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Innovating the product innovation process to enable co-creation

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Organizations now look beyond their boundaries to locate NPD resources among suppliers, lead users, customers, and consumers. Consumer involvement in an innovation process implies considerable changes in traditional innovation practice and management. Consumers become partners in co-creation, a form of open innovation, and not mere objects of study. However, what is little known is how managers can innovate to enable co-creation. This paper presents an in-depth, single case study of a global confectionery brand and its multinational owner. We discuss the co-creation process undertaken to innovate both the product and the innovation process itself. We propose a process for new product development and discuss changes implicit with its adoption.

1. Introduction

A significant challenge for firms is to innovate successfully (Evanschitzky et al., 2012). Despite the focus on improving the innovation process, anticipated improvements remain elusive (Kyriakopoulos et al., 2016), and innovation remains a high-risk activity (Slater et al., 2014). The development of relationships, collaborations, and networks (Nardi et al., 2019), epitomized by open innovation and co-creation (Zynga et al., 2018), has emerged as a response.

Extending participation in innovation activities beyond the boundaries of the firm to include customers (Gemser and Perks, 2015), regular, core and lead users (Bogers et al., 2010; Busser and Shulga, 2018; Wang et al., 2020), and suppliers are commonplace

in Business-to-Business (B2B) markets (Eggert et al., 2018). However, studies say little about changing long-standing closed innovation processes to accommodate co-creation (Zynga et al., 2018) and the functioning of customer interaction in such a process (Nardi et al., 2019). Earlier work focused on the use of technology for interaction (Dahlander and Magnusson, 2008) and mechanisms to support customer innovation, including toolkits (Franke and Piller, 2004), but not the practice of joint innovation activities (Gemser and Perks, 2015) or managing actors in a change process (Ramaswamy and Ozcan, 2020). The management of this new form of open innovation process is frequently overlooked (Zynga et al., 2018), and our collective knowledge of the effectiveness, challenges, and solutions for consumer participation in NPD is scant (Chang and Taylor,

2016). The problem lies in anticipating the managerial issues inherent in changing the innovation process from closed to co-creative.

Understanding the conditions behind setting up, developing and managing a new co-creative NPD process with consumers remains slim (Zynga et al., 2018; Loureiro et al., 2020). We address this research gap and focus on the NPD co-creation process in which consumers represent 'active' participants working collaboratively with the organization. We address the following research question: *How is the transition to co-creation with consumers successfully managed in new product development?*

We use a rich case study to show how a global confectionery brand innovated both products and the innovation process by integrating and managing co-creation with consumers. First, our case study shows how a successful firm is developing an interactive consumer co-creation approach to NPD, setting the conditions in place for successful co-creation, and gaining organizational legitimacy for the new process. Second, we develop a framework that identifies the constituent activities of the change process and managerial activities required to enable co-creation for NPD.

2. Theoretical background and literature review

2.1. Product innovation process

Successful new products require the delivery of consumer utility (Roberts et al., 2017; Sheth, 2020). To achieve this, contemporary thinking reveals a shift towards an ecosystem perspective (Hienerth et al., 2014) and 'living labs' that involve the integration of co-creation processes with users to achieve innovation outcomes (Leminen et al., 2019). Interestingly, this approach is seen as relevant for later-stage innovation consistent with the positioning of the project discussed here. This ecosystem perspective involves a broad range of actors (Gemser and Perks, 2015; Loureiro et al., 2020). The 'opening' of product innovation transforms the process from being one that is vertically integrated and in-house to a distributed innovation process reliant on managing knowledge flows across organizational boundaries (Chesbrough, 2017). Representing a complex form of co-creation, 'living labs [are] physical regions or virtual realities in which stakeholders form public-private-people partnerships (4Ps) of firms, public agencies, universities, institutes, and users all collaborating for creation, prototyping, validating, and testing of new technologies, services, products, and systems in real-life environments' (Leminen et al., 2019, p. 1). Whilst not specifically our object of interest in this study, the work on ecosystems and 'living labs' mirror the fact that an organization with a closed innovation process has opportunities to embrace outside actors in its innovation process (Scott et al., 2021), changing not just the process but the organization as well. Commensurately, these opportunities increase when firms leverage consumers in the NPD process.

