# "Managing a Systematic NSD Process Implementation: a Longitudinal Study"

#### Introduction

Services have grown to dominate output, value added and employment globally (WTO, 2017). Research into services has covered a number of fields: quality, productivity, service design; less research focuses on service innovation, often comparing services and manufacturing (Omachonu & Einspruch, 2010).

Early studies on service innovation suggested that service firms *did not innovate*, but the innovation measures used were designed to assess innovation in the manufacturing. Later studies ascertained that service firms *do innovate* but their innovation activities are "different" (Sheenan, 2006) and "hidden" (NESTA, 2008), unlike manufacturing. Omachonu and Einspruch (2010) highlight the areas in which innovation in services and manufacturing differ. These potential differences between innovation processes in services (new service development – NSD) and manufacturing (new product development - NPD) have produced a particular literature. (The terms for "product" and "service" are used here in a conventional sense, consistent with their use in much of the literature.)

#### Literature Review

### Differentiating NSD from NPD

Voss et al.'s (1992) early work intimated that the new service development (NSD) *process* is "ad hoc" and "haphazard". Voss et al. suggested that service firms particularly need formal and structured *processes* for the development of new services. Formal *processes* were needed, as service firms' innovation outputs can be rapidly copied by competitors. Sundbo's (1997) work examined how NSD *processes* are organized and

managed. Sundbo reported that service firms lack formal *processes*. Similarly, several other researchers show that service firms use *unstructured* and *informal* innovation (NSD) *processes* (de Brentani, 1993; de Jong and Vermeulen, 2003; Stevens and Dimitriadis, 2005; Gottfridsson, 2011). Bessant and Davies (2007) established that 'borrowing' systematic processes similar to those used in the manufacturing sector (NPD) may be relevant and useful in new *service* development (NSD). In contrast, another school of thought (Hipp & Grupp, 2005) argue that a new set of methodologies specifically designed and developed for the service sector should be used.

# Manufacturing: New Product Development (NPD) Process Models

Research about general new *product* development (NPD) processes in the manufacturing sector (Papastathopoulou and Hultink, 2012; Holzweissig and Rundquist, 2017) abounds. Cooper (2001) says NPD processes are key to the improvement of manufacturing's innovation productivity, as firms need a 'stream' of continuing product innovation. Producing a stream of innovatory products is itself not a sufficient goal: some at least must achieve commercial success.

There is therefore extensive research on those factors that contribute to new goods success (See, for examples, Cooper and Kleinschmidt, 1995, 1996; de Brentani, 1991, 1993; Griffin, 1997; Edvardsson et al., 2013). These "success" studies establish that market-driven processes have positive impact on innovation outcomes.

# Nature of New Product Development (NPD) Processes

Whether market-driven or not, NPD processes in the manufacturing sector are often depicted as a formal roadmap, driving a new good from an idea through to market launch (Cooper, 2001). Generally, formal NPD processes consist of sequential phases,

each followed by review points. Cooper's particular model is no exception – it is known as a "stage-gate" model. The "stages" are the key phases required in the execution of a major project, while the "gates" are the decision-making review meetings that occur at the end of each stage. Cooper's "stage-gate" model (2001) is widely referenced in the literature and there is substantial evidence that many manufacturing companies have (similar) "staged-gated" processes that allow them to manage their innovation activities effectively.

# New Service Development (NSD) process research

Research in NSD remains fragmented and underdeveloped (Kuester et al., 2013; Biemans et al., 2016). In general, the current debate divides between those who suggest that, unlike manufacturing companies, service companies do not use a structured and formal new service development process (de Brentani, 1993; Sundbo, 1997; Griffin, 1997; de Jong and Vermeulen, 2003; Stevens and Dimitriadis, 2005; Gottfridsson, 2010) and those researchers who note that the NPD models established in the manufacturing sector may be relevant and useful in new service development (Lovelock, 1984; Bessant and Davies, 2007).

Papastathopoulou and Hultink (2012) state that "After 27 years of research, this field needs to progress further. Focusing on neglected aspects of NSD...could provide the compass for future research attempts in the important and growing field of NSD." (p. 714). Two of their 'neglected aspects' of NSD research concern the nature of the firms and the markets served.

