

Effective Corporate Communication: A Solution to Foster New Product Idea Generation Dynamics

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Abstract To make critical decisions, organizational leaders ensure to collect and analyze information through various sources by employing variety of analytical tools. Consequently, they manage to integrate the results of their analysis to offer diagnostic view by pinpointing the weak areas. Following the above sequence of analytical procedure, the current study presents a diagnostic review of highlighting weak operational areas in a European multinational company. The study findings suggest that the critical gaps are causing communicational breakdown and consequently affecting new product idea mechanism. Such operational areas include; the potential of target company's internal communication system, data collection and record keeping capability, management's approach to harness corporate potential of new idea generation and employee empowerment mechanisms. The referred areas are directly linked to the target company's new product idea generation initiatives, the activities linked to the introduction of innovative products and service styles as well as the overall operational growth.

Keywords Effective communication · Organizational leaders · Idea support mechanism · Internal communication · Employees' empowerment

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1 Introduction

According to the surveys conducted in 1997 [1, 2] new products introduced during the period of five years from 1992 to 1997, contributed as much as 50 % of the total revenues and profits, though at the same time, the new product failure rate remained high. To be more specific, an estimated 46 % of the resources that companies devote to the conception, development and launch of new products go to projects that do not succeed and either fail in the market place or never make it to the market [3]. In the light of above, this study survey has attempted to explore the significance of transformational leadership and strategic thinking capacity building initiatives in an energy sector organization. This transformational process is evaluated through the feedback received from the target company's selected employees, representing product development teams or associated operational workforce with reference to new product development (NPD) idea generation process. In this context, the study starts with literature review of new product development idea generation and effective communication process, and later will go on to develop study hypotheses. The research methodology, analyses of results and research model formation will take place at the advanced level. Finally, the results of the current study will be analyzed in detail.

2 Conceptual Roots of New Product Idea Generation and Effective Communication

2.1 *New Product Idea Generation*

Taking lead in introducing innovative products by crafting effective product development processes is today's greatest challenge for industries while facing tough global competition. Modern companies can strengthen their internal processes by obtaining new product ideas from external resources by intelligently utilizing their internal capabilities [1–3].

However, Kamien and Schwartz [4] negate the above proposition by pointing out the difficulties of innovation under tough market competition due to which the tendencies of a company to innovate become seriously hampered and sometimes come to a complete halt. It is desired that a new product or service must hold a "wow" factor or 'aha moment' [5] by offering something that is missing from the range of products already available in the market. Conceiving such a new product idea seems beyond the reach of most of the companies today. Thomas and Carroll [6] stressed the significance of human cognition and linked their definition of product design thinking to the intellectual approach or the intent of the product designer. They supported their notion by stating that the design occurs when a problem-solver tries to solve the problem or acts as there is some indecision in the aims, initial conditions or allowable transformation. This results in connecting the

industry with its customers by making them an integral part of the entire NPD process i.e., scoping, product definition, development, validation, and beyond.

2.2 *Effective Communication*

Communication is a very basic requirement to initiate any mutual action between 2 or more individuals or groups [7]. Effective communication between the NPD team members during the process of new product development. This can be achieved by sharing information among the NPD team members and organizing project meetings [8–12]. According to Peter Drucker [13] and Edward Deming, [14] fear in organizations hinders innovative initiatives, effective communication and the overall performance. In addition, organizational leaders and managers must acknowledge the fact that periodical information systems evaluation and the upgrading of communication systems [15] ensure global project success. This approach is directly connected to the process of organizational “information technology-enabled” service exchange through organizational interactions (i.e. local vs. global) to ensure effective partnership to guarantee value co-production. The notion of democratizing product innovation by empowering customers to take a greater role by taking more of an active stake in corporate NPD [16] has gained attention over the years. Such thinking in NPD practices encouraged many companies globally (e.g. Adidas, BMW, Ducati, Procter and Gamble, 3 M) to involve their customers and other stake holders to incorporate their customers’ innovative new product ideas into NPD processes more actively, directly, and systematically. After discussing the concepts of NPD idea generation and effective corporate communication, the authors will formulate main research questions in the next paragraphs.

3 **Research Methodology**

Assessment of the subject company’s transformational leadership potential linked to strategic thinking capability is carried out by employing quantitative research methodology [17–19]. The main aim of the research study was to investigate the following dimensions;

- *Research Question A*: How adaptive is this organization towards designing supportive new product development idea generation processes?
- *Research Question B*: How effectively did this organization applied effective communicational approach in this organization to support product idea generation processes?

