

Generating Ideas for New Product Development: Strategies and Initiatives

Pratap Chandra Mandal, Indian Institute of Management, Shillong, India

ABSTRACT

Continual innovation is imperative to sustain competition. Companies require generating innovative product ideas and implementing them. Companies require understanding customer requirements and preferences and doing continual innovation to develop offerings for meeting and exceeding customer expectations. New product ideas may come from varied sources and by applying diverse creativity techniques. Companies generate ideas from both internal and external sources. Internal sources include research and development and employees. External sources include customers, competitors, and various other stakeholders. Companies may adopt creativity techniques like crowdsourcing, brainstorming, role-playing, forming forced relationships, morphological analysis, reversing of assumptions about product usage, mind mapping of individuals, and lateral marketing. Companies require creating and encouraging a culture of innovation to generate ideas, implement them, exceed customer expectations, succeed in the completion, and have long-term growth.

KEYWORDS

Brainstorming, Creativity Techniques, Crowdsourcing, Innovation Culture, Lateral Marketing, Mind Mapping, Morphological Analysis, Reverse-Assumption Analysis

DOI: 10.4018/IJRDIS.20200101

This article, originally published under IGI Global's copyright on January 1, 2020 will proceed with publication as an Open Access article starting on February 3, 2021 in the gold Open Access journal, International Journal of R&D Innovation Strategy (converted to gold Open Access January 1, 2021), and will be distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

1. INTRODUCTION

New product development determines the future of a company to a large extent (Rothaermel & Hess, 2010). Improved or replacement products and services can maintain or build sales. However, products and services which are new-to-the-world can transform industries and companies and change lives (Crawford & Di Benedetto, 2011). To introduce new products, companies need to challenge the existing industry norms and apply imaginative solutions which will delight and engage customers (Rothaermel & Hess, 2010). Innovative companies play an important role in new product development. They invest and do in-depth research to understand their customers. They identify and evaluate ideas based on customer requirements and work with R&D and other areas in every stage of development (Carson, 2007).

New products are the lifeblood of an organization. However, new product development is risky, and many new products fail (Crawford & Di Benedetto, 2011). Companies should not leave new product development to chance. They should carry out strong new product planning. They must develop a systematic and customer-driven new product development process for finding and growing new products (Dotzel, Shankar, & Berry, 2013).

The first step of innovation in new products is to generate ideas. Ideas should be both practical and feasible to implement. Idea generation provides companies with a pool of ideas from which they can choose the best ideas for implementation. The success of new product development will depend on the quality of the ideas generated. Companies adopt a number of varied and different ways to generate ideas. The paper discusses the various ways in which companies generate ideas for new products. It focuses on the sources – external and internal, and creativity techniques companies adopt to generate innovative ideas.

The paper is structured as follows:

Section 2 focuses on the importance of generation of ideas for innovation in new products. Section 3 focuses on diverse ways to find great new product ideas. Section 4 discusses the various sources for generating ideas. Internal idea sources may include research and development, and employees in an organization. External idea sources may include customers, competitors, and other stakeholders. Companies adopt various creativity techniques to generate new product ideas. Section 5 focuses on discussions done in the paper. Sub-section 5.1 focuses on the contributions of the paper while sub-section 5.2 focuses on managerial implications. Section 6 concludes the paper with sub-section 6.1 focuses on future research directions.

2. GENERATION OF IDEAS FOR INNOVATION

Generation of ideas is the first step towards new product development (Carson, 2007). Companies search for new product ideas systematically. Companies do a lot of introspection and generate hundreds – even thousands – of ideas to find a few good ones. Companies may generate ideas for new product development from a number of

sources. Major sources of new product ideas include internal sources and external sources such as customers, competitors, distributors, suppliers, and others (Aboulnasr, Narasimhan, Blair, & Chandy, 2008). Marketing experts believe that the best set of ideas for new products is generated by uncovering and understanding unmet customer needs and how those needs can be satisfied with the help of technological innovation (Aboulnasr et al., 2008). New product ideas can come from interacting with various groups and using creativity-generating techniques.

3. WAYS TO FIND GREAT NEW PRODUCT IDEAS

Companies involved in innovation adopt a number of ways to generate new product ideas. Companies run informal sessions where groups of customers meet with company engineers and designers. They discuss problems and needs and brainstorm potential solutions (Cooper & Edgett, 2008). Innovative companies allow time off for technical people so that they can invest time and energy for their own pet projects. Google has allowed 20 percent time off, 3M 15 percent, and Rohm & Haas 10 percent (Dotzel et al., 2013). Companies should integrate innovation in all their activities. For example, many companies make a customer brainstorming session a standard feature when customers visit their plants and manufacturing units (Barone & Jewell, 2013). Companies can conduct surveys among their customers to understand what they like and what they dislike in the products of a company. At the same time, companies should try to understand what their customers like in the products offered by competitors and which are not offered at present. Fluke and Hewlett-Packard conduct “fly-on-the-wall” or “camping out” research with customers to understand them better (Rubera & Kirca, 2012). Companies also conduct iterative rounds of discussions. A group of customers gather in one room and focus on identifying problems. A group of technical people from companies gather in another room, listen to, and brainstorm the solutions proposed by customers. They also test the proposed solutions immediately with the group of customers (Gielens, 2012). Companies scan trade publications in various countries by searching with specific keywords to know about the latest new product developments. Companies should treat trade shows as intelligence missions where they can understand the new developments in the industry. Companies send their technical and marketing people to the laboratories of suppliers to spend time and discuss with the technical people of suppliers to discover innovative ideas. Companies set up an idea vault, and make it open and easily accessible to employees so that they can review the ideas and contribute constructively to them (Srinivasan, Pauwels, Silva-Risso, & Hanssens, 2009).

4. SOURCES OF IDEA GENERATION FOR NEW PRODUCTS

Apart from the initiatives discussed above, companies adopt various approaches to generate ideas for new products. Innovative companies collect ideas for new product development from varied and diverse sources and do not rely on a single source.