The NPD process stages of ideation, concept development, product design, testing and launch may benefit from consumer input as information, as resources and as co-developers (Cui and Wu, 2017; Nardi et al., 2019). However, such a market orientation is often reactive, seeing consumers as information sources (Cui and Wu, 2017). Understanding of the actor and managing their role in co-creation is crucially missing (Ramaswamy and Ozcan, 2020), creating a dilemma as to how a firm with a traditional innovation process can successfully manage co-creation with consumers, and create a more open model of innovation?

There is a need to understand better the person behind the data (Roberts and Piller, 2016), for which there is a lack of guidance and supporting frameworks (Zynga et al., 2018). For example, the lack of knowledge on managing consumer involvement in NPD has led to accusations that we know little about when open innovation using co-creation is superior to a closed model, managing increased administrative and organizational complexity, and cultural issues (Heimstädt and Reischauer, 2019; Manzini et al., 2017). Work to date has focused predominantly on when customer participation is valuable in enhancing NPD performance. Customer knowledge becomes an input into NPD, rather than managing that knowledge in the NPD process (see Chang and Taylor, 2016; Nardi et al., 2019). Co-creation relationships are not merely dyadic but involve multiple interactions between different actors (Babu et al., 2020, Ramaswamy and Ozcan, 2020), and whose motives (Roberts et al., 2014) or sense of value (De Silva and Wright, 2019) differ. Consequently, making co-creation 'stick' relies on unlocking the management problem behind changing the firm to actively involve customers in NPD and managing their function in that process (Zynga et al., 2018).

2.2. Active user involvement in NPD

Value is mutually created and is perceived by the customer (Powell and Hughes, 2016). Customer input into an innovation process co-opts their resources in the co-creation of innovation and can raise benefits and reduce costs relative to perceived value (Aarikka-Stenroos and Jaakkola, 2012). In

consumer co-creation, consumers contribute to and select elements of the product offering (Chang and Taylor, 2016; Cui and Wu, 2017). Success relies on managing the 'interacted actor' (Ramaswamy and Ozcan, 2020) as the critical stakeholder (Loureiro et al., 2020). Reviews of users as innovators (Bogers et al., 2010) call for research on the definition of users, and more recently their roles and motivations (Roberts et al., 2014; Wang et al., 2020). Now there is a need to understand how to manage the change process involving co-creation, and how to move to an open innovation model (Zynga et al., 2018). To date, studies focus on practices (Kowalkowski et al., 2012), such as resourcing roles (Aarikka-Stenroos and Jaakkola, 2012), agility (Sjödin et al., 2020) and communication (Roosens et al., 2019), but not the necessary organizational changes or the firm's management and innovation of the co-creation process itself (Zynga et al., 2018).

Organizational thinking constrains managers (Kyriakopoulos et al., 2016), yet open innovation relies on senior management empowering the change process (Singh et al., 2021). Consumer involvement can enable knowledge sources more efficiently into an innovation process unfiltered by managerial biases. Therefore, more fluid organizational boundaries alter the constraints on innovation (Zynga et al., 2018); creating products with greater customization to the needs of consumers (Eggert et al., 2018; Sheth, 2020); with solutions better suited for continuing adaptation (Bogers et al., 2010). The establishment of a forum for exchanging ideas, what Payne et al. (2008) term 'encounter processes'; enabling dialogue between the customer and the firm. Nevertheless, studies on *how* firms' interface with consumers in the context of innovation and process management are scarce (Chang and Taylor, 2016; Cui and Wu, 2017), studies on how to change the process rarer still (Zynga et al., 2018).

The current body of literature is still mostly pre-theoretical and needs to be enriched by further case study work. Thus, our study seeks to extend this with rich insight into the process of co-creation with consumers for product innovation, developing a framework to enable and guide the management of co-creation in changing the innovation process.

3. Methods

We investigate how a global confectionery brand leader, anonymously named *Auburn*, developed co-creation with consumers for NPD. Auburn manufactures and supplies confectionery through B2B channels and develops and markets products to the end consumer (B2C) market. These situations are challenging because of the distance between firms and consumers (Payne et al., 2008).

A single case study reveals greater detail about how this brand owner integrated consumers into the process. This approach is also suitable to derive emerging themes and provide revelatory insights (Yin, 2003). A single case facilitates access to important and rich information (Tran et al., 2019) by focusing time and effort solely on one case and forming trustful relationships with senior managers (Hughes and Perrons, 2011; Noke et al., 2008).