Some query if the innovation practices uncovered from studies of large firms applicable to small and medium-sized enterprises (McDermott and Prajogo, 2012). Others emphasize the need for service research into NSD within business-to-business

(B2B) services firms (Vermeulen, 2004; Droege, Hildebrand, and Forcada, 2009; Salunke et al., 2011; Toivonen and Tuominen, 2009; Kuester et al., 2013). These gaps in the literature are compounded by a lack of in-depth studies into what firms *actually do* to develop new services (much of the literature relies on surveys).

# NSD model implementation

This paper draws on several recommendations in the literature. Firstly, it utilizes a longitudinal, in-depth case study, rather than survey work. Secondly, the setting is also deliberately chosen: the under-researched area of small firms serving business markets (Biemans, et al., 2016). Thirdly, the research uses Cooper and Edgett's (1999) "stagegate" model, which has its roots in manufacturing.

The product innovation literature does report on the implementation experiences of the managers who tried the "stage-gate" methodology (Harmancioglu, et al. 2007). Cooper and Edgett's (1999) model has six stages: idea generation; preliminary investigation; business case development; test and validation; full operations, and market launch. The model's five gates are: idea screen; investigation screen; decision on the business case; post-development review, and a decision to launch. The model, the authors say, is built on "best practices" adopted in both services and manufacturing. Cooper and Edgett assume that these "best practices" lead to effective, successful development, and then launch, of new services and products.

We use Cooper and Edgett's model to unpick processes and then scaffold the learning about the new process implementation within the case study firm. Our focus is on learning from the implementation abductively and demonstrating how business service firms can organize and manage their innovation process. The study has addressed two challenges: firstly, that the limited NSD process models proposed in the literature are

often prescriptive, yet ambiguous; secondly, the literature still does not offer adequate guidance on how NSD processes can be *implemented* within service firms (Tether, 2005; Storey and Hull, 2010; Biemans et al., 2016).

We identified few studies focusing on business services and NSD process implementation, and what there is frequently focuses on large firms. Small and medium enterprises (SMEs) in particular may have an emergent need for more systematic NSD processes: as they grow to a certain size, they need to manage both the current business and explore new opportunities concurrently. This is an obvious resource 'pinch point' for a small growing firm.

This matters, as SME *service* firms are the backbone of most European economies, and in particular the UK. The little available empirical evidence suggests that SME *service* firms are not well equipped in organizing and managing their innovation process. Research has however shown that NPD processes have a direct impact on increasing productivity in the *manufacturing* sector. Given SMEs' economic importance, the question of *how can B2B services SMEs manage the implementation of a systematic NSD process*, is significant.

This research addresses two key questions: "What are the critical factors affecting the implementation of a systematic NSD process?" and "How can a B2B service SME manage NSD process implementation"? In focusing on these questions, we assume that service firms differ in their ability and capability for innovation and growth.

The particular case setting allowed observation over a period of 18 months. The focus was on the implementation of a systematic NSD process, drawing on the experiences and perspectives of the participants in terms of how to organize and manage a fresh NSD methodology.

### Methodology

This research follows the approach suggested by Berglund (2004). Berglund's methodological suggestion is to gain interesting insights by conducting research close to a firm's normal operations, through intimate interaction with innovation participants.

Methods used in this research included participant-observation, direct-observation, interviewing participants, interviews in groups, online questionnaire and document analysis. The primary method was participant-observation. This method has its roots in ethnographic research as "[ethnographers] do not merely make observations, they also participate." (Spradley, 1980, p. 51). There is little research that uses a similar approach to study NSD processes.

Abductive analysis was applied to generated data. Timmermans and Tavory (2012, p. 180) define abductive analysis as a "qualitative data analysis approach aimed at generating creative and novel theoretical insights through a dialectic of cultivated theoretical sensitivity and methodological heuristics". In particular, abductive analysis here centred on theory construction, through repeated and close interaction with both empirical data and existing literature. Blaikie and Stacy's (1984, p. 1-11) approach to the logic of abduction were used to generate concepts. A fieldwork notebook (see Spradley, 1980) was used as a key tool to record all field interactions. A comprehensive logbook was created of the empirical material produced over the course of the project (see van Maanen, 1983).

To allow wider interpretations and insights to be developed, all those involved in the innovation practices, including decision-makers, middle managers and employees at lower hierarchical levels and the firm's external networks participated. In total there were 45 identified participants who contributed. During the research, around 100 meetings

were observed and the entire implementation of the innovation process, from initiation to launch of a new service was studied.

