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Chapter 1 : Diffusion of Innovations, 5th Edition - Everett M. Rogers - Google Books

Cultivating a Robust Organization: 5 Stages of the Innovation Process. Posted April 21, by Brian Neese. Most business leaders recognize the value of innovation. In a study from consulting firm Accenture, 96 percent of executives surveyed said that their organization's long-term success depends on developing new ideas.

Whenever his enemies have the ability to attack the innovator, they do so with the passion of partisans, while the others defend him sluggishly, so that the innovator and his party alike are vulnerable. Many innovations require a lengthy period of many years from the time when they become available to the time when they are widely adopted. Therefore, a common problem for many individuals and organizations is how to speed up the rate of diffusion of an innovation. The following case illustration provides insight into some common difficulties facing diffusion campaigns. Water Boiling in a Peruvian Village: Diffusion That Failed The public health service in Peru attempts to introduce innovations to villagers to improve their health and lengthen their lives. This change agency encourages people to install latrines, burn garbage daily, control house flies, report cases of infectious diseases, and boil drinking water. These innovations involve major changes in thinking and behavior for Peruvian villagers, who do not understand the relationship of sanitation to illness. Water boiling is an especially important health practice for Peruvian villagers. Unless they boil their drinking water, patients who are cured of an infectious disease in a medical clinic often return within a short time to be treated again for the same disease. A two-year water-boiling campaign conducted in Los Molinas, a peasant village of two hundred families in the coastal region of Peru, persuaded only eleven housewives to boil water. From the viewpoint of the public health agency, the local health worker, Nelida, had a simple task: To understand why, we need to take a closer look at the culture, the local environment, and the individuals in Los Molinas. Most residents of Los Molinas are peasants who work as field hands on local plantations. Water is carried by can, pail, gourd, or cask. The three sources of water in Los Molinas include a seasonal irrigation ditch close to the village, a spring more than a mile away from the village, and a public well whose water most villagers dislike. All three sources are subject to pollution at all times and show contamination whenever tested. Of the three sources, the irrigation ditch is the most commonly used. It is closer to most homes, and the villagers like the taste of its water. Although it is not feasible for the village to install a sanitary water system, the incidence of typhoid and other waterborne diseases could be greatly reduced by boiling water before it is consumed. During her two-year campaign in Los Molinas, Nelida made several visits to every home in the village and devoted especially intensive efforts to twenty-one families. She visited each of the selected families between fifteen and twenty-five times; eleven of these families now boil their water regularly. What kinds of people do these numbers represent? We describe three village housewives: A is about forty and suffers from a sinus infection. The Los Molinas villagers call her the "sickly one. A boils a potful of water, which she uses throughout the day. She has no understanding of germ theory, as explained by Nelida. Her motivation for boiling water is a complex local custom of "hot" and "cold" distinctions. The basic principle of this belief system is that all foods, liquids, medicines, and other objects are inherently hot or cold, quite apart from their actual temperature. In essence, the hot-cold distinction serves as a series of avoidances and approaches in such behavior as pregnancy, child rearing, and the health-illness system. Boiled water and illness are closely linked in the norms of Los Molinas. By custom, only the ill use cooked, or "hot" water. If an individual becomes ill, it is unthinkable to eat pork very cold or drink brandy very hot. Extremes of hot and cold must be avoided by the sick; therefore, raw water, which is perceived to be very cold, must be boiled to make it appropriate. Villagers learn from early childhood to dislike boiled water. Most can tolerate cooked water only if a flavoring, such as sugar, lemon, or herbs, is added. A likes a dash of cinnamon in her drinking water. The village belief system does not involve the notion of bacteriological contamination of water. By tradition, boiling is aimed at eliminating the "cold" quality of unboiled water, not the harmful bacteria. A drinks boiled water in obedience to local norms, because she perceives herself as ill. She adopted the innovation, but for the wrong reason. Persuaded Adopter The B family came to Los Molinas a generation ago, but they are still strongly oriented toward their birthplace in the high Andes. B worries about lowland diseases that she feels