They develop extensive innovation networks. They capture ideas from every possible source and from every possible individual to generate ideas of all possible dimensions (Dotzel et al., 2013).

4.1. Internal Idea Sources

Internal sources can be utilized by companies to find new ideas through formal R&D (Carson, 2007). For example, Ford operates an innovation and mobility center in Silicon Valley. The center has employed engineers, app developers, and scientists working on everything from driverless cars to Works with Nest apps. Such apps allow consumers control home heating, lighting, and appliances from their vehicles (Martinez, 2015). Chick-fil-A has set up an innovation center called Hatch. Employees in the center explore new ideas related to food, design, and service. Hatch is a place to “ideate, explore, and imagine the future”, to hatch new food and restaurant ideas and bring them to life (Martinez, 2016).

Companies can generate ideas from suggestions provided by its own people – from executives to salespeople to scientists, engineers, and manufacturing staff (Dotzel et al., 2013). Innovative companies encourage employees to generate ideas and submit those ideas. Companies develop internal social networks and intrapreneurial programs that encourage employees to develop new product ideas. For example, AT&T has set up an internal online innovation community called The Innovation Pipeline (TIP). In that community, AT&T employees from all areas and levels of the company submit, discuss, and vote on new product and service ideas. Employees who generate the ideas with the top votes pitch them to AT&T senior executives. They select the best three ideas for further funding, research, and development (ATT.COM, 2016). The initiative was introduced in 2009. AT&T employees have submitted more than 28000 ideas to the TIP community. AT&T has funded more than 75 TIP projects ranging from customer service enhancements to new product offerings (ATT.COM, 2016).

Technical companies like Facebook, Twitter, and LinkedIn organize and sponsor periodic “hackathons”. Employees take a day or a week off from their regular work schedule to develop new ideas (Morgan, 2015). Professional social media network, LinkedIn holds “hackdays”, one Friday each month. Employees are encouraged to work on any project which they are interested in and which also benefits the company (Scott, 2012). LinkedIn also has an InCubator program where employees can form teams each quarter. They pitch new and innovative ideas to top-level executives of the company. If the ideas are approved, the concerned teams get up to 90 days off from their regular work schedule to convert the ideas into reality (Scott, 2012).

4.1.1. Interaction With Employees

Employees of companies are the people who have knowledge about the latest product developments in the companies and also about customer requirements. Employees are in a better situation to understand innovations to be incorporated in products. They can be a source of ideas for improving production, products, and services (King & Lakhani, 2013). Innovative companies encourage their employees to submit suggestions and

ideas regarding new products. For example, employees of Toyota submit two million ideas annually (about 35 suggestions per employee). Out of the ideas submitted, more than 85 percent of the ideas are implemented (Machlis, 2009). LinkedIn has an in-house incubator which allows any employee to organize a team and pitch a project to a group of executives. LinkedIn has specified a day in a month where employees work on creative projects. The initiative is named as “hackdays” which takes place on a Friday in each month (Chaey, 2012). Pricewaterhouse Coopers organized an innovation competition called “PowerPitch”. It was an American Idol-style competition where the winning team received \$100000 and the opportunity to implement their proposal for a new line of business. It was estimated that the business might generate revenues worth \$100 million. Live chats and an online platform for discussion and voting were organized. A five-team finale was televised internally from the company’s headquarters in New York City (Overholt, 2011).

The top management of any company has a holistic and strategic perspective. So, innovative ideas may come from people at the top management. Several company leaders like former CEO of Intel, Andy Grove and former CEO of Sony, Akio Morita took personal responsibility for innovation in the firm (King & Lakhani, 2013). Innovative ideas may be generated from various other sources which are external to the company. However, the initiative for generating ideas from outside should be guided by employees. It depends to a large extent on how an employee in an organization assumes the role of product champion (Raassens, Wuyts, & Geyskens, 2012).

4.2. External Idea Sources

Generating ideas for innovation should not remain confined within the company. Innovation requires an open culture where ideas may get generated from external sources (King & Lakhani, 2013). Individuals from outside should be motivated by employees to generate and submit innovative ideas. Companies tap external sources for new ideas through scientists, patent attorneys, customers, engineers, university and commercial laboratories, industrial consultants, publications, marketing and advertising agencies, channel members, and even competitors (Raassens et al., 2012).

Companies receive innovative new product ideas from a number of external sources. Many distributors and suppliers have in-depth knowledge about products and the market and can contribute ideas (Dotzel et al., 2013). Distributors stay close to the market and can pass along information about consumer problems and new product possibilities. Suppliers can provide suggestions for new concepts, techniques, and materials that can be used to develop new products (Aboulnasr et al, 2008).

Companies start interacting with outsiders with the intention of understanding customer needs and wants (Joshi & Sharma, 2004). Marketing experts suggest that interviews should be conducted based on individual market segment. They suggest that conducting 10 to 12 in-depth experiential interviews per market segment often reveals the vast majority of customer needs (Griffin & Hauser, 1993). Some other approaches may also generate innovative ideas. For example, one market-sponsored

café in Tokyo tests products of all kinds with affluent and influential young Japanese women (Inada, 2008).

Proctor & Gamble (P&G) has made new product development more externally focused. P&G has started an initiative called Connect + Develop to generate innovative ideas (Dishman, 2012). P&G is a corporation which has the fastest growth rate in revenues and profits in the first decade of the 21st century (Brown & Anthony, 2011). P&G has achieved its growth rate because of its numerous successful brands – Olay Regenerist, Swiffer, Mr. Clean Magic Eraser, Pulsonic toothbrushes, and Actonel which is prescribed for osteoporosis. The then-CEO of P&G, A.G. Lafley called the reflected innovation as “the core” – core markets, categories, brands, technologies, and capabilities (Lafley & Charan, 2009).

The “Connect + Develop” model emphasize the pursuit of outside innovation to develop its core more effectively (Huston & Sakkab, 2006). Through the model, P&G collaborates with organizations and individuals around the world, searching for proven technologies, packages, and products which can be improved. P&G then markets the improved products itself or in partnership with other companies (Dishman, 2012). It has a wide network and has built strong relationships with external designers. The designers distribute product development around the world to increase what P&G calls “consumer sensing” (Huston & Sakkab, 2006).