The aim was to understand and explain participants' perspectives; consider different experiences to innovation events, actions and situations, and unearth different insights by trying to understand (or interpret) what was happening within the context of the case study setting, and then to generate a theory or pattern.

Firstly, the data from different sources was integrated and analysed to unearth the critical factors affecting the implementation of the NSD processes in this case. Secondly, data was used to demonstrate how the challenges were overcome by the participants, in order to manage the implementation, and realize the benefits of a systematic approach.

### The case study firm

Delta, the case in point, delivers business support services to other organizations, on behalf of UK local government. Delta has been successful in its market place for over 10 years. However, the firm had not been proficient in growing other lines of business and experienced performance difficulties due to cutbacks announced by the UK government that affected its markets. During the research, Delta launched two new enterprises, Gamma and Omega. All three firms delivered B2B services and shared the same ownership, management, staff, resources and premises.

The firm's owners planned to reposition strategically and offer business services such as training, business support and consultancy, recruitment, and outsourcing to both public and private sector customers. They would do this through Delta itself, or the new related enterprises, Gamma and Omega. Delta's owners established a partnership with a local University to support the implementation of a fully integrated NSD process in order to drive business growth through B2B services.

## Analysis of the findings and discussion

## The critical factors

Notably, for us it became clear that studying the NSD process required understanding of the factors that both enable and hinder implementation. Four critical factors emerged in the course of the case study. The factors are: leadership; strategy and strategic capabilities; the NSD process itself, and organizational resources and structure. (See Figure 1).

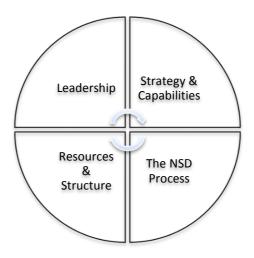


Figure 1 – The critical factors influencing the implementation of systematic NSD process

Delta experienced challenges associated with each of the above critical factors. First, we discuss these challenges, and then an account is provided of the offsetting actions put in place by the participants to overcome the challenges. We foreground evidence and suggestions from the innovation management literature, and propose ways to manage the implementation of new NSD processes successfully.

The challenges associated with the four critical factors and ways to overcome them

## I Leadership

A range of documents suggested that Delta had grown exponentially and was ambitious to reposition itself, diversify its customer base and differentiate its service offerings. Yet a strategic analysis document highlighted that Delta depends on key contracts with their major public sector customers. The firm is over-reliant on tendering to secure contracts; one director argued that this approach has paid off, as it has made Delta a capable competitor in its market over the years.

Following a brainstorming session as part of the initial idea generation stage of the NSD process, Delta's directors saw an opportunity to develop some of the proposed ideas before the new process has been formalized. The comments were: "we know what we are doing"; "we need to see quick gains"; "we are already innovative"; "we don't have time to get involved in a formal process". At meetings, the managing directors said more than once that their involvement "already costs us".

Delta's leadership lacked time, were worried about issues such as the ending of major contracts and cuts in public funding; they expected an early payoff from the innovation process and looked for (essentially) quick profit gains. Involvement in the new formal NSD process was perceived as a distraction from the firm's main operational targets. There was a conviction that the involvement in innovation activities was done at a high cost in terms of time and resources. Attempts to develop new services without a formal process resulted in no new services being formally launched. The leadership needed to be persuaded of the utility of the new systematic NSD process.

The emerging challenges associated with the "leadership" factor included:

- Lack of leadership commitment
- Lack of understanding what NSD process can deliver

### II Strategy and Capabilities

During the study, it emerged, that there was a perceived lack of strategic clarity, coupled with no clear understanding of the firm's strategic capabilities, which hindered the innovation activities and effort. Challenges associated with the "strategy and capabilities" factor included:

- Lack of consensus between top management on strategic direction
- Lack of strategic clarity
- No clear understanding of the firm's strategic capabilities

At the start of the implementation of the novel NSD process, it became clear that the five directors had different views on strategic direction and priorities. One reason for this was that Delta's business plan incorporated the objectives of Gamma and Omega, the two recent separate subsidiaries. These new entities were managed as "projects" by the same leadership and staff and shared the same office space. Some of the directors were prioritizing the existing projects and were interested in delivering the existing services, while others were focusing on the development of new services through the new NSD process. Our participant observation notes from meetings implied that top management had different views and consensus was seldom achieved. This added complexity; as a result, too many projects commenced using the same limited human and financial resources. This led to a failure in executing and delivering those projects targeted at delivering "new services".

