~dsgncommit*bdcontact	0.4	0.4	1
	~npdstage*~starag*customag*~processag*~prevrel*~dsgncommit	0.6	0.6	1
	solution coverage: 1.00; solution consistency: 1.00			

Notes: bdcommit=designer brand commitment; prevrel=previous relationship; NPD stages=number of NPD stages involving designer; contact=contact authority; starag=star-based external design; customag=customer-based external design; processag=process-based external design; ~ is absence of the driver

* Raw coverage is the extent to which each combination can explain the outcome; ** Unique coverage is the proportion of cases that can be explained exclusively by that combination

Table 10 Pathways of NPD Success

	NPD Success	NPD Failure
Combination of drivers		
Contact authority*Designer brand commitment*Number of NPD stages involving designer	x	
Previous relationship*Contact authority*Designer brand commitment	x	
Contact authority*Lack of designer brand commitment*Number of NPD stages involving designer		x
Combination of drivers including source of design expertise		
<i>Process-based</i> external design* Contact authority*Designer brand commitment* Number of NPD stages involving designer	x	
<i>Customer-based</i> external design* Previous relationship*Contact authority*Designer brand commitment	x	
<i>Star-based</i> external design*Contact authority* Number of NPD stages involving designer		x

Endnotes

ⁱ Throughout the article, the expressions “external design” and “external designers” are used interchangeably.

ⁱⁱ www.msi.org/uploads/files/MSI_RP14-16.pdf

ⁱⁱⁱ If membership in a specific category is binary (i.e., the cases are either members or nonmembers of this category), the respective set is called a “crisp set” (Ragin, 2008).

^{iv} The classification of the source of design expertise was built on the typology of Abecassis-Moedas et al. (2012) and based on designers’ quotations triangulated with their websites and the professional press (Appendix C). It was double-coded by two of the authors.

^v We thank one of the reviewers for raising this point.