3.1. Case firm: Auburn and Project Kick-Start

Auburn has strong foundations in R&D, innovation is a core strength. The study examined a unique project involving a co-creation approach, working directly with consumers, and including the development of new and improved products, the regeneration and repositioning of an existing brand, engaging the consumer from ideation to commercialization. Their leading brand, a snack product, traded well. However, counterbalancing health issues caused concerns. A specific innovation project known as 'Project Kick-Start' was identified for study. Their success was attributed to the co-creation process and the development of collaborative relationships with consumers.

3.2. Data collection, triangulation and analysis process

In-depth, semi-structured interviews with eight managers responsible for marketing (products) and innovation (processes) and four external marketing consultants (process, research, branding and change activities) (Table 1) were our primary source of data.

Table 1. Respondents in Project Kick-Start

Participants	Function
A	Innovation Strategist
B	Head of Innovation
C	Marketing Manager
D	Brand Planning Manager
E	Innovation Planner
F	Innovation Consultant (Agency)
G	Innovation Consultant (Agency)
H	Market Researcher (Agency)
I	Brand Strategy Consultant (Agency)
J	Brand Manager
K	Brand Manager
L	Head of Brand Marketing

Respondents represented different levels of management and provided their perspectives on consumer co-creation. As a longitudinal study, the 12 respondents were interviewed repeatedly, interviews lasted between two hours to half a day. Participant observation and field notes were also made during meetings and co-creation activities, including recording activities and personal reflections. Company documents including internal and external marketing communications, policy and strategy documents, training and professional development analyses, and other collateral (e.g., secondary market data reports) were consulted to expand our triangulation efforts (see Appendix A). Our efforts extend typical triangulation good practice (e.g., Dąbrowska et al., 2019; Tran et al., 2019). Appendix A provides information on our triangulation sources and the order in which they supported our coding. For instance, in Appendix A, we list the triangulation sources in the order by which they informed our triangulation procedure. Every code is triangulated by a minimum of three triangulation sources while each code is also generated from at least two data sources. This means that every code is robustly triangulated. Moreover, most quotes subsequently used in the Findings section of our manuscript are from at least two sources or where they are not, we point to additional information (e.g., awards).

We triangulated interview insights and comments made between managers, external consultants on the Kick-Start project, and co-creation participants; we compared what we were learning against internal and external company documents and archival data (where available, e.g., market research reports and market data) to triangulate with the interview data; we sought additional evidence of the veracity of co-creation activities where it may be found (e.g., awards); and we discussed our analyses with participants to ensure accurate use of their interview evidence. A process of comparison resulted in greater insight and confirmation of the findings. These efforts ensured as best as possible that we did not make spurious interpretations, had thoroughly triangulated informant statements, and safeguarded against undue over-generalization of individual informants' perspectives (Miles and Huberman, 1994; Pentland, 1999; Tran et al., 2019; Yin, 2003). This enriched our understanding of the firm's co-creation activities and its management and enabled robust triangulation of the accuracy, meaning and interpretation of primary interview data and our coding.

We recorded, transcribed, categorized, and coded interviews and observations following the process outlined by Gioia et al. (2012), which is designed to provide rigor in inductive research (see Appendix A).

This process allowed empirical observations, theoretical understanding, and insights to develop inductively, and aggregate dimensions to be developed to present the findings. Throughout the research, emerging insights were discussed with participants to ensure consistent understanding and interpretation.

4. Results

The firm considered co-creation a new initiative, requiring changes to the traditional NPD process, its organizational routines and structures. Thus, we draw on the theoretical lenses of change management (Armenakis and Bedeian, 1999), formalised in the context of open innovation by Zynga et al. (2018) as consisting of three generic phases: unfreezing, moving and institutionalizing (Kotter, 1996), in reporting our findings below. Piller and Luttgens stress the necessity of having a clearly defined process for innovation and open innovation specifically (Zynga et al., 2018). Table 2 also shows how the process is underpinned by the microfoundations of processes, individual activities and structures (Teece, 2007; Zynga et al., 2018), aiding the firm in implementing co-creation.