Early internal survey results and interviews suggested Delta did have a degree of focus, but not everyone agreed that the firm would be able to stand the pressure from competition and changing external environment. This was largely due to government funding cuts. One of the directors stated: "we do manage change very well. We can change the focus of the organization into something very quickly. It is about using the skills you already have got and then you can transfer them into something else". In the past, Delta had been nimble and flexible in adapting to the government's agenda. This had resulted in Delta winning complex projects with low profit margins, which then required additional resources in order to maintain Delta's good reputation.

The challenges experienced by other participants were related to this lack of clear strategic direction from the directors. The directors were also unwilling to explore opportunities, and refine any proposed new services, with potential customers. The failure to integrate customer input into the early phases of development of the new services ran counter to the formal process stipulation.

The implementation of the new NSD process challenged the Delta's business model. Senior management found themselves in a situation where they had not fully considered Delta's future strategic direction. Another problem was that top management was indecisive as to what (new) service(s) to offer. They believed that they had services to sell (based on the ideas generated from the brainstorming session). The rest of the staff, however, felt that they themselves could not "see" these services. The participants were unable to define their "existing" services. The firm had achieved growth, but fresh demands from an increasingly adverse external environment thwarted participants' flexibility, clarity, focus and resilience. This new organizational complexity (new subsidiaries, government funding cuts, other external changes) required a radical change

in terms of mindset, behaviour, skills and capabilities if "new services" were to be delivered using the novel NSD process.

#### III The NSD Process

The implementation of the new NSD process brought a different understanding that challenged the status quo, old behaviours and required re-assessment of the priorities and value system of Delta, particularly of its top management.

The participants experienced difficulties in formulating business strategies. Attempts were made to develop a new service strategy and align this with the business planning process. Actions were undertaken to formulate an innovation strategy by clarifying what innovation means to the firm and identify specific areas for innovation focus. The firm's business goals, strengths, and weaknesses were explored and determined. Then barriers/obstacles that hindered the achievement of Delta's goals were explored. Surprisingly, the new process helped the top management clarify the business objectives, and the new initiative was seen as a driver of business strategy. This was reflected in particular in the development of a new service strategy and decision criteria for use at the "stage - gate" meetings.

This study demonstrated that determining a new service innovation *strategy*, as a (precursor) stage at the very beginning of the NSD process has major implications for the new services process per se. Organizing and managing the activities of new service development without a clear strategy appears impossible, and success in launching new services seems unlikely - the development of a *strategy* for new service development is a novel requirement that has to be introduced as an initial stage.

During the study, it seemed that the process requirements could not be defined before some degree of understanding was achieved of what an NSD process is. At the beginning, the top management had different perspectives on what innovation system is, as these quotes from different individuals show: "Eureka moments — 'ad hoc' innovation"; "Structured way of doing business": "Letting go old habits, being aware"; "Ways of converting ideas into profitable business"; "System is a vehicle to commit"; "Ways of improving culture and performance".

Early "dummy" services projects failed to clear the new process. One reason was that these projects were led by the top leaders, who themselves felt that the process "bureaucratic" and "unnecessary". Later, it emerged that early services did not reach subsequent stages of the process because the process itself was sidestepped and the prescribed activities were skipped all together. In particular, by reviewing these failed services, it was clear that they failed because the activities within the stages were entirely omitted. The case research revealed that the development of new services commenced in an unstructured manner. Participant observation revealed that no new services were launched in the period when the top decision makers sidestepped the implementation phase. Delta's lack of structured NSD process and decision making explain in part the reasons for the lack of successful development of new services.