The study is supported through qualitative research in the form of interviews to offer freedom of idea sharing to the study participants. The referred qualitative approach is applied by putting together this organizational case study through in person and email based interview questionnaire. The scope of this study takes into account 10 selected professionals each from its three international locations: Finland, the UK, and Norway on the basis of their professional expertise and operational relevance. In addition, all the three work locations are engaged in producing separate nature of products or services; i.e. Finland—Power engine, Norway—Marine-shipyard support and solutions and the UK—Environment sustainability solutions respectively. The selected study respondents represented new product development work operations.

3.1 Qualitative Survey Tool

The interview questions broadly covered the investigative areas of the research study that are as follows:

- i. New product development and customer value,
- ii. Company's knowledge creation potential,
- iii. Company's innovative potential,
- iv. Company's potential to celebrate new idea creation process.

The interview questionnaire having 10 questions was administered to selected personnel of the subject company.

4 Results and Analysis

A few examples of respondent's statements confirming weaknesses in the target location's communicational setup, gathered through qualitative tool, are as follows;

One response to a question related to employee recognition for the efforts of new knowledge creation was that "New ideas are highly appreciated at departmental level but not recognized much at the higher level". Another response by a study respondent was that "New initiatives are recognized but the rewards are not visible" [20–23]. A point raised by one interviewee was that "There are people who listen but it doesn't happen so much, or it is a long process to introduce new ways of working. We also struggle with a stiff bureaucracy".

An opinion by one interviewee suggested that the (management initiatives) "should be more encouraging. If you create a patent you get some recognition. This is not easy as we are locked into the process descriptions and directives". A critical opinion by one interviewee suggested that "Company seems to have its own ways of doing things and these ways are strongly defended by many people. It seems that

many do the job/execute the tasks by strictly following the standard operating procedures, though that these might not be the best practices. Based on this lack of flexibility one would say that it is not easy to introduce new ways of doing things. It will be a battle for change". At one instance the response was: "The way of handling new ideas is too bureaucratic". One team member pointed out that "The information available at the internal information systems is outdated." And one response was that "Currently there is no common internal communication system available in working condition". A respondent additionally reported that "As far as I know, we do not have any structured way of storing ideas for later utilization. The best ideas and technologies are implemented into the new products according to what is considered suitable without too high risk taking (technology readiness level), but there is no structured way of storing the "left over ideas" that it could be feasible to utilize later on (after technology validation)".

The view of an interviewee on the company's internal communication system was that, "(The) Company has a homepage ... i.e. design guidelines and standards can be found there but a lot of information is outdated". Another response received on the area was that, "(The) Company has a document management system in which information should be stored. It may not always be so easy to find what you are looking for there". Furthermore, a respondent suggested that "currently the information is stored on a server with limited possibilities for searching and indexing files or reports". One respondent notified that "Knowledge sharing is always difficult. It is difficult to know what channels to use".

5 Discussion on Results

For modern industries, "market intelligence" supported through effective communication is the core ingredient of NPD innovation activity [24–26]. Communication in an organization is defined as a process of one-to-one or interpersonal communication, between individuals. Such communication may take several forms. Messages may be verbal (that is, expressed in words), or they may not involve words at all but consist of gestures, facial expressions, and certain postures (i.e. also termed "body language"). Nonverbal messages may even stem from silence. Market intelligence is the information relevant to a company's markets, gathered and analyzed specifically for the purpose of accurate and confident decision-making in determining strategy in areas such as market opportunity, market penetration strategy, and market development. Hence, the overall innovative activity associated with the process of new product idea generation is always associated with an individual's knowledge base. Hence, it is also possible that a designer (or, perhaps, an observer during the overall product development process) may identify a new area of research while focusing on his own [5, 26–28].

5.1 Response to Research Question A: How Adaptive Is This Organization Towards Designing Supportive New Product Development Idea Generational Processes?

It is observed that there are numerous areas that require attention and refinement to support the subject company's NPD idea generation initiatives and capabilities [11, 17, 26]. Initially, more practical initiatives by the management are required to honor and acknowledge the efforts of new idea generators. In addition, the role and involvement of innovative media options must be enhanced to create effective connections between the company (i.e. through its various work units) and its external stake-holders. Greater level of efforts are required by the company's management to enhance their work teams' knowledge base and understanding of the market as well as the customer needs in order to establish strong customer dependence on the company's products and services through reliability. Additional focus and effort level is required from the company's management to enable flexibility in the company's production and service solutions capabilities [24, 25]. Furthermore, the information sharing among various work roles and functional levels in addition to the process phases should be made convenient. It is additionally recommended that the subject company's ability to reach all types of stake holders should be enhanced further. The company's management should introduce a periodical job rotation policy (i.e. across functions as well as across borders) to make their work team members more capable of multitasking, alert, knowledgeable and responsible for the work areas across various functions and work roles. New processes should be formulated and implemented to enhance and ensure speedy response inflow from the sales networks to the services or repair and maintenances units. Finally, there is a major need to install effective sales and after sales communication networks additionally involving research and development, design and product manufacturing lines to support the subject company's innovation initiatives.