infest the village. It is partly because of this anxiety that the public health worker, Nelida, was able to convince Mrs. B to boil water. B, Nelida is a friendly authority rather than a "dirt inspector," as she is seen by other housewives who imparts useful knowledge and brings protection from uncertain threats. B not only boils water but has also installed a latrine and sent her youngest child to the health center for a checkup. B is marked as an outsider in the community by her highland hairdo and stumbling Spanish. She will never achieve more than marginal social acceptance in the village. Because the community is not an important reference group to her, Mrs. B can deviate from the village norms on health innovations. With nothing to lose socially, Mrs. She is grateful to Nelida for teaching her how to neutralize the danger of contaminated water, which she perceives as a lowland peril. Rejector This housewife represents the majority of Los Molinas families who were not persuaded by the efforts of the change agent during the two-year water-boiling campaign. C does not understand germ theory. How, she argues, can microbes survive in water that would drown people? If germs are so small that they cannot be seen or felt, how can they hurt a grown person? There are enough real threats in the world to worry about -- poverty and hunger -- without bothering about tiny animals that one cannot see, hear, touch, or smell. A firm believer in the hot-cold superstition, she feels that only the sick should drink boiled water. This intensive two-year campaign by a public health worker in a Peruvian village of two hundred families, aimed at persuading housewives to boil drinking water, was largely unsuccessful. Nelida was able to encourage only about 5 percent of the population, eleven families, to adopt the innovation. The diffusion campaign in Los Molinas failed because the innovation was perceived as culturally inappropriate by the villagers. Local tradition links hot foods with illness. Boiling water makes water less "cold" and hence appropriate only for the sick. If a person is not ill, he or she is prohibited by village norms from drinking boiled water. Only individuals who are not integrated into local networks risk defying the community norm on water boiling. An important factor regarding the adoption rate of an innovation is its compatibility with the values, beliefs, and past experiences of individuals in the social system. Nelida and her superiors in the public health agency should have understood the hot-cold belief system, as it is found throughout Peru and in most nations of Latin America, Africa, and Asia. The indigenous knowledge system caused the failure of the diffusion effort for water boiling in Los Molinas. Socially an outsider, Mrs. B was marginal to the Los Molinas community, although she lived there for several years. Nelida was a more important referent for Mrs. B than were her neighbors, who shunned her. Anxious to win reflected social prestige from the higher-status Nelida, Mrs. Thus we see that the diffusion of innovations is a social process, even more than a technical matter. Nelida worked with the wrong housewives if she wanted to launch a self-generating diffusion process in Los Molinas. She concentrated her efforts on village women such as Mrs. Unfortunately, they were perceived as a sickly one and a social outsider, respectively, and were not perceived as social models of water-boiling behavior by the other women. The village opinion leaders, who could have activated local networks to spread the innovation, were ignored by Nelida. As a result, the rate of adoption of the innovation did not reach a critical mass, after which the diffusion process would have become self-sustaining. How potential adopters view a change agent affects their willingness to adopt new ideas. In Los Molinas, Nelida was perceived differently by lower- and middle-status housewives. Most poor families saw the health worker as a "snooper" sent to Los Molinas to pry for dirt and to press already harassed housewives into keeping cleaner homes. Because the lower-status housewives had less free time, they were unlikely to talk with Nelida about water boiling. Their contacts outside the community were limited, and as a result, they saw the technically proficient Nelida with eyes bound by the traditional beliefs of Los Molinas. They distrusted this outsider, whom they perceived as a social stranger. Nelida, who was middle class by Los Molinas standards, was able to secure more positive results from housewives whose socioeconomic status and cultural background were more similar to hers. This tendency for more effective communication to occur with those who are more similar to a change agent occurs in most diffusion campaigns. Unfortunately, those individuals who most need the help provided by the change agent are least likely to accept it. Nelida was "innovation-oriented" rather than "client-oriented. Nelida talked to villagers about germ theory, which they could not and did not need to understand. These factors produced the diffusion failure in Los Molinas. Once the remainder of the book has been read, it will be easier to understand the water-boiling case. Diffusion is the

process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication, in that the messages are concerned with new ideas. Communication is a process in which participants create and share information with one another in order to reach a mutual understanding. This definition implies that communication is a process of convergence or divergence as two or more individuals exchange information in order to move toward each other or apart in the meanings that they give to certain events. We think of communication as a two-way process of convergence, rather than as a one-way, linear act in which one individual seeks to transfer a message to another in order to achieve certain effects Rogers and Kincaid,