Subsequently, a number of service projects were undertaken. By following these projects, we mapped out the activities and the stages of the process. The next hurdle presented was related to the decision-making. Most of the projects initially considered were put on hold; not one "go/no go" decision was made. There were no specific criteria to be used in making the decisions, nor was there clarity as to who had authority to make decisions, and therefore decisions were delayed, or projects were not well enough

resourced to be moved forward appropriately. After the initial failures in developing new services, top management came to understand that they were not realizing the potential benefits of innovation. They had to change their actions and behaviours, to increase their commitment to improving execution in order to yield positive results from the innovation process. One of the directors expressed the need of an innovation process in the following terms: "We have an innovation system for the public sector...Structured way of doing but reactive. It is like a mid-range family saloon which works for our roads but we cannot go far away... [but] ...We don't have an innovation system for the private sector ...We need a new vehicle for change that is fit for purpose".

Once the activities and stages were recognized, major challenges were related to the frontend of the "stage-gate" process and the key decision points i.e. the "gates" themselves. Challenges associated with the factor "The NSD Process Itself" can be summarized as:

- Decisions to enable project progress were made slowly or not at all
- Idea proposals were not selected on the basis of open and transparent selection procedures and criteria
- Ideas were screened "ad hoc" without alignment to business strategy.

There was a disconnect between the execution of innovation projects and other existing operational ventures, which ventures also required effort by more or less the same people. As a result, too many ideas/projects were approved informally and then put forward through the new process. It became clear that prioritization of the projects was required through a rigorous and explicit analysis, given the limited number of people who could get involved in the innovation activities. The innovation projects did not enjoy dedicated resources, and no formal responsibilities and/or project leadership were allocated.

Decisions typically were made informally without rigorous and explicit evidence-based analysis or constructive debate and, rarely, definitive outcomes. In our view, some important questions were not discussed, and innovation ideas were not evaluated based on open and transparent selection procedures and specific criteria (e.g. strategy alignment, cost/price/margin, service design and ways of delivery, market size etc). Additionally, ideas for new services were sought from the employees. When many ideas were generated (100+ in few hours), it became clear that these were not linked to Delta's current business strategy. Without a clear service innovation strategy, it was difficult to evaluate these new service proposals. Moreover, considering that the top team had different views and would continuously come with different suggestions without linking them to the agreed way of action, consensus on approach was rarely agreed; as a result, definitive outcomes were seldom generated.

### Ways to organize and manage a novel NSD process

Initially, Delta put off making project decisions; projects were put on hold and "go/no go" decisions were not made at all. The subsequent use of decision "gates" with clear decision criteria added structure and facilitated NSD decision making. This helped Delta accelerate the initiation, development, and launch of new services. The involvement of the top team in the development of specific decision criteria for idea evaluation and selection, and in-house training for how "gatekeepers" should behave at "gates", were seen positively. Addressing the expected behaviours at gate meetings and assuring the discipline of decision making at each gate was finally achieved when the university partner acted as a facilitator to guide the decision making. This clearly was a challenge for the development team members, who expected the gatekeepers to be: "Realistic in

their expectations, Reasonable assessment of the proposal such as risks and opportunities, Outright agreement – clear yes and/or clear no, Consistency across the panel".

Another important was to establish who the members of the "screening committee" or "gatekeepers" were for each gate. In this way, the development teams would know before the gate review who the decision makers were and what was expected from the team. Interestingly, top management suggested a range of people to act as "gatekeepers" at decision checkpoint meetings. This allowed for different perspectives to be considered and to counter-balance the views of top management. Questions for the business cases included: "What is the service, and to whom will the service be sold? Why invest in this project? How will it be undertaken, when, and by whom? and How much will it cost?". In this way, Delta emphasized financial analysis when making decisions. Using a document template with pre-selected criteria to score projects at gate meetings seemed a viable approach, as it provided a means for making "go/no go" decisions at each gates when moving a project through the innovation pipeline. These actions contributed to obtaining common agreement amongst the top leadership team. The scoring model allowed for building consensus amongst the most senior team on business objectives while evaluating the fit of new service proposals with the firm's business plan. This formalized approach to decision making also provided more clarity to the development team who were expecting from the senior decision makers: "Guidance on where my priorities are – effective use of our time plus priorities...We also need more guidance from the screening committee".

The two projects that were piloted through the new innovation system were both scored at the gate meetings, and the total project scores were used to rank the projects. This

project selection method demonstrated that a small service firm can make efficient and effective decisions on spending priorities and the allocation of scarce resources.

A range of problems with the organizational form and structure emerged. For instance, there was a lack of teamwork and communication between departments; activities were executed within silos. As a consequence, different people were working on the same or similar activities. There was even at times a cross-current of suspicion between staff in these different silos.