5.2 Response to Research Question B: How Effectively Did This Organization Applied Effective Communication Principles in This Organization?

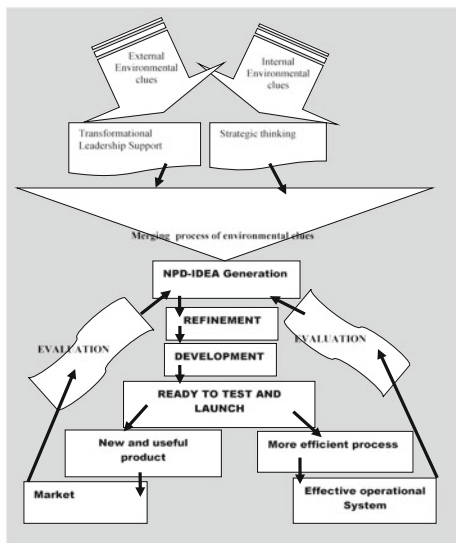
The study's quantitative as well as qualitative data analysis highlighted obvious weak areas in the subject company's environmental openness and internal communication systems. To cover these gaps it is recommended that an enhanced level of cross functional communicational flow and frequent knowledge sharing opportunities be ensured, especially involving research and development, design and engineering departments. Furthermore, an increased level of organized and scheduled cross functional team coordination is required in addition to relying on

electronic communication methodologies (i.e. emails, webinars, etc.). Furthermore, more frequent Skype meetings and webinars should be arranged, involving the subject company's globally scattered teams to support international projects and enhanced team coordination.

The survey data analysis highlighted that the subject company is currently unable to implement and utilize the potential of its internal communication systems due to either having obsolete data or currently having insufficient operational capacity. Hence, it is highly recommended that the subject company update its communicational systems and data bases. In addition, quick upgrading or trouble shooting upon user request is required. Furthermore, communication system alterations, improvements, and the inclusion of additional features (e.g., system based corporate report, generation upon user requests should be implemented promptly) in the current communication system is highly recommended. It is further recommended that the subject company adopt a unified procedure for application usage so as to ensure standardized, one-fee, documentation. The use of ICT based applications and databases should be made compulsory for all data management and for all concerned so as to ensure a single platform for information search and sharing. There should be strict but user friendly guidelines for information and document archiving. In addition, data accessibility should be made efficient, and user friendly. Finally, the work teams must be encouraged to use the system applications and databases more frequently and efficiently through the support of system related trainings to handle the databases and systems significantly. Furthermore, better control over communication issues due to language barriers, moderately responsiveness and unclear job description/responsibilities should be ensured. In the light of above findings, the authors propose following NPD idea evaluative process for the target company.

Figure 1 reflects in detail the ideal process model to support the proposed theoretical framework extension presented in the current research study through especially highlighting the evolution of the NPD related idea as well as evaluation cycle. According to the above, the reader can clearly view the relation among various NPD process stages. The process starts by taking the new product development related feeds through internal and external environment clues. The next stage comes when the clues are merged together to give birth to a new product or process related idea with the support of transformational leadership and strategic thinking factors. Further, this product related idea crosses various stages including formal new product or process related idea formation, the refinement process stage, then the formal development process starts, which later takes the form of either a product which is ready to be tested and launched or a formation of a product development related process. Finally, the new product goes to the market as a new and useful creation, gets evaluated through real time market testing and in return becomes the source of customers' feedback. Such market feedbacks further generate new product related ideas and this cycle goes on and on. On the other hand, if the idea is related to the formation of any new product process, then it goes to the organizational process formulation stage (i.e. through discussions and brainstorming etc.), and if accepted, then it is implemented after the necessary testing as a useful process; consequently it

Fig. 1 Proposed model's evaluation process



becomes part of the effective operational system. After evaluation, the newly approved process may further work as the source of generating new process related ideas to keep such a thought process cycle alive and running. Accordingly, the qualitative and quantitative data analysis revealed possible room for improvement related suggestions in the area of new product development stage gate process upgrade. According to the respondent's feedback, the current situation is reported as "case to case basis" with no formal new product stage and gate process being adopted. Hence, the following three sets of new product development activities with reference to each one of the studied location are formulized:

Figure 2 reflects the product associated with the Finland site office along with its allied processes and operational motives. The details displayed in columns 1–4 are in accordance with the respondents' feedback. The product category linked to the mentioned work site is energy or power related. The responses by respondents through the implementation of qualitative tool reflected the site's reactive approach towards the new product development since the major sources of the product ideas are customer's feedback and the V2 notifications from the factory. The site office is dependent on certain regulations and standards (i.e. emission standards) that reconfirm the reactive product development approach. The reflection of the stage and gate process, as reported by a study representative, includes the stages which are highlighted in bold format while those which are not highlighted are parts of the recommended set as well but usually get overlapped in the overall new product development process keeping in view the nature or category of the product.

Figure 3 displays the information related to the product associated with the Norway site office. The information further highlights the product's current baseline processes as well as its operational objectives. Here again, the details displayed in

Site office: Finland			
Product or service -	'New idea' sources for products and services -	NPD processes stage and gate -	Desired aims
Power engine	i. CORL- Customer feedback through Sales and Services Departments,	Idea generation-Brain storming I - GATE Idea Refinement (Preliminary investigation I - Gate Second screening) I-GATE	i. Reliable product
	ii. V2- From factory, Labs and rigs,	Instructions for manufacturing (Detailed investigation I - Gate Decision on business case) I-GATE	ii. Cheaper fuel options
	iii. Discussions with patent engineers	Product manufacturing I - GATE Testing I -GATE Feedback	iii. Resolve engine break downs
	iv. Competitor's analysis,		iv. To match social regulations (emission regulations etc.)
	v. Product performance and life cycle analysis,		v. Worth to customers, Easy to manufacture, Tailor made facility- Nonstandard engine requests, Value based pricing
	vi. Market intelligence, Gap analysis.		vi. To gain competitive edge
	vii. Gap analysis.		vii. To gain competitive edge

Fig. 2 Summary of NPD process at the targeted site office in Finland

Site office: Norway			
Product or Service -	'New idea' sources for products and services -	NPD Processes stage and gate -	Desired aims
Marine-shipyard support and solutions	i. Customers claims and general feedback analysis,	Idea generation- I - GATE Idea refinement (Preliminary investigation- I-GATE Second screening) I-GATE	i. Efficient trouble shooting
	ii. Sales and service departments input, ISO 9000 standard compliance	Instructions for manufacturing (Detailed investigation on Business case- I-GATE Decision on business case (client's NPD agreements) I-GATE	ii. Shipyard solutions
	iii. Future regulatory requirements	Product manufacturing I - GATE Testing I -GATE Feedback	iii. Product or sub-supplier's equipment modifications
	iv. Regular quality assurance (QA)meetings,		iv. Long term relationships Worth to customer,
	v. Degree of compliance analysis		v. Non conformity system to log efficiently any mis-happening.
	vi. Cost factors (Cost vs. customer benefit analysis).		vi. New agreements for product development
	vii. Close client follow ups		vii. To gain competitive edge
	viii. Performance vs. deliveries analysis		viii. To gain competitive edge
	ix. Performance vs. deliveries analysis		viii. To gain competitive edge

Fig. 3 Summary of NPD process at the targeted site office in Norway

columns 1–4 are linked to the product category (i.e. marine—shipyard solutions) of the mentioned work site. The reflection of the actual stages and gates process includes the ones highlighted in bold format while the ones which are not highlighted are those which are part of the recommended NPD process set but usually get overlapped in the entire new product development process, keeping in view the nature or the product category.

Figure 4 displays the product associated with the site office in the UK along with its linked processes and operational objectives. Here, the details displayed in columns 1 to 4 are linked to the product category (i.e. environment sustainability

Site office: The UK			
Product/Service -	'New Idea' sources for products and services -	NPD Processes stage and gate -	1. Desired Aims
Environment sustainability solutions -	<ul style="list-style-type: none"> i. Customers feedback, ii. Marine regulations IMO, BWI standards, USGC Acceptance, iii. Future regulatory requirements iv. CORL questionnaires v. Warranty reporting vi. Feedback by the service engineers vii. Quality investigation reports, iii. Feedback through project teams ix. NPI processes x. Publications through research journals and conferences, xi. New market search xii. Cost factors. 	<ul style="list-style-type: none"> Idea generation - (Regulations and cost specific) I-GATE Idea refinement - Knowledge gaining through international seminars, conferences or workshops and international scientific journals. Preliminary investigation- I-Gate Second Screening) I-GATE Instructions for manufacturing (Detailed investigation on Business case- I-Gate Decision on Business case) I-GATE Product Manufacturing I-GATE Testing I-GATE Feedback 	<ul style="list-style-type: none"> 2. To offer environment sustainability solutions 3. To support membrane bioreactors 4. Pumps and pipes 5. Scrubbers 6. Reliable product 7. Offer sustainable solutions 8. To match regulations and standards etc.) 9. Worth to customer, 10. Easy to manufacture, 11. Value based pricing 12. To gain competitive edge 13. Quality, 14. cost effectiveness, 15. reliable, long lasting products and solutions, 16. Value added features, 17. Global service support.