P&G tries to understand consumer needs and wants and identifies the top ten customer needs. It also identifies closely related products that could leverage or benefit from existing brand equity, and “game boards” that map the adoption of technology across different product categories (Dishman, 2012). It consults with external agencies like governments and private laboratories as well as academic and other research institutions, venture capital firms, individual entrepreneurs, suppliers, retailers, competitors, and development and trade partners. It makes effective use of online networks to reach thousands of experts worldwide (Brown & Anthony, 2011).

The philosophy of the Connect + Develop initiative depends on three core requirements (Lafley & Charan, 2009).

1. P&G adopts a cautious approach while analyzing ideas which come from outside. All “ready to go” ideas may not be truly ready to go. Ideas may need further development work and risky scale-up before they can be considered (Dishman, 2012).
2. Implementation of ideas requires substantial amount of internal resources. P&G appoints a full-time and senior-level executive to run the Connect + Develop initiative. The job of the executive is to perform a critical analysis of ideas and also to analyze whether the implementation of the ideas will be both feasible and practical (Huston & Sakkab, 2006).
3. An initiative like Connect + Develop cannot succeed without support and encouragement from the top management. The initiative cannot succeed if it is cordoned off in R&D. So, P&G has a top-down and company-wide strategy where the initiative is launched with a mandate from the CEO (Lafley & Charan, 2009).

P&G receives more than 4000 submissions annually. It also encourages a larger network of individuals and businesses having a past history of working with the company, to submit innovation ideas. Such ideas are given full consideration for implementation. Based on its Connect + Develop initiative, P&G made substantial improvements in product cost, design, and marketing (Dishman, 2012). It increased its R&D productivity by nearly 60 percent in the last decade. The innovation success rate of P&G has more than doubled and costs have fallen mainly due to such initiatives (Brown & Anthony, 2011).

4.2.1. Crowdsourcing

Crowdsourcing is one of the approaches which companies use to generate new ideas. One form of crowdsourcing includes companies inviting the online community to help create content or software. Companies sometimes award prize money or a moment of glory as an incentive (Raasch & Von Hippel, 2013). Baskin-Robbins once ran an online contest to pick its next flavor. 40000 individuals participated in the competition. The winning entry came surprisingly from a 62-year-old grandmother of four. She suggested a flavor containing combined chocolate, nuts, and caramel. The flavor was launched by Baskin-Robbins as Toffee Pecan Crunch (Hoffman, Kopalle, & Novak, 2010).

Many innovative companies extend open invitation or conduct new product idea programs to generate new ideas. Crowdsourcing involves companies inviting broad communities of stakeholders – customers, employees, independent scientists and researchers, and even the public at large – into the new product innovation process (Raasch & Von Hippel, 2013). Generating ideas from such a large breadth of sources, both external and internal to a company, can produce innovative, unexpected, and powerful ideas (Raasch & Von Hippel, 2013).

Now-a-days, companies across all industries are crowdsourcing product innovation ideas rather than relying only on their own R&D laboratories (Raasch & Von Hippel, 2013). For example, sports apparel maker, Under Armour has a number of experts of new product development. However, the company knows that innovative out-of-the-box ideas come only from outside the company. Under Armour sponsors an annual crowdsourcing competition called the Future Show Innovation Challenge to generate innovative ideas (Beer, 2015).

The competition invites entrepreneurs and inventors to participate and submit new ideas. From a large number of entries, an Under Armour team shortlists 12 finalists who are invited to pitch their ideas before a panel of seven judges in a splashy, Shark Tank-like reality TV setting (Horovitz, 2013). The prize money for the winner is \$50000. The winner is also invited to work with Under Armour to help develop the winning product. Kevin Plank, CEO of LEGO comments that the goal of the challenge is to “cajole top innovators to come to Under Armour first with gee-whizzers.” The best idea for a product is a made-for-athletes zipper called the UA MagZip. The zipper can be zipped easily with only one hand. The internal R&D team of Under Armour tried to develop a better zipper for two years. However, the vice-president of innovation says, “we couldn’t get it to work” (Beer, 2015). The Future Show resulted in a number of

creative new product ideas. As a result, the entire exercise of crowdsourcing becomes successful. The Under Armour innovation chief comments, “We need to be humble enough to know that the next great thing might come from some kid playing college football who happens to have a better idea.” (Horovitz, 2013)

Cisco organizes the Cisco Internet of Things (IoT) Grand Challenge (formerly the Cisco I-Prize) to generate ideas for new products (Jouret, 2009). It is a worldwide initiative which brings the industry together and accelerates the adoption of breakthrough technologies and products that will contribute to the growth and evolution of the Internet of Things. Awards of U.S. \$250000 are given as cash prizes which are shared among three winners and which are used to start ventures (Jouret, 2009). Cisco provides winners with mentoring, training, and access to business expertise from Cisco and other supporting organizations. In the first year of inception, the challenge drew more than 2500 entrepreneurs from 104 countries (Hopkins, 2013). The philosophy behind the challenge was simple: “In many parts of the world, you have incredibly smart people with incredibly great ideas who have absolutely no access to capital to take a great idea and turn it into a business” (Hopkins, 2013).

In the first year, the submissions were evaluated based on five main criteria: (1) Does it address a real pain point? (2) Will it appeal to a big enough market? (3) Is the timing right? (4) If we pursue the idea, will we be good at it? (5) Can we exploit the opportunity for the long term? The submissions were evaluated and judged by the public online. Cisco gained insights by analyzing the comments provided by the public. The comments were more useful than the actual votes. The winning entry in the first competition was a plan for a sensor enabled smart-electricity grid (Jouret, 2009). Around 3000 participants from more than 150 countries participated in the second competition. The winning entry was from a team of five university students from Mexico. The entry was based on the idea of “Life Account” that gathered information about users through connected devices in the physical world and online data from the virtual world (Hopkins, 2013). The challenges in the next two years focused on Russia where Cisco had plans for huge investments. One of the winning Russian IoT Grand Challenge teams developed a system that uses a mobile phone as a mediator for transmitting data from sensors to healthcare systems. The system is compatible with all major mobile phone platforms, as well as more than 40 medical devices (Hopkins, 2012).