Chapter 2 : Diffusion of Innovation Theory | Canadian Journal of Nursing Informatics

Diffusion of innovations is a theory that seeks to explain how, why, and at what rate new ideas and technology spread. Everett Rogers, a professor of communication studies, popularized the theory in his book Diffusion of Innovations; the book was first published in , and is now in its fifth edition ().

Tarde attempted to explain why some innovations are adopted and spread throughout a society, while others are ignored. At the beginning of the twentieth century, Tarde was witness to the development of many new inventions, many of which led to social and cultural change. In his book The Laws of Imitation , Tarde introduced the S-shaped curve and opinion leadership, focusing on the role of socioeconomic status for example, a cosmopolitan individual is more likely to adopt new products. Even though he did not specify and clarify key diffusion concepts, his insights affected the development of many social scientific disciplines such as geography, economics, and anthropology. The basic research paradigm for the diffusion of innovations[edit] The fundamental research paradigm for the diffusion of innovations can be traced to the Iowa study of hybrid seed corn. Bryce Ryan and Neal C. Gross investigated the diffusion of hybrid seed corn among Iowa farmers. According to Lowery and DeFleur , the background of rural sociology should first be understood before one can discuss how and why the hybrid seed corn study was conducted. After World War II, rural sociologists changed their research focus on human problems among farmers because new agricultural technology such as new pesticides, new farm machine, and hybrid seed corn appeared. But in spite of these developments, some farmers ignored or resisted these new innovations. Rural sociologists at land-grant universities in the Midwestern United States such as Iowa State, Michigan State, and Ohio State Universities, performed many diffusion studies to find out the causes of adoption of innovations. One of these efforts was the hybrid seed corn study conducted by Ryan and Gross These researchers attempted to explain why some farmers adopted the hybrid seed corn, while others did not. Gross[edit] Bryce Ryan earned a Ph. D in sociology at Harvard University. During his doctoral studies, Ryan was required to take interdisciplinary courses in economics, anthropology, and social psychology. This intellectual background helped him conduct the diffusion studies. In , Ryan became a professor at Iowa State University which is known for its agricultural focus. At that time, Iowa State administrators were worried about the slow rate at which the hybrid seed corn was being adopted. Despite the fact that the use of this new innovation could lead to an increase in quality and production, an advantageous adoption by Iowa Farmers was slow. Contrary to previous research, which employed anthropological style approaches using qualitative methods, Ryan employed a quantitative survey method in his study. Ryan asked him to conduct interviews with Iowa farmers through survey research. Gross gathered the data from the Iowa communities of Jefferson and Grand Junction. It is also interesting to note that Rogers earned a Ph. However, there were some barriers to prevent Iowa farmers from adopting the hybrid seed corn. One problem was that the hybrid seed corn could not reproduce p. This meant that the hybrid seed was relatively expensive for Iowa farmers, especially at the time of the Depression. Therefore, it is reasonable to assume that, despite the economic profit that the hybrid seed corn brought, its high price made a adoption among Iowa farmers remain slow. According to Lowery and DeFleur , Ryan and Gross sought to explain how the hybrid seed corn came to attention and which of two channels i. They found that each channel has different functions. Ryan and Gross also found that the rate of adoption of hybrid seed corn followed an S-shaped curve, and that there were four different types of adopters. According to Rogers , Ryan and Gross also made a contribution by identifying the five major stages in the adoption process, which were awareness, interest, evaluation, trial, and adoption. Diffusion of a medical drug among doctors[edit] According to Rogers , diffusion theory became more widely accepted after James S. Coleman, Elihu Katz, and Herbert Menzel conducted a study on the diffusion of tetracycline, a new medical drug, in The Pfizer drug company invented this successful new drug and wanted to investigate the effectiveness of their tetracycline advertisements, which were placed in medical journals. The company asked three professors at Columbia University to find out how physicians adopted the new innovation and how mass communication influenced this adoption process. They conducted a survey to gather accurate and reliable data. In addition to this, Coleman et al. The