Fig. 4 Summary of NPD process at the targeted site office in the UK

solution) related to the mentioned work site. Figure 4 is formulated on the basis of actual data reflecting in 'bold' the stages and gates in placed at the referred site. However, the stages that are not highlighted are those that are the part of the recommended NPD set of processes but are usually overlapped in the overall new product development process due to the nature or category of the product. New product development process remains central and very critical to any industry. It reflects a company's approach towards the new product opportunity. Through leadership and strategic thinking capabilities, a company's management and its work teams can sharpen their potential to react to the market opportunities by carving out smart, suitable and product category specific NPD processes.

Having a close look at all the three figures reflecting the three targeted work locations (Finland, Norway and the UK), it is recommended to implement separate stage gate processes implementations, keeping in view the differences in the product categories (i.e. energy, marine and environmental sustainability), its nature and production process requirements, to support innovation initiatives while taking care of the issues associated with NPD team dynamics (i.e. effective communication, team empowerment, effective control over resources, etc.). For instance, the products (i.e. environmental sustainability solutions- scrubbers, pumps and valves, etc.) of the site office in the UK are innovative solutions newly introduced globally. It is a global directive and highly cost driven as well. Such products and services require more global market attention or dissemination at the initial production stages than the regular products and solutions related to power and energy or marine and shipyard issues. The difference can also be understood in terms of the nature of the stakeholders associated with each of the product categories. Environmental sustainability solutions and products are directly associated with global policies, standards and regulations, while energy solutions or marine solutions are mainly linked to social regulations and local standards and requirements. Similarly, power or energy solutions and products have more margins of manufacturing freedom and production based on innovative features (i.e. power engines, light machines or heavy and smart power plants, etc.). In all the three product categories associated

with the three targeted sites, there are obvious differences in terms of product scope, manufacturing requirements, customer base and other stakeholders. This supports a clear requirement, based on the concepts of leadership and strategic thinking, to suggest designing three different sets of new product development stage gate processes to support each product category. It is anticipated that once the discrepancies highlighted through the study's quantitative and qualitative data analysis are rectified and the targeted locations are supported through the product category specific stage gate processes, there will be an obvious positive change in the productivity and efficiency levels of the said target locations.

While exploring suitable measures to propose or formulate product nature specific separate stage gate models, the company's research teams can follow the examples of other manufacturing concerns as guidance: (e.g. Xerox; for Xerography, and Black and Decker for power tools) following Corning's Five-Stage, Stage- Gate process; i.e. Stage 0: Discovery; Stage 1: Scoping; Stage 2: Building a Business Case; Stage 3: Development; Stage 4: Testing and Validation; and Stage 5: Launch [29–31] and an innovative approach to gain market lead through corporate product innovation strategies supported by the concept of strategic leadership [31]. In addition, the companies could modify the basic new product development stage and gate processes according to their requirements and resources, the customers' needs and the nature of the products they are offering; e.g. United Technologies Corporation used variants of the stage gate processes to design helicopters and jet engines while ITT Industries, used to follow a staged process with progressive freezes to design military radios and satellites [32]. The stage gate process is an effective tool for accelerating incremental product development. Furthermore, it cannot be directly used for fuzzy front end (FFE) in case of platform or breakthrough products. Platform products (i.e. following a multi-market, multi-product strategy) need to begin with a strategic vision which will lead to a family of products based on an in-depth understanding of the market and how the company's core competencies and capabilities may be used to build competitive advantage [31].

6 Conclusion

This study is significant in terms of new knowledge creation and has examined the effects of effective communication principles to harness new product idea generation potential in one European energy sector company, while studying its current new product development proficiency at its three sites (Finland, the UK, and Norway). The research process highlighted operational gaps and suggested measures for improvement in its current working practices linked to effective communication process to support new product development idea generation process. Since no formal unified stage gate process is currently followed at the target locations to offer comparative basis for NPD process analysis, evaluation and control for organizational productivity and profitability.

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