Over the years, the Cisco I-Prize has got transformed into the Cisco IoT Grand Challenge (Hopkins, 2013). There are six categories for submissions for the challenge: Networking, Applications and Application Enablement, Management, Analytics, Networking, Security or Things. Apart from this, each submission needs to map itself to one of a variety of industries and demonstrate its applications in the industries. The industries include Energy, Manufacturing, Oil and Gas, Education, Healthcare, Retail, Sports and Entertainment, Smart Cities, and Transportation (Hopkins, 2013).

As discussed, crowdsourcing can generate a number of innovative ideas for new product development. However, like advantages, crowdsourcing has its own disadvantages. Companies may be overloaded with ideas. Some of the ideas may not

be good enough in terms of innovativeness, practicality, and feasibility. For example, Cisco Systems sponsored an open innovation challenge called I-Prize (Jouret, 2009). The challenge solicited ideas from external sources. The effort resulted in receiving more than 800 distinct ideas from more than 2900 innovators from 156 countries. The chief technology officer of Cisco says, “The evaluation process was far more labor-intensive than we’d anticipated. It required significant investments of time, energy, patience, and imagination ... to discern the gems hidden within rough stones” (Livingstone, 2010). A team of six Cisco employees invested three months to shortlist 32 semi-finalist ideas and nine teams representing 14 countries in six continents for the finals of the challenge (Livingstone, 2010).

4.3. Interaction With Customers

Companies should be customer-centric while generating ideas for new products. The traditional company-centric approach to product innovation is giving way to a world where companies involve customers in co-creating products. At BlankLabel.com, customers can design their own unique shirts by specifying the cuts, sizes, collars, buttons, cuffs, and pockets (Seybold, 2006).

Companies adopt a number of approaches to draw new ideas from customers. They observe how customers use their products. Medtronic is a medical device company which employs salespeople and market researchers to observe spine surgeons who used their products and also competitive products. Based on the observations and further analysis, Medtronic understands how to improve their own products (MacCormack, Murray, & Wagner, 2013). After living with lower-middle class families in Mexico City, researchers of Procter & Gamble devised Downy Single Rinse, a fabric softener that removed an arduous step from the partly manual laundry process there (Horovitz, 2011).

Companies enquire customers about the problems they face with products. Komatsu Heavy Equipment sent a group of engineers and designers to the United States for six months. The engineers and designers rode with equipment drivers to learn how to make products better (Wallace, 2010). Customers of Procter & Gamble were frustrated that potato chips break and are difficult to store after opening the bag. Based on this feedback, the company designed Pringles to be uniform in size and encased in a protective tennis-ball-type can (MacCormack et al., 2013).

Customers reveal their wants and desires when they are asked about their dream products. Companies should ask customers about what they expect the products to do, even if the ideal seems impossible. For example, a 70-year-old camera user told Minolta that he would like the camera to make his subjects look better and not show their wrinkles and aging. This customer insight helped Minolta to develop a camera with two lenses. One lens was for rendering softer images of the subjects (Horovitz, 2011).

Companies set up customer advisory board where the board members judge companies’ ideas. For example, Levi Strauss uses youth panels to discuss lifestyles, habits, values, and brand engagements (Raasch & Von Hippel, 2013). Cisco employs

Customer Forums to improve its offerings. Harley-Davidson has started Harley Owners Group (H.O.G.) where the members generate product ideas (Horovitz, 2011).

Companies use their own websites to collect ideas from individuals. For example, P&G's corporate global website has a "Share Your Thoughts" section to gain advice and feedback from customers (Dishman, 2012). Companies also use specialized search engines such as Technorati to find blogs and postings relevant to their businesses.

Brand communities of enthusiasts are formed by companies. The members discuss about product developments. For example, Harley-Davidson and Apple have strong brand enthusiasts and advocates. Sony collaborates with its customers to co-develop its Play Station products. LEGO draws on kids and influential adult enthusiasts for feedback on new product concepts in early stages of development (Raasch & Von Hippel, 2013).

Companies encourage customers to change or improve the products. Salesforce.com encourages its customers to develop and share new software applications using simple programming tools. Customers of International Flavors & Fragrances (IFF) are provided with toolkits based on which they can modify certain flavors. IFF then manufactures such flavors (Horovitz, 2011). LSI Logic Corporation provides its customers with "do-it-yourself" toolkits based on which customers can design their own specialized chips. BMW posted a toolkit on its website to allow customers to develop ideas using telematics and in-car online services (Schreier, Fuchs, & Dahl 2012).

Co-creation of ideas helps both customers and companies. Co-creation helps in producing new and better ideas (Schreier et al., 2012). At the same time, customers feel important and closer to the company. They feel that they have a say in innovation. Consequently, they create a favorable word of mouth. It is however, critical to get the right customers engaged in the right way (Seybold, 2006).

Lead users help companies in generating better ideas. Such ideas act as sources of input for innovative products. Sometimes, consumers help in innovating products without the consent or knowledge of the companies that produce them (Raasch & Von Hippel, 2013). For example, youngsters who took their bikes to the mountain tops and came down, helped to develop mountain bikes. When the bikes broke, the youngsters began building more durable bikes. They incorporated new features like improved brakes and suspension systems, and accessories. It was they, and not bike companies who developed these innovations (Hoffman et al., 2010).

Companies and brands which wish to appeal to younger and leading-edge consumers, bring their lead users into the product design process (Morrison, Roberts, & Midgley, 2004). Technical companies can learn a great deal by studying customers who make the most advanced use of the company's products and who recognize the need for improvements before other customers do. In a business-to-business market, distributors and retailers who are located far away and are not in regular contact with companies can provide more diverse insights which companies might not have thought of (Henke & Zhang, 2010). Collecting information from such distributors and retailers becomes effective for companies towards generating new ideas.