result shows that the percentage of adoption of the new drug followed an S-shaped curve, but that the rate of tetracycline adoption was faster than the rate of other innovations adoption. The researchers also found that doctors who are cosmopolite were likely to adopt the new drug. One of the most important findings was that doctors who had more interpersonal networks adopted the new medical drug more quickly than those that did not. This meant that interpersonal communication channels with peers had a strong influence on the adoption process. In fact, Rogers mentioned that even though the study of Ryan and Gross became a milestone in diffusion paradigm, they did not measure the interpersonal network links among farmers. In this case, the Columbia University Drug Study made a contribution to identify the importance of social networks in the diffusion process. Rogers[edit] Rogers was born in Carroll, Iowa in He earned his B. For two years during the Korean War, he served in the U. Interestingly, in , he worked on some family planning communication projects in Korea. The experience there led Rogers to dive into the research about why some innovations are adopted while others are ignored. Employed by Michigan State University in , Rogers obtained opportunity to study diffusion in developing countries of Asia, Latin America, and Africa. Meanwhile, he published the book, Diffusion of Innovations, which earned him his academic reputation. The book has become the standard textbook on diffusion theory and it creats applications of diffusion theory in such fields as geography, economics, psychology, political science, and, as previously mentioned, communication. Rogers retired from University of New Mexico in because he was suffering from kidney disease. He died on October 21, An Innovation is an idea, practice or object perceived as new by an individual or other unit of adoption. That is, by sharing communication channels such as interpersonal communication or mass communication people can get information of an innovation and perceive its innovation as useful. Lasswell presented a well-known model of communication that is analyzed as five parts, S-M-C-R-E e. Most innovations have an S-shaped rate of adoption. Diffusion research has attempted to explain the variables that influence how and why users and audience adopt a new information medium, such as the Internet. According to evolution of media technology, interpersonal influences are important even though in the past the individual is usually the unit of analysis. Also, critical mass becomes an important factor in adopting new media because new media are interactive tools and thus are required by many users to gain efficiency. That is, the more people use, the more people get benefits. In this sense, diffusion theory not only can apply to practical things, but also can be related to digital divide. There are five different types of adopters in the diffusion process, according to Innovativeness: Figure 1 shows the relationships between types of adopters divided by innovativeness and their place on the adoption curve. Also, these categories follow a standard deviation curve which is bell-shaped. However, as noted above, different types of innovations e. Shapes of curves of diffusions for innovations Source by: Based on these five criteria, individuals perceive an innovation as new or useful and decide to adopt it. When an individual decides to adopt new media or switch old media with new media, the perceived characteristics of innovations play an important role in reducing some uncertainty about the innovations. Unit of analysis on diffusion theory[edit] Diffusion of innovation theory attempts to explain how an innovation is spread and why it is adopted at both the micro and macro levels of analysis. This characteristic of unit of analysis is due to research methods, such as utilizing a survey to study diffusion. Many studies have focused on individual decisions or adoption. In contrast, diffusion theory considers analysis at both the micro-individual and macro-social levels. This is because studies of diffusion include both an innovation at the micro level, as well as its influence, such as social change, at the macro level. Rogers suggested that the four main elements in the diffusion of innovation process were innovation, communication channels, time, and social system. In terms of communication channels, diffusion of an innovation involves both interpersonal channels micro and mass communication channels macro. By utilizing both mass and interpersonal communication channels, people can get information about an innovation and perceive its usefulness. Therefore, diffusion theory requires both micro-individual and macro-social analysis. Table 1 Needs to be cleaned up using piping! Adoption, diffusion and use of new media. The diffusion tradition has classified people, in terms of demographics, in explaining the variables that influence the adoption of an innovation. For that reason, some scholars often criticize that this theory may not provide a causal explanation of why and how people adopt certain technologies. Nevertheless, when it comes to the use and choice of old and new media, diffusion theory will be suited for