4.1. Stage one: unfreezing: preparing the organization for change

Although its commercial performance was satisfactory, senior managers were cautious about creeping complacency. Urgency was established using the name Project Kick-Start. In a crowded marketplace with powerful intermediaries, and more demanding consumers, product innovation also required process innovation. The dynamics of the trading environment prompted a new, radical, approach. This was reflected in rising internal concerns:

It was more of an instinct of everyone that came on the team that something wasn't right. There was this huge brand, it was doing well, but there had to be more to go for. (C)

I do believe the area we are going to develop is this non-traditional approach because the future is going to be different. We don't quite know what it is going to be, but we know the current business model is not going to stand the test of time. (B)

Senior managers recognised the need to open up the innovation process and build relationships with intermediaries and end consumers, valuable insights being seen to reside in consumer relationships.

Table 2. Moving to open innovation: microfoundations and enablers

Microfoundations	NPD process					
	Staff and Consumer selection	Ideation	Concept development	Selection	Pre-Launch	Launch & Postlaunch
Individuals	Kick-Start Project Team	Create a positive environment and a 'climate of equals' before commencing	Gather and collate 'buddy' artifacts as a stimulus for concept development	Engagement of consumers in selecting concepts for product development.	Co-creating ideas for marketing/brand communications that challenge the norm/ past.	Post-launch activities and feedback involving website/ forums
	Champions. Consultants					
	Consumers					
	Innovative, creative personalities (e.g., opinion formers)	Managers and consumers working in same space (on or off-site)	Consumers as co-creation partners			
	Target markets					
	Non-related inspirers					
Structures	Management selection, training, and development.	Planned group co-creation activities	Build/manage pipeline of development opportunities	Use of conventional concept testing and market research techniques	Joint team of consumers, marketing agency, and brand team	Performance metrics
						Project review
	Cross functional collaboration	Individual, dyadic co-creation activities	Regular scheduled co-creation team meetings			
	Leadership roles; Head of Innovation and Innovation Strategist	Role of working environment				
		Develop discussion platforms				
Comments/Rationale	Improve market sensing and ability to visualize market and product opportunities	Access consumer creativity. Develop dialogue	Need to maintain management commitment	Continuing need to reconcile tension of time required versus the need for results	Create new perspectives for brand image, marketing communications, and product launch	Demonstrate commercial success and value of the new approach

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Bestowing competitive advantage that cannot be easily replicated.

The core Kick-Start project team comprised members from marketing and innovation (Table 1) and were responsible for the unfreezing process and moving the firm to a more open, co-creative approach. Stakeholder interviews discussing the project's principles were conducted by the consultants supporting Project Kick-Start, with fifty respondents in senior and influential roles. This helped to communicate the need for change and form a coalition to support and direct the innovation effort. However, the specifics of the innovation process remained the responsibility of the project team.

This step helped them clarify the issues facing the organization, develop an innovation agenda around consumer co-creation, respond to changes in contemporary consumer culture, and set a brand vision.

The team discussed the possibility of opening the NPD process with external agencies to allow more 'active' consumer involvement. Tasked with thinking radically about their approach to innovation led to the conviction that:

The marketing-savvy consumer could contribute in a more dynamic way to the innovation process than we had previously realized. (D)

Although the team was highly progressive, traditional modes of consumer involvement (e.g., focus groups) were well-understood and embedded in the organization. Shifting away from such approaches was not consistent with established procedures and systems:

In the past, we have used very traditional methods; we still have a lot of numbers floating around, we can slice and dice our numbers any which way you like, but rarely if ever I have seen the answer coming from a set of numbers. (C)

As the project gained momentum, employees from other departments were included to champion the project within their divisions, acting as advocates for the new co-creation approach and instil understanding more widely within the firm.

Formal development initiatives were put in place by the project team to support managers, sometimes termed 'enabling capabilities' (Urbinati et al., 2018). This helped them to prepare and unfreeze the firm anticipating change. For example, managers were trained as facilitators; in the use of creative problem-solving techniques and ethnographic research, encouraging empathetic understanding and knowledge of the consumer. Thus, in research terms, managers could serve as active participants and as passive observers:

We were trying to make the team more insightful... The world of insights is collaborative; it is best done in teams, and they can come from anywhere. We tried to get the team to be more intuitive in how they reacted to consumers. We used drama-based techniques to try and develop people's intuitive skills. (I)

Organizational members involved in co-creation also developed their interpersonal skills, such as in storytelling and drama. Managers were able to vocalize and make sense of the information, communicating it within the firm (e.g., storyboards). These findings support the view that the appropriate attitudinal orientation of staff is essential for co-creation (Palmer and Wilson, 2009), addressed by investment in developing skills and capabilities.