Customers can be a great source of new product ideas. Customers are the individuals who use the products and services offered by companies. So, customers are in a better position to provide ideas and suggestions. Companies can analyze customer questions and complaints to find new products that better solve consumer problems. For example, the LEGO Group encourages its customers to submit new product ideas on a regular basis. Customers can log on to the LEGO Ideas website and submit their inputs (Ringen, 2015).

At the LEGO Ideas website, the giant toy maker converts ideas provided by customers into new LEGO building sets. The website invites customers to submit their own ideas and to evaluate and vote ideas submitted by others. Ideas supported by 10000 or more votes are selected by the LEGO Review Board for an internal review by various departments including sales, marketing, and design. Ideas which clear the review process are made into official LEGO products (Ringen, 2015). Customers whose ideas are considered and reach production are rewarded by LEGO. Such customers earn one percent of total net sales of the product and receive credit as the LEGO Ideas set creator inside every set sold. The initiative resulted in 12 major new products. The products include the LEGO Labyrinth Marble Maze, LEGO WALL●E, LEGO Big Bang Theory, LEGO Doctor Who, Back to the Future DeLorean Time Machine, LEGO Ghostbusters, and LEGO Birds (Ringen, 2015).

Companies, however, do not always rely on customer insights only to create better and new products (Goldenberg, Horowitz, Levav, & Mazursky, 2003). As Henry Ford famously said, “If I’d asked people what they wanted, they would have said a faster horse” (Fang, 2008). Experts caution that being overly focused on consumers, who may not really know what they want, or what could be possible, can result in shortsighted product development and miss real potential breakthroughs (Goldenberg et al., 2003). Several companies like Apple and IKEA incorporate user inputs with caution. Some other companies believe that focusing on lead users results in incremental and not in breakthrough innovation (Skibsted & Hansen, 2011).

4.4. Analysis of Competitors

Competitors can be an invaluable source of innovative ideas. Companies keep track of actions of their competitors to gain knowledge about competitive products. They watch competitors’ advertisements to understand about product launches by competitors. They buy products launched newly by competitors, analyze them and try to understand their working principles, keep track of their sales, and decide how to launch a new product based on the knowledge of competitive products (Raassens et al., 2012). Other external ideas sources include trade magazines, shows, websites, seminars, government agencies, marketing research firms, advertising agencies, university and commercial laboratories, and inventors.

Analysis of products marketed by competitors provides companies with invaluable insights which they can convert into innovative ideas (Raasch & Von Hippel, 2013). They can find out what customers like and dislike about competitors’ products. Many companies buy their competitors’ products, take them apart, and build better ones.

They can ask their own sales representatives and intermediaries for ideas. These individuals are the first to interact with customers directly. To many customers, sales representatives are the company. Since sales representatives interact directly with customers, they are in a better position to understand customer wants, requirements, and preferences. Sales representatives are also the first to know about competitors (Von Hippel, 2005). Electronic retailer Best Buy even checks with venture capitalists to find out what start-ups they are working on (Raasch & Von Hippel, 2013).

Marketers require a thorough understanding of the competition to establish the optimal brand positioning for the new product. Proper knowledge of the competition also helps companies to establish the right points-of-parity and points-of-differences (Fang, 2008).

Tough competition in the video game console industry among Sony, Microsoft, and Nintendo has spurred innovation and each firm attempts to get ahead of the others (Kain, 2013). Manufacturers of video game consoles face tough competition to capture the minds and hearts of more than one billion gamers worldwide. More than 220 million gamers live in the United States (Kain, 2013). Microsoft's Xbox One and Sony's PS4 had a tough competition between themselves in the holiday season of 2013 (Sherr, 2013). Both the brands added many new features to attract the attention of customers. The features included motion-detection cameras to allow gamers to play using gestures to technology linking the gaming console to a smart phone or tablet. Xbox One was priced at \$499 while PS4 was priced at \$399 (Kain, 2013). Microsoft also lost the PR battle when it announced policies which were not user-friendly and which angered customers. The policies were related to restrictions on the process of gaming and sharing games. The company had a tough act to follow. The earlier model, Xbox 360 brought significant power and online functionality to gamers. Xbox 360 also introduced Achievements and the gamer score to facilitate competitors (Sherr, 2013). Xbox 360 had sales which exceeded 75 million units. It also attracted more than 40 million users into Microsoft's Xbox Live connected gaming service. The third major player, Nintendo offered Wii gaming system which found success in 2006. Contrary to the industry standards, Nintendo offered a cheaper, lower-power chip with fewer graphics capabilities. The features allowed a different style of play based on physical gestures. Wii had a sleek white design and motion-sensitive wireless controller. Such features made Wii much more engaging and interactive. Nintendo also decided to embrace outside software developers. This allowed Nintendo to have new titles quickly becoming available. Even non-gamers were attracted because of its collaborative nature and capabilities. Seasoned players focused more on mastering its intriguing games (Fackler, 2007). Nintendo followed up its success with the introduction of Wii U in 2012. However, Wii U was unable to hold the same interest among gamers. Nintendo had to face a tough fight against its two chief competitors (Stone, 2012).

4.5. Adoption of Creativity Techniques

Innovative companies adopt and apply a number of creativity techniques to generate ideas for new products (Fisher, 2013).

4.5.1. *Brainstorming*

Companies conduct internal brainstorming sessions to generate new ideas. Brainstorming sessions are effective if they are conducted correctly. Group brainstorming sessions can create insights, ideas, and solutions because a number of individuals from diverse backgrounds participate in such sessions (Peace, 2012). However, if conducted incorrectly, such sessions can be a painful waste of time and can frustrate and antagonize participants. Experts suggest a number of measures to ensure success of brainstorming sessions (Tischler, 2007).