explaining why some people prefer to use the old media or new media, because this theory provides some conceptual guidance for understanding the adoption of some technologies or innovations. According to evolution of media technology, interpersonal influences or channels are important even though in the past the individual is usually the unit of analysis. Also, critical mass becomes an important factor in adopting new media because new media are interactive tools and thus are required to many users for getting efficiency. Markus proposed that the value of an interactive communication medium is associated with the number of other users. For example, in the case of the mp3, a social influence such as peer pressure that interacts with young generation needs to be cool or to gain status drives young people to adopt the mp3 as an innovation. When it comes to the future of diffusion theory, we expect that the popularity of diffusion research will increase because as in recent years, new communication technologies have increased and proliferated. The study showed that interpersonal channels, such as opinion leaders, are more important than the mass media. Unlike magic bullet theory, both of these studies emphasized the role of the opinion leaders and interpersonal communication, such as face-to-face interactions influencing decision-making. References[edit] Alexander, P. Entry barriers, release behavior, and multiproduct firms in the music recording industry. Review of Industrial Organization, 9, Network externalities and critical mass. Telecommunications Policy, 12, University of Chicago Press. Diffusion of a medical drug among doctors. A proposed integration among organizational information requirements, media richness, and structural design.

Chapter 3 : The Diffusion of Innovation â€“ Strategies for Adoption of Products | Interaction Design Founda

Diffusion of Innovation (DOI) Theory, developed by E.M. Rogers in , is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system.

It allows designers and marketers to examine why it is that some inferior products are successful when some superior products are not. The idea of diffusion is not new; in fact it was originally examined by Gabriel Tarde, a French sociologist, in the 19th century. One of the most significant early studies was conducted by Ryan and Gross in This solidified previous research into the adoption of seeds in agricultural communities and provided a strong basis for diffusion research in the future. In his book, Diffusion of Innovations published in , Everett Rogers, a sociology professor, provides a full framework for diffusion of innovation based on over studies into the phenomenon in many different disciplines. Copyright terms and licence: Knowledge The first step in the diffusion of innovation is knowledge. This is the point at which the would-be adopter is first exposed to the innovation itself. They do not have enough information to make a decision to purchase on and have not yet been sufficiently inspired to find out more. At this stage marketers will be looking to increase awareness of the product and provide enough education that the prospective adopter moves to the 2nd stage. Persuasion Persuasion is the point at which the prospective adopter is open to the idea of purchase. They are actively seeking information which will inform their eventual decision. This is the point at which marketers will be seeking to convey the benefits of the product in detail. There will be a conscious effort to sell the product to someone at this stage of the diffusion of innovation. Decision Eventually the would-be adopter must make a decision. They will weigh up the pros and cons of adoption and either accept the innovation or reject it. It is worth noting that this is the most opaque part of the process. Rogers cites this as the most difficult phase on which to acquire intelligence. This is, at least in part, due to the fact that people do not make rational decisions in many instances. They make a decision based on their underlying perceptions and feelings and following the decision they attempt to rationalize that decision. Thus, obtaining an understanding of the decision making process is challenging â€” the reasons given following a decision are not likely to be representative of the actual reasons that a decision was made. Implementation Once a decision to adopt a product has been made the product will, in most cases, be used by the purchaser. This stage is when the adopter makes a decision as to whether or not the product is actually useful to them. They may also seek out further information to either support the use of the product or to better understand the product in context. This phase is interesting because it suggests that designers and marketers alike need to consider the ownership process in detail. How can a user obtain useful information in the post-sale environment? The quality of the implementation experience is going to be determined, to a lesser or greater extent, by the ease of access to information and the quality of that information. Confirmation This is the point at which the user evaluates their decision and decides whether they will keep using the product or abandon use of the product. This phase can only be ended by abandonment of a product otherwise it is continual. For example, you may buy a new car today â€” you are highly likely to keep using the car for a number of years â€” eventually, however, you will probably sell the car and buy a new one. This phase will normally involve a personal examination of the product and also a social one the user will seek confirmation from their peers, colleagues, friends, etc. Diffusion and Adoption It is worth noting that adoption is the process by which a user begins and continues to use a product; diffusion is a measure of the rate of adoption. It considers the relationship not just between any given user and a product but the relationship between all users, each other and the product. Failure of Diffusion Failure for a product to diffuse within a market does not always mean that there is a flaw in the product. It may mean that the product has failed due to competition from other innovations or simply because of a lack of awareness or knowledge. Rogers cites a village called Las Molinas in Peru. This place of poverty had high rates of disease. Villagers did not understand the relationship between cleanliness and their own health. This should have been easy to address; the residents had the resources to devote to hygiene and thus just required education. A campaign team arrived to provide that help. They taught how to boil water for