#### **IV Resources and Structure**

Challenges associated with the "resources and structure" factor included:

- Lack of dedicated resources to carry out new service development work
- Lack of teamwork and communication between departments
- Unclear responsibilities and lack of project leadership

Initially, the lack of resources (human and financial) dedicated to the new process implementation was a major problem as often resources were promised by the top management and then withdrawn. It seemed to us that the decision makers did not know how to distribute the limited resources across the operational and innovation projects. This did not help in advancing the development and implementation of new services. Additionally, dedicated people were not allocated to the innovation projects carry out service development work, and no formal responsibilities and/or project leadership was allocated. In this regard, Cooper and Edgett (1999) suggest the use of cross-functional project teams for the development of new services. However, in case settings the lack of teamwork and communication between departments hindered the service innovation efforts.

#### Ways to manage organizational resources and structure

The establishment of roles of "development team", "gatekeepers", "innovation champion", and "project managers" overcame the challenges and barriers associated with the bureaucratic organizational structure. In particular, the roles and responsibilities of the "project managers" and "development team" were agreed and signed off at the "gate" meetings by the decision makers. This is particularly valuable for organizations where these roles do not exist. In particular, not having a formal function dedicated to service innovation required one to be created "virtually". This was achieved through the use of "creative challenges" and the use of "competing teams" working on different ideas proposed by the member(s) of the newly created teams.

Other actions included extensive involvement of individual contributors at different levels within the organization and from different departments, in order to get buy-in at all levels and engage in collaborative work. Teamwork, created by deliberately involving people from different silos within Delta, Gama and Omega contributed to development work on key aspects of the new process. This included the design of tools to support development work, such as a "criteria for idea evaluation", a "concept development" template, and a "business case" template.

The introduction of a "business case" tool offered to the service development team a structure to carry out research and present their proposal to the decision makers based on facts, information and research instead of gut feeling. The "concept development" tool addressed issues of service intangibility. Initially, the senior management focussed on "selling" the "new services" which were effectively ideas generated through the idea generation activity. Delta was unable to define what the existing services could deliver. For instance, during the brainstorming session, some of the "new service ideas" suggested

by the employees included services that what the senior management considered as "existing services". The "concept development" tool offered an opportunity to provide details of the new service and the service delivery process, including crib sheets for the sales team. In this way, issues related to service intangibility that led to different interpretations were reduced.

In Delta, structuring the innovation activities allowed for the better deployment of the limited resources by prioritizing projects and using staff time more effectively. Implementation of the NSD process was seen as an organization-wide change initiative; in particular, collaboration from the staff at all levels was sought, in terms of generation of ideas for new services and involvement in the new service development activities. In this study, the firm's service innovation activities saw improvement by tapping into workforce creativity, innovative potential, and initiative. The success of the new NSD system in the firm was due to people's commitment, passion, and enthusiasm. This came from diverse departments, such as human resources, finance, marketing, operations, business development, IT and administration.

## Conclusions and implications

This study explored the implementation of systematic NSD process in a B2B SME setting and it serves to build knowledge and understanding based on practice. The study confirmed existing theory that innovation models developed initially for goods are relevant in business services innovation. The study unearthed the challenges from participants' perspectives in (the early stages of) implementation of a new NSD process. The four critical factors identified were: leadership; strategy and strategic capabilities; the NSD process itself, and organizational resources and structure. These require attention

if the challenges are to be overcome and the service firms to succeed in continuously launch new service. In this way, an important contribution to theory is offered by providing understanding and learning of the critical factors affecting the implementation of a systematic NSD process in terms of the challenges experienced and how business services firm can overcome these.

There is limited literature focusing on the NSD process and its implementation in business services settings. The study provided guidance on to how to implement an NSD process, what works in practice, and what did not work was discovered. Service practitioners with similar challenges can develop similar action plans to address their specific innovation issues and opportunities. The outcomes clarified for service managers, as to which practices are more successful than others and, importantly, why, so that they can improve their innovation processes or implement new ones. Service practitioners can understand how to organize effectively and manage well organizational innovation behaviour. Other small service firms should adopt similar systematic processes, as it helps formalize the decision-making process. This improved understanding of systematic NSD process should equip them better to improve performance and continuously deliver innovation in their own organizations.

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