Brainstorming sessions should be moderated by a trained facilitator who guides the session. Companies should also use the right environment to conduct such sessions (Tischler, 2007). Participants for the sessions should be chosen judiciously. Participants should be from diverse backgrounds and interests which may provide different viewpoints. Also, viewpoints of one participant may be validated by the viewpoints of other participants (Fisher, 2013). Participants should view themselves as collaborators working towards a common goal rather than only providing suggestions and viewpoints (Tischler, 2007). Brainstorming sessions are conducted to generate free flow of ideas. However, rules need to be set up and followed so that the discussions have fruitful outcomes. Some structure is needed, though flexibility is desired too (Peace, 2012). Participants should be briefed before the sessions commence. They should be given proper background preparation and materials so that they can get into the task quickly (Peace, 2012). Individual sessions before and after the brainstorming can be useful for thinking and learning about the topic ahead of time and for reflecting afterward on what happened (Sutton, 2006). Participants should be encouraged to think and express their views freely and constructively without getting influenced by others. Participants should be given time to think and gather their thoughts based on their knowledge and then express their views (Sutton, 2006). Participants may be encouraged to think critically, identify and challenge existing assumptions, role-play some aspects of the situation they are analyzing, or consider borrowing ideas from other firms, even outside the industry (Myser, 2006). Brainstorming sessions should have a clear purpose which needs to come out in its plan of action and implementation. This helps in materialization of ideas and in providing tangible value (Fisher, 2013). Brainstorming sessions are more than generating ideas. They help in building teams, sense of participation, and leave participants better informed and energized (Peace, 2012).

Creativity does not follow rules and regulations and is mostly about making connections in ways that are not obvious. Companies follow a number of techniques for stimulating creativity in individuals and groups (Dahl and Moreau, 2002).

1. **Listing of Attributes:** The attributes of a product may be listed at first. For example, for a screwdriver, after listing the attributes, each attribute may be modified such as replacing the wooden handle with plastic, providing torque power, adding different screw heads, and so on.

2. **Formed Forced Relationships:** Several ideas may be listed and relationships may be formed among the ideas. For example, while designing new office furniture, a desk, bookcase, and filing cabinet may be considered as separate ideas. A desk may be imagined with a built-in bookcase or a desk with built-in files, or a bookcase with built-in files.
3. **Morphological Analysis:** Analysts may start with an individual problem such as “getting something from one place to another via a powered vehicle”. Dimensions related to mobility such as the type of platform (cart, chair, sling, bed), the medium (air, water, oil, rails), and the power source (compressed air, electric motor, magnetic fields). By listing and linking every possible combination, many new solutions can be generated.
4. **Reverse-Assumption Analysis:** All the normal assumptions about a product may be listed and the assumptions may be reversed to generate new ideas. For example, instead of assuming that a restaurant has menus, charges for food, and serves food, each assumption may be reversed. The new restaurant may decide to serve only what the chef bought that morning, provide some food but charge for the time the person sits at the table, or design an exotic atmosphere, and rent the place to people who bring their own food and beverages.
5. **New Contexts:** Familiar processes may be taken and such processes may be thought of with respect to a new context. People-helping services may be extended to services such as helping dogs and cats with day care services, stress reduction, psychotherapy, funerals, and so on. Instead of sending hotel guests to the front desk to check in, they may be greeted at curbside. Instead of registering guests at the registration desk, a wireless device may be used to register them.
6. **Mind Mapping:** The process may be started with an idea, such as a car, and then the next idea which comes up may be considered. The idea may be linked to a car. For example, Mercedes may be linked with Germany which is the next association as the place of origin. The process of generating associations that come up with each new word may be connected to form a coherent picture. Perhaps a whole new idea will materialize.
7. **Lateral Marketing:** New product ideas can arise from lateral marketing. Lateral marketing combines two product concepts or ideas to create a new offering (Kotler & de Bes, 2003). For example, Kinder Surprise combined candy with a toy. Cereal bars are a successful combination of cereal and snacking (Boyd & Golderberg, 2013).

5. DISCUSSIONS

Companies face tough competition and the current products require replacement from newer products. Companies should encourage innovation to develop new products. However, the rewards of innovation come along with risks. The key to successful innovation lies in a customer-focused, holistic, total company effort; strong planning; and a systematic new product development process.

Companies require generating and developing new product ideas. They do so from many and varied sources. Many new product ideas stem from internal sources. Companies conduct formal R&D, or they pick the brains of their employees. They urge both R&D and their other employees to think about and develop new product ideas. External sources also contribute to generation of new product ideas. Companies track competitors' offerings and obtain ideas from distributors and suppliers who are close to the market and can pass along information about customer problems and new product possibilities.

Customers act as a major source of new product ideas. Customers are the individuals who use the products. So, insights about products can be obtained from customers. Companies observe customers, invite them to submit their ideas and suggestions, or even involve customers in the new product development process. Many companies organize programs to generate new product ideas. They develop crowdsourcing and open-innovation new product idea programs. In such initiatives, companies invite broad communities of people – customers, employees, independent scientists and researchers, and even the general public – into the new product innovation process. New product ideas get generated from multiple sources and truly innovative companies do not rely on a single source for such ideas.

A company cannot succeed in the competition unless it does continual innovation. Innovation helps companies to meet and exceed customer expectations. Innovation requires generating, identifying, and evaluating ideas. Generation of ideas requires an in-depth understanding of customer requirements and preferences. It also requires understanding the capabilities of a company and its motivation for researching new ideas.

Apart from the sources mentioned above for generating new product ideas, frontline employees and salespersons appointed by companies act as major sources. They are the individuals who come in direct contact with customers. They will be in a better position to have an understanding about customers and their requirements than others. Top management of companies may help in generating new product ideas. Innovation is not possible without support and cooperation from the top management. Companies may adopt several creativity techniques for generating ideas. Brainstorming, role-playing, forming forced relationships, morphological analysis, reversing of assumptions about usage of products, mind mapping of individuals, and lateral marketing are some of the techniques. Companies require having an integrated approach including the above-mentioned techniques for generating innovative ideas.