drinking, to burn garbage to prevent it from contaminating healthy materials, and how to install and use toilets. So was the campaign a success? The educational efforts were confused by the local people. Their impression was, for example, that boiled water was only something that sick people needed. Thus a social stigma developed regarding the consumption of boiled water if you were healthy. The aim is not just to support an individual through the adoption process but rather a community through that process. Understanding each step in the diffusion of adoption allows you to creatively examine how you might influence people at each stage â€" including the final stage of confirmation where a user may begin to influence others in their purchasing decisions too. Get Your Product Used: Acta Sociologica 39 4: Rural Sociology 8 1.

Chapter 4 : Diffusion of Innovation Theory

The diffusion of innovation is the process by which new products are adopted (or not) by their intended audiences. It allows designers and marketers to examine why it is that some inferior products are successful when some superior products are not. The idea of diffusion is not new; in fact it was.

Diffusion of Innovation Theory Diffusion research examines how ideas are spread among groups of people. Diffusion goes beyond the two-step flow theory, centering on the conditions that increase or decrease the likelihood that an innovation, a new idea, product or practice, will be adopted by members of a given culture. Innovations are not adopted by all individuals in a social system at the same time. Instead, they tend to adopt in a time sequence, and can be classified into adopter categories based upon how long it takes for them to begin using the new idea. Adoption of a new idea is caused by human interaction through interpersonal networks. If the initial adopter of an innovation discusses it with two members of a given social system, and these two become adopters who pass the innovation along to two peers, and so on, the resulting distribution follows a binomial expansion. Expect adopter distributions to follow a bell-shaped curve over time Rogers, Adopter Categorization The criterion for adopter categorization is innovativeness. This is defined as the degree to which an individual is relatively early in adopting a new idea then other members of a social system. Innovativeness is considered "relative" in that an individual has either more or less of it than others in a social system Rogers, The above figure shows the normal frequency distributions divided into five categories: Innovators are the first 2. The next 34 percent of the adopters are called the early majority. The 34 percent of the group to the right of the mean are the late majority, and the last 16 percent are considered laggards Rogers, The above method of classifying adopters is not symmetrical, nor is it necessary for it to be so. There are three categories to the left of the mean and only two to the right. While it is possible to break the laggard group into early and late laggards, research shows this single group to be fairly homogenous. While innovators and early adopters could be combined, research shows these two groups as having distinctly different characteristics. The categories are 1 exhaustive, in that they include all units of study, 2 mutually exclusive, excluding from any other category a unit of study already appearing in a category, and 3 derived from one classificatory principle. This method of adopter categorization is presently the most widely used in diffusion research Rogers, Adopter Categories Innovators are eager to try new ideas, to the point where their venturesomeness almost becomes an obsession. Usually, innovators have substantial financial resources, and the ability to understand and apply complex technical knowledge. While others may consider the innovator to be rash or daring, it is the hazardous risk-taking that is of salient value to this type of individual. The innovator is also willing to accept the occasional setback when new ideas prove unsuccessful Rogers, Early adopters tend to be integrated into the local social system more than innovators. The early adopters are considered to be localites, versus the cosmopolite innovators. People in the early adopter category seem to have the greatest degree of opinion leadership in most social systems. They provide advice and information sought by other adopters about an innovation. Change agents will seek out early adopters to help speed the diffusion process. The early adopter is usually respected by his or her peers and has a reputation for successful and discrete use of new ideas Rogers, Members of the early majority category will adopt new ideas just before the average member of a social system. They interact frequently with peers, but are not often found holding leadership positions. As the link between very early adopters and people late to adopt, early majority adopters play an important part in the diffusion process. Their innovation-decision time is relatively longer than innovators and early adopters, since they deliberate some time before completely adopting a new idea. Seldom leading, early majority adopters willingly follow in adopting innovations Rogers, The late majority are a skeptical group, adopting new ideas just after the average member of a social system. Their adoption may be borne out of economic necessity and in response to increasing social pressure. They are cautious about innovations, and are reluctant to adopt until most others in their social system do so first. An innovation must definitely have the weight of system norms behind it to convince the late majority. While they may be persuaded about the utility of an innovation, there must be strong pressure from peers to adopt Rogers, Laggards are traditionalists and