Following initial development, detailed planning was undertaken to initiate the research process itself. The teams desired a positive atmosphere for co-creation, advocated as a suitable context for co-creation (Bowen and Schneider, 2014).

You have to create the right context and climate for active involvement. (F)

We wanted an environment where people would be relaxed and informal and where it would be quite inspiring. (E)

Consumers may feel inhibited in unfamiliar surroundings and unable to suspend the familiar transactional relationship. In an informal, relaxed environment, human interaction becomes freer flowing. For example, one of the first group meetings took place at a zoo away from the organization. Removing managers from the office also helped break down boundaries, blurring perceptions of hierarchy, power and authority. Thus, 'Turning customers into innovators requires no less than a radical change in mind-set' (Thomke and von Hippel 2002, p. 78).

4.2. Stage two: moving: co-creation activities

At this stage, the company experimented with two primary forms of consumer co-creation activities: (1) planned joint innovation activities with groups of consumers and (2) dyadic long-term collaborative relationships with individual consumers.

An innovation consultancy, highly experienced in consumer marketing and psychology, was used to recruit consumers who were not typical users. At no point were incentives offered. The consultancy acted as scouts, seeking consumers who were ahead of market trends, demonstrating high levels of innovativeness and creativity. Consumers with the potential

to create and select new product concepts. In the early stages, a range of formal assessment tools were used to select participants, not solely based on their affiliation with the products. Ideal characteristics included: ahead in adoption, respected by peers, connected socially, vocal, opinionated, well-travelled, and highly exposed to media. Identifying consumer-innovators was difficult:

Lead users in the traditional sense are difficult to identify in mass consumer markets; we can identify consumers with 'innovative' and creative personalities. We believe that these consumers are best placed to work with us. They are not necessarily our target audience. (J)

This selection represents a significant contrast to the literature, with its over-riding emphasis on lead users. Auburn's managers and consultants identified a broader category of consumers, whether they were purchasers of their products or not, focusing instead on their qualities as innovative and creative personalities. Consumers more representative of the target market were selected during the later stages of the project.

4.2.1. *Planned group co-creation activities*

These involved the whole project team and consumers working jointly together in groups, meetings received considerable preparation, both in terms of location and environment and prioritization of activities and topics to be addressed. Group activities involved intense working with consumers over short periods. Group co-creation activities were an essential part of the ideation and concept development stages (Figure 1). The emphasis was placed on organizing 'up-front' ideation and creating a favourable working climate:

Making these group co-creation sessions work is less about the product category and more about the process. If you don't give them the right context to work in, they will do nothing; they will sit and argue, or chat, or refer to their current set of beliefs. (F)

The early meetings helped the project team understand it was also necessary to create the circumstances for the discussion to access the tacit knowledge of consumers. For example:

As well as seeing them, we wanted them to be quite creative, we wanted somewhere a little different from a faceless hotel room, or office, so off to the zoo it was… (E)

Removing managers from the office was necessary to support ideation at this stage:

By no means did the consumers defer to you; they just assumed that they knew as much as you and they
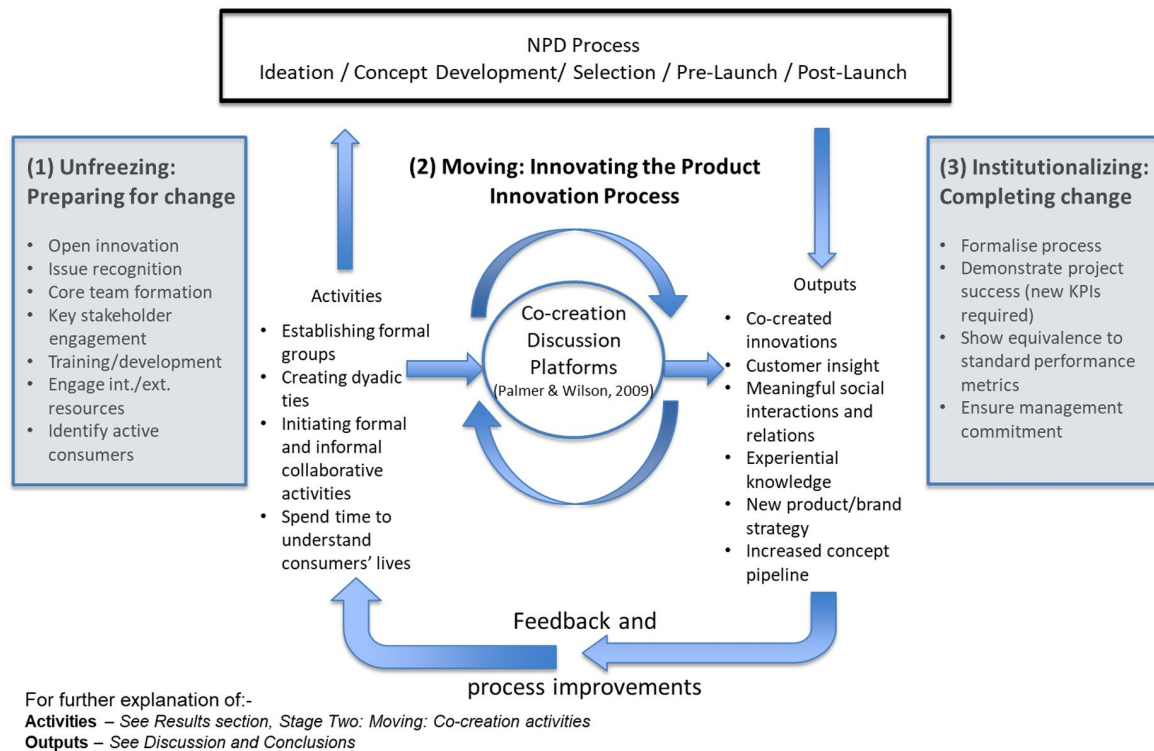

Figure 1. NPD and the change process to open innovation. After Zynga et al. (2018), Kotter (1996).

do, they just know slightly different things. This was a surprise for some people. (E)

This early groundwork proved valuable, as later consumers became even more enthusiastic in expressing their views. This fed into a positive and supportive climate. As mutual trust developed through the process, the team came to understand more about the consumers, who became in turn a more insightful resource.

4.2.2. Individual co-creation activities

A second strategy of the project team was to develop dyadic relationships with individuals. Managers referred to this as the 'consumer friend/buddy' approach. Project team managers were encouraged to form strong, professional, one-to-one relationships with individual consumers. They met every few weeks, often at neutral, informal venues throughout the project. In contrast to the task-oriented work, the relationship was intended to be an informal, social process to access tacit knowledge (Nonaka and Takeuchi, 1995) and improve understanding of the innovation–customer interface (Barczak, 2012). The consumer friend was encouraged to establish the agenda of activities, often beyond the norm of the manager's domain. This allowed open and relaxed conversations to provide the manager with insight into the friend's worldview, social context, and circumstances to understand their expressed views.

Managers were encouraged to record their insights to share with the team to generate a mutual understanding of contrasting views. The consumer friend scheme ran throughout the project, and this initiative was a great success:

Immersing the team in consumers' lives gave us a lot more than your standard insights. I mean just being with them, working with them, helped the team to see how the brand should work, how consumers see it, you know that comes from regular contact with people. (E)

4.3. Stage three: institutionalizing

Zynga et al. (2018) describe this stage of the change process as being characterized by larger efforts to move and formalize activities and routines. Our findings evidenced the use of regular team meetings and more formal cross-project structures. However, an area where the project team felt the need for further change to help with the institutionalization process were in metrics and evaluation.

Group co-creation activities were positively perceived, justifying a substantial investment of resources by the company, although some of the most valuable outputs of the process are intangible. These do not reconcile to conventional reporting systems with a consequent reluctance to adopt such techniques. However, traditional modes of consumer involvement (e.g., focus groups) are well understood. The team resorted on occasions to this 'security blanket' research (Day, 1994), to both compensate for and complement the experimental approach to institutionalizing the open innovation process (see Figure 1).

There was an underlying, tacit, but increasingly stated, requirement for results. This highlights two key features. The development team is creative and innovative, but business pressures require project delivery, sometimes leading to tensions when the first few sessions failed to generate meaningful output. Time was needed. But in the corporate world, time is often in short supply. This reflects the challenge of convincing stakeholders of the potential of new techniques whilst moving the firm towards institutionalization.