5.1. Contributions of the Paper

The contribution of the paper lies in the fact that an in-depth discussion of the various techniques for generating innovative ideas was done. Ideas for innovation may be generated from a number of sources. These include internal idea sources, external idea sources, and adopting creativity techniques. Internal idea sources include research and development and employees. External idea sources include customers, competitors, and various other stakeholders. Creativity techniques include brainstorming,

crowdsourcing, role-playing, morphological analysis, and lateral marketing. The advantages and the disadvantages of the various idea sources and techniques were discussed. The discussions have both theoretical and practical implications. Based on the discussions presented, academicians may conduct a further review of the process of innovation and the techniques adopted by companies to generate ideas for innovation, and suggest improved techniques.

5.2. Managerial Implications

Practicing managers will realize the importance of generating ideas for innovation, understand the techniques for generating innovative ideas, investigate about the techniques which are already in place in their organizations, and implement additional creative techniques for generating ideas. Managers will also realize that the process of innovation requires hard work, dedication, and substantial investment of resources. Also, managers should be willing to take risks, accept failures, and learn from those failures. Innovation may not always bring success initially. However, experiences gained from initial failures may be applied in fruitful ventures in future.

6. CONCLUSION

The paper discussed various aspects of innovation and the techniques adopted by companies to generate innovative ideas. Efforts were made to include the relevant and the latest literature related to product innovation and generation of ideas for new product development. However, innovation is an evolving field with developments taking place on a continual basis. Practicing managers, academicians, and researchers should keep themselves updated about the latest trends and developments.

6.1. Future Research Avenues

Researchers may review and critically analyze the processes and techniques suggested for generation of ideas in new product development. Innovation in new product development requires substantial investment and effective allocation of resources. Companies perform feasibility analysis before investing in innovation. Researchers may analyze the feasibility and the practicality of the various sources and techniques applied for generating new product ideas. They may apply those sources and techniques which generate better ideas, are cost-effective, and which can be implemented for success in the long run.

REFERENCES

- Aboulnasr, K., Narasimhan, O., Blair, E., & Chandy, R. (2008). Competitive Response to Radical Product Innovation. *Journal of Marketing*, 72(3), 94–110. doi:10.1509/JMKG.72.3.094
- ATT.COM. (2013). *The Ultimate Employee Collaboration Platform*. www.att.com/Common/about_us/innovation_pipeline_092013.pdf
- Barone, M. J., & Jewell, R. D. (2013). The Innovator's License: A Latitude to Deviate from Category Norms. *Journal of Marketing*, 77(1), 120–134. doi:10.1509/jm.10.0145
- Beer, J. (2015, October 15). Why Under Armour's Future Show Is Key to Its Brand Innovation Strategy. *Fast Company*.
- Boyd, D., & Goldenberg, J. (2013, June 14). Think Inside the Box. *Wall Street Journal*.
- Brown, B., & Anthony, S. D. (2011). How P&G Tripled Its Innovation Success Rate. *Harvard Business Review*, 89(6), 64–72.
- Carson, S. J. (2007). When to Give Up Control of Outsourced New-Product Development. *Journal of Marketing*, 71(1), 49–66. doi:10.1509/jmkg.71.1.049
- Chaey, C. (2012, December 7). LinkedIn Launches an Incubator to Turn Employees into Entrepreneurs. *Fast Company*.
- Cooper, R. G., & Edgett, S. J. (2008, March). Ideation for Product Innovation: What are the Best Methods?. *PDMA Visions*, 12-17.
- Crawford, M., & Di Benedetto, A. (2011). *New Products Management* (10th ed.). McGraw-Hill.
- Dahl, D. W., & Moreau, P. (2002). The Influence and Value of Analogical Thinking during New Product Ideation. *JMR, Journal of Marketing Research*, 39(1), 47–60. doi:10.1509/jmkr.39.1.47.18930
- Dishman, L. (2012, July 13). How Outsiders Get Their Products to the Innovation Big League at Procter & Gamble. *Fast Company*.
- Dotzel, T., Shankar, V., & Berry, L. L. (2013). Service Innovativeness and Firm Value. *JMR, Journal of Marketing Research*, 50(2), 259–276. doi:10.1509/jmr.10.0426
- Fackler, M. (2007, June 8). Putting the We Back in Wii. *New York Times*.
- Fang, E. (2008). Customer Participation and the Trade-Off Between New Product Innovativeness and Speed to Market. *Journal of Marketing*, 72(4), 90–104. doi:10.1509/jmkg.72.4.090
- Fisher, A. (2013, August 23). Why Most Brainstorming Sessions Fail. *Fortune*.
- Gielens, K. (2012). New Products: The Antidote to Private Label Growth? *JMR, Journal of Marketing Research*, 49(3), 408–423. doi:10.1509/jmr.10.0183

Goldenberg, J., Horowitz, R., Levav, A., & Mazursky, D. (2003). Find Your Innovation Sweet Spot. *Harvard Business Review*, 81(3), 120–129. PMID:12632810

Griffin, A. J., & Hauser, J. R. (1993). The Voice of the Customer. *Marketing Science*, 12(1), 1–27. doi:10.1287/mksc.12.1.1

Henke, J. W., & Zhang, C. (2010). Increasing Supplier-Driven Innovation. *MIT Sloan Management Review*, 51(2), 41–46.

Hoffman, D. L., Kopalle, P. K., & Novak, T. P. (2010). The ‘Right’ Consumers for Better Concepts: Identifying and Using Consumers High in Emergent Nature to Further Develop New Product Concepts. *JMR, Journal of Marketing Research*, 47(5), 854–865. doi:10.1509/jmkr.47.5.854

Hopkins, B. (2012, October 8). *Companies Increasingly Use Crowdsourcing Strategically: Cisco’s I-Prize*. www.yannigroth.com

Hopkins, B. (2013, September 18). *Mobile Medical Platform MedM Wins Cisco I-Prize*. www.rusbase.com

Horovitz, B. (2011, March 24). Savvy Marketers Let Consumers Call the Shots. *USA Today*.