the last to adopt an innovation. Possessing almost no opinion leadership, laggards are localite to the point of being isolates compared to the other adopter categories. Individual laggards mainly interact with other traditionalists. An innovation finally adopted by a laggard may already be rendered obsolete by more recent ideas already in use by innovators. Laggards are likely to be suspicious not only of innovations, but of innovators and change agents as well Rogers, Uses and Gratification Uses and gratification is more a concept of research than a self-contained theory. Even contributors in this field of research find problems with the scope of the research and call uses and gratification an umbrella concept in which several theories reside Infante et al. Researchers in this field argue that scholars have tried to do too much and should limit the scope and take a cultural-empirical approach to how people choose from the abundance of cultural products available. Critics claim the theory pays too much attention to the individual and does not look at the social context and the role the media plays in that social context. Rubin , as cited in Littlejohn , suggests that audience motive research based on uses and gratification research has been too compartmentalized within certain cultures and demographic groups, leading to the assumption this has thwarted synthesis and integration of research results, which are two key ingredients in theory building. The uses and gratification theory is a basic extension of the definition of an attitude, which is a non-linear cluster of beliefs, evaluations, and perceptions. These beliefs, evaluations, and perceptions give individuals latitude over how they employ media in their lives; in other words, how individuals filter, interpret, and convey to others the information received from a medium. A key to this research is that the consumer, or audience member, is the focal point instead of the message. The research views the members of an audience as actively utilizing media contents, rather than being passively acted upon by the media, according to Katz, Blumer, and Gurevitch as cited in Littlejohn When audience members, not the media, are the action takers, the variations taken from the messages received are the intervening variables. A core assumption of uses and gratification research is the assumption that individual needs are satisfied by audience members actively seeking out the mass media Infante et al. In , the researcher identified two types of television viewers. The non-habitual viewer is more goal oriented when watching television and does not necessarily feel that television is important. Expectancy-value theory Another theory to consider under this umbrella of uses and gratification research is expectancy-value theory from information-integration theorist Martin Fishbein Littlejohn, The researcher proposes there are two kinds of belief; belief in something and belief about something. The example used by Fishbein is the person who believes in marijuana as a recreational drug or the person who believes that using marijuana will move on to other drugs and serious crimes in order to continue the habit. The two beliefs about marijuana mentioned above would change dramatically if more serious drugs and crime were evaluated as bad.

DOWNLOAD PDF DIFFUSION OF PROCESS INNOVATIONS

Chapter 5 : Diffusion of Innovations by Everett M. Rogers

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system (5). Given that decisions are not authoritative or collective, each member of the social system faces his/her own innovation-decision that follows a 5-step process ().