More detailed insight into activities at each stage of the NPD process can be seen in Table 2. The final stage, new product launch, played a vital role in conveying information and in positioning the product, but remains both a key managerial challenge (Roberts et al., 2017) and an opportunity. As the Head of Brand Marketing noted:

With a creative process like advertising, you can start with a blank piece of paper and take these brands that have been around for years in all sorts of different directions. What this work with consumers did was give us a very clear direction about the territory we needed to be in. (L)

Their insights proved particularly powerful, shaping an award-winning promotional campaign featuring an online game that went viral, gaining millions of hits online. This achievement was acclaimed in the marketing trade press; the campaign exceeded company expectations.

5. Discussion and conclusions

Understanding of the management of co-creation remains deficient (Evanschitzky et al., 2012; Chang and Taylor, 2016). We contribute to the innovation co-creation literature by presenting an in-depth single case analysis that yields further insight and a framework for enabling co-creation. There are limitations to generalization using a single case. In addressing this challenge, we adopt the approach of Aarikka-Stenroos and Jaakkola (2012) and Tran et al. (2019) in proposing a tentative model (Figure 1) to inform

further work and to provide managers with action-able output and scholars with inputs to a mid-range theory of innovating and managing the innovation process for co-creation.

The model is developed from an understanding of the literature supported by our findings and insights into practice. Together with Table 2, this identifies the 'how' and 'why' for innovating the process to enable co-creation. Figure 1 focuses on the actors and actions performed, providing a complete explanation. The feedback loop offers the opportunity for continual process improvement. Examples include the further development of the 'buddy' process of ongoing informal engagement using diaries and storyboards to make tangible the emerging data.

The starting point to integrate consumers into the NPD process is the induction of internal and external actors. In Auburn, pre-project work involved a careful definition of issues and objectives with broad internal consultation in achieving wider commitment and internal selling. Determining the purpose of the co-creation activities influences the choice of actor, type of relationship, activities, and organizational scope. Selecting both external agencies and consumers for their ability to be creative and innovative proved challenging and involved more than just connecting with target consumers or lead users. Consumers were selected based on the purpose of the activity and their propensity for creativity and innovativeness. In later stages target market consumers assumed a higher priority.

A series of formal/informal activities, episodic/ongoing, and long/short-term were put in place to enable interaction and relational development. These are encounter processes (Payne et al., 2008) or discussion platforms (Palmer and Wilson, 2009), which facilitate social interaction and enable sharing knowledge. Selected team members received training in facilitation, interpersonal skills and research methods, acting as both participants and reflective observers in co-creation activities. The relationships and closeness needed for co-creation require time to develop (Perks et al., 2012); our findings suggest that closeness is not just nearness (structural) but also richness (content). Fruitful relationships lead to not just contact but dialogue and insight. Social interaction, and the context in which this occurs, can enhance this relationship value.

The first three deliverables of co-creation (Figure 1), categorized into outputs classed as customer insight, meaningful social interactions and relations, and experiential knowledge, are initially difficult for managers to justify because they do not strictly fit into classic metrics. This necessitates the development of new metrics and key performance indicators (KPIs). As the product development and test phases approach, more clearly defined benefits accrue, making measurement more feasible and manageable. For *customer insight*, staff could identify ideas outside their frame of reference, escaping the 'tyranny of served markets' to co-create more value (Prahalad and Ramaswamy, 2004). For *meaningful social interactions and relations*, this case supports the value of extensive social interaction and the development of social networks essential to innovating the product innovation process, enabling tacit knowledge and the broader experience of consumers to be accessed. This activity unlocks intriguing possibilities in understanding the cultural context of consumption. The design, formal or informal, of the dialogue process/platforms, is supported by our findings. For *experiential knowledge*, by accessing the deeper well of feelings, emotions, and attitudes within the context of consumption, staff gained more significant insights to embed their growing understanding of customers' lives. The process of dialogue and socialization repeated across all three of these outputs benefited Auburn as the project matured, leading to two additional outputs: *new product and brand strategy* and *increased concept pipeline*. With its innovation process, built around co-creation, Auburn improved its capabilities. Auburn became better able to increase its pipeline of new product and brand concepts, and better able to filter out unproductive ones, and devise better new product and brand strategies to reach customers in more meaningful and emotionally relevant ways. Unlike studies that use technology as a conduit for consumer co-creation, this study captures the complex human interactions and social context of consumers. Our study shows that this type of creative, collaborative, engagement that co-creation typifies is as much about organizational change as it is about the product, with the potential for more extensive organizational transformation and innovating of the product innovation process itself.