Horovitz, B. (2013, October 20). Under Armour Seeks Ideas for Its Next Big Thing. *USA Today*.

Huston, L., & Sakkab, N. (2006). Connect and Develop. *Harvard Business Review*, 84(3), 58–66.

Inada, M. (2008, August 24). Tokyo Café Targets Trend Makers. *Wall Street Journal*.

Joshi, A. W., & Sharma, S. (2004). Customer Knowledge Development: Antecedents and Impact on New-Product Performance. *Journal of Marketing*, 68(4), 47–59. doi:10.1509/jmkg.68.4.47.42722

Jouret, G. (2009). Inside Cisco’s Search for the Next Big Idea. *Harvard Business Review*, 87(9), 43–45.

Kain, E. (2013, July 25). Xbox One Vs. PS4: Why Sony Is Still the Best Choice for Gamers. *Forbes*.

King, A., & Lakhani, K. R. (2013). Using Open Innovation to Identify the Best Ideas. *MIT Sloan Management Review*, 55(1), 41–48.

Kotler, P., & de Bes, F. T. (2003). *Lateral Marketing: New Techniques for Finding Breakthrough Ideas*. Wiley.

Lafley, A. G., & Charan, R. (2009). *The Game Changer: How You Can Drive Revenue and Profit Growth Through Innovation*. Crown Business.

Livingstone, G. (2010, October 12). Real Challenges to Crowdsourcing for Social Good. *Mashable*.

- MacCormack, A., Murray, F., & Wagner, E. (2013). Spurring Innovation through Competitions. *MIT Sloan Management Review*, 55(1), 25–32.
- Machlis, S. (2009, February 2). *Innovations: Technology, Governance, Globalization*. Computerword.
- Martinez, M. (2015, January 22). Ford Opens Silicon Valley Innovation Center. *The Detroit News*.
- Martinez, M. (2016, September). Chick-fil-A Innovation. *Matchistic*.
- Morgan, J. (2015, April 15). Five Uncommon Internal Innovation Examples. *Forbes*.
- Morrison, P. D., Roberts, J. H., & Midgley, D. F. (2004). The Nature of Lead Users and Measurement of Leading Edge Status. *Research Policy*, 33(2), 351–362. doi:10.1016/j.respol.2003.09.007
- Myser, M. (2006, October). When Brainstorming Goes Bad. *Business (Atlanta, Ga.)*, 2(0), 76.
- Overholt, A. (2011, October 17). American Idol: Accounting Edition. *Fortune*.
- Peace, N. (2012, April 9). Why Most Brainstorming Sessions Are Useless. *Forbes*.
- Raasch, C., & Von Hippel, E. (2013). Innovation Process Benefits: The Journey as Reward. *MIT Sloan Management Review*, 55(1), 33–39.
- Raassens, N., Wuyts, S., & Geyskens, I. (2012). The Market Valuation of Outsourcing New Product Development. *JMR, Journal of Marketing Research*, 49(5), 682–695. doi:10.1509/jmr.09.0317
- Ringen, J. (2015, January 8). How LEGO Became the Apple of Toys. *Fast Company*.
- Rothaermel, F. T., & Hess, A. M. (2010). Innovation Strategies Combined. *MIT Sloan Management Review*, 51(3), 13–15.
- Rubera, G., & Kirca, A. H. (2012). Firm Innovativeness and Its Performance Outcomes: A Meta Analytic Review and Theoretical Integration. *Journal of Marketing*, 76(3), 130–147. doi:10.1509/jm.10.0494
- Schreier, M., Fuchs, C., & Dahl, D. W. (2012). The Innovation Effect of User Design: Exploring Consumers' Innovation Perceptions of Firms Selling Products Designed by Users. *Journal of Marketing*, 76(5), 18–32. doi:10.1509/jm.10.0462
- Scott, K. (2012). *The LinkedIn [in]cubator*. <https://blog.linkedin.com/2012/12/07/linkedin-incubator/>
- Seybold, P. (2006). *Outside Innovation: How Your Customers Will Codelign Your Company's Future*. Collins. doi:10.1571/i10-05-06cc
- Sherr, I. (2013, June 11). Sony Boosts Initial Internal Sales Estimates for its PlayStation 4. *Wall Street Journal*.

Skibsted, J. M., & Hansen, R. B. (2011, February 15). User-Led Innovation Can't Create Breakthroughs; Just Ask Apple and Ikea. *Fast Company*.

Srinivasan, S., Pauwels, K., Silva-Risso, J., & Hanssens, D. M. (2009). Product Innovations, Advertising, and Stock Returns. *Journal of Marketing*, 73(1), 24–43. doi:10.1509/jmkg.73.1.024

Stone, B. (2012, January 13). Nintendo Wii to Add Netflix Service for Streaming Video. *New York Times*.

Sutton, R. I. (2006, September). Eight Rules to Brilliant Brainstorming. *BusinessWeek in Inside Innovation*, 17-21.

Tischler, L. (2007, May). Be Creative: You Have 30 Seconds. *Fast Company*, 47-50.

Von Hippel, E. (2005). *Democratizing Innovation*. MIT Press. doi:10.7551/mitpress/2333.001.0001

Wallace, A. (2010, May 15). Putting Customers in Charge Of Design. *New York Times*.

Pratap Chandra Mandal is an Assistant Professor (Marketing) in Indian Institute of Management, Shillong, India. He has completed graduate degree from the reputed Indian Institute of Technology, Kharagpur (IIT Kharagpur), India (Bachelor of Technology in Mechanical Engineering), post-graduate degree from Vinod Gupta School of Management, IIT Kharagpur (Masters in Business Administration), PhD (Marketing) from Vinod Gupta School of Management, IIT Kharagpur. His research concerns customer relationship management, customer satisfaction, services marketing, marketing intelligence, and qualitative methods in management. He is the editor-in-chief of two international journals and is on the editorial board of journals like Journal of Global Marketing. Pratap has won several prestigious scholarships and awards throughout his academic career.