The Process of Adopting Innovations in Organizations: VAN DE VEN It is increasingly being recognized that the process of adopting innovations in and by organizations is far more complex than it is by individuals. The former entails all the social, political, and bureaucratic complexities of large organizations, while the latter is largely a marketing effort that informs and persuades individual consumers of a desirable new product or procedure. Yet, the basic model that most management scholars and practitioners appear to use in organizing their thoughts and actions about adopting innovations in organizations is based on a model of individual innovation adoption. It is not surprising, therefore, that most innovation adoption efforts by organizations fail. Fortunately, some succeed, as exemplified in this book in the three case studies on the adoption of hospital innovations: The three cases represent highly selective examples of successful innovation adoption. They are stimulating to read, and provide rich descriptions of the process of innovation adoption in hospitals. Three Cases of Hospital Innovations. People and Technology in the Workplace. The National Academies Press. Valid answers to these questions are not possible from these cases alone, because generalizations from three cases are difficult to substantiate, particularly when they include no instances of failure. To address these questions we will expand our sample by leaning on other published studies as well as research currently under way by the Minnesota Innovation Research Program, which since has been tracking a wide variety of technological, product, and process innovations as they develop from concept to reality in their natural field settings see Van de Ven, Angle, and Poole, The three cases presented here will be treated as examples to illustrate key research findings that are relevant to our questions. Although this model is robust in explaining innovation adoption by individuals, it does not adequately incorporate many complexities often observed in other studies and exemplified in our three cases when the organization is the locus of adoption. Such a revised model, when empirically verified, can make a major contribution by providing practical suggestions for maneuvering the innovation adoption journey in organizations. Innovation scholars and practitioners would do well to study this model carefully, for it captures much of what we know implicitly or take for granted about innovation adoption. This model, shown in Figure 1 , views the process of innovation as a simple linear sequence of three Page Share Cite Suggested Citation: Depending on the innovations being examined, various authors have expanded or modified activities in these three basic stages. Indeed, specialized fields of study and research have emerged over the years to focus on each stage. In the idea invention stage, psychologists have developed an extensive literature on individual and group creativity e. Although less extensively studied than the other stages, the process of innovation development is gaining more research attention by management scholars e. Finally, Rogers notes that perhaps no other topic in the social sciences has received as much study as innovation diffusion and adoption. Whereas most of this research has focused on diffusion, which is largely concerned with the marketing, dissemination, and transfer of an innovation to individual end users, far less has dealt with adoption, or the process by which recipient users select and implement an innovation. Of this smaller subset of adoption studies, most have focused on statistically examining relationships between various "input" factors characteristic of users, organizations, and the innovation and "output" rates of innovation adoption â€”leaving the adoption process itself least understood. Yet it is well established that functionally similar organizations respond and perform differently when adopting similar innovations Barley, ; Kimberly and Evanisko, In other words, the process by which organizations adopt innovations makes a difference on subsequent performance. First, the diffusion agency starts by marketing and creating awareness of its innovation through a variety of communication channels, such as journals, advertisements, and leaflets, often followed by personal contacts and informal influence of opinion leaders. Once there is an awareness of an alternative, the next subphase is the arousal of interest by a potential user of the innovation. This arousal of interest is influenced by various preconditions, such as felt need and organizational innovativeness, norms,

resources, and communication behavior. Adapted from Rogers , pp. An adoption decision typically leads to an actual trial implementation of the innovation. Positive outcomes from the trial will lead to continued use and institutionalization of the innovation by the adopting organization; negative outcomes will lead to rejection. Although extensive empirical support for this adoption process model has been established for individual adopters such as farmers adopting best practices promoted by the Extension Service of the U. Department of Agriculture , mixed results have been obtained when the organization is the locus of innovation adoption. Organizations particularly hospitals are complex political systems consisting of many functional specialties and administrative hierarchies e. As a consequence, innovation adoption decisions tend to be used for partisan purposesâ€”usually heralded by some, attacked and sabotaged by some, and apathetically ignored by the majority of others who are preoccupied with other organizational priorities Dahl and Lindblom, For example, Clark reports on a study of a hospital-design team initially consisting of the senior administrative staff and a small group of professional nurses working with the British Department of Health and Social Security. They decided to adopt a standard design package that had been devised and developed in the department for producing cost-effective decisions by placing all treatment activities in a central location. During the early stages of design, the medical staff of the design team made no serious interventions or contributions, even though the proposed designs had considerable implications for the medical hierarchy and for the allocation of space and resources. Then at a very late stage, when it became apparent to them that the new hospital, if built as designed, would involve considerable change in their working conditions and in their professional control of activities, they became much more active, thereby necessitating structural alterations during the commissioning of the new hospital. In particular, we will focus on six specific process complexities that are evident in the three cases of hospital innovation adoption in this volume and which are not adequately explained by the basic model in Figure 1. The three cases exist in organizational contexts that motivated and enabled