5.1. Managerial implications

Our contribution of a framework and set of guidelines gives practical guidance about the management of co-creation. Managers need to re-evaluate the NPD process stages and build the capabilities that enable consumer co-creation. Specifically, our insights suggest this occurs in the ideation, concept development, and selection stages.

Co-creation requires a change in managerial mindset. This means relinquishing control of parts of the NPD process to external participants. Reluctance to change at both the personal and organizational level can hinder the adoption of new techniques. Thus, the

internal sell-in of benefits and having a co-creation champion are worthwhile steps. Managers should actively manage the boundary-spanning activities of co-creation champions further to facilitate the development of the NPD process.

The breaking down of roles is vital in generating interaction, especially during the ideation stage. In the concept development stage, managers must adopt the role of developer and active listener to interpret, sense-make and formalize knowledge. Job roles and definitions became blurred across conventional departmental boundaries, raising issues of responsibility, coordination, authority and self-interest.

To enable managers to make the necessary changes, training is required. Internal actors should have a blend of research and interpersonal skills, enabling them to act both as participants and observers (Roberts et al., 2016). Finally, developing the microfoundations (Aarikka-Stenroos and Jaakkola, 2012) in terms of process, individuals and structures is essential if the firm is to implement co-creation and build an enduring open innovation capability.

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APPENDIX A
Data structure and data analysis process (Adapted from Gioia et al., 2012)

Stage 1: Guiding research question and interviews

- Research question: how is co-creation with consumers successfully managed in new product development (NPD)?
- Multiple data sources are used to answer the research question, summarized in the table below. The principal data source being semi-structured interviews designed to obtain both retrospective and real-time accounts by people experiencing the phenomenon of theoretical interest.

Stage 2: Analysis
1st order concepts:

- Multiple categories/codes (using the informants' terms) emerge from the interviews
- Category reduction, seek similarities and differences among the many categories

2nd order concepts:

- Conduct further interviews
- Look for theoretical referents.
- Develop a workable set of themes and concepts
- Coder discussion and convergence
- Distil down into aggregate dimensions

Stage 3: Building the data structure to progress from raw data to terms and themes in conducting the analyses

1st order concepts	2nd order themes	Aggregate dimensions	Data source(s)	Triangulation sources (in order)
• Crowded, competitive market 'Distance' between Auburn and consumer caused by retailers • Marketing-savvy consumers; lead users challenging to identify; needed fresh eyes • The shift in focus from traditional to new marketing and innovation methods	• Develop windows on the future • Innovative and creative consumers over and above lead users or target consumers	• Innovating the NPD process	1. Interviews 2. External agencies	1. Company documents: Internal and external marketing communications 2. Interviews 3. Secondary data on market trends 4. Company website
• Planned co-creation activities with consumers • Initial collaboration but with different consumers working on different specific project-related takes • The precursor to developing long-term collaborative relationships with consumers • Removing managers from the 'office'	• Creating a positive working climate for co-creation • Active throughout each stage of NPD	• Group co-creation activities	1. Interviews Participant observation 2. Co-creation 3. workshop	1. Interviews 2. Internal company documents: Policy and strategy documents 3. External agencies
• Emergent process in which the consumer took the lead • Consumer buddy scheme that ran throughout the entire project albeit in which meetings were periodic • Team immersion in consumers' lives	• 'Consumer buddies' • Buy-in and ownership	Developing collaborative partnerships	1. Interviews 2. External agencies	1. Internal company documents: Storyboard documents and methodologies 2. Interviews

1st order concepts	2nd order themes	Aggregate dimensions	Data source(s)	Triangulation sources (in order)
• Managers needed to develop research and interpersonal communication skills • Managers needed to develop relationship development skills	• Increasing managers' ability to be insightful	• Training and development initiatives	1. Interviews 2. External agencies	1. External agencies 2. Interviews 3. Internal company documents: Training and professional development analyses
• Need to demonstrate success against traditional marketing metrics • A problem in transferring old KPIs and identifying appropriate ones palatable to senior managers and stakeholders • Consumer input supported new internal collaboration and ideas among managers	• Informed decision-making • (Re)setting KPIs	• Evidencing benefits of the new innovation process (revised metrics in managing the open innovation process) • Overcoming challenges to institutionalizing the new process (overcoming reluctance to adopting new metrics)	1. Interviews 2. Company documents	1. Interviews 2. External agencies 3. Company documents: internal and external marketing communications and strategy documents 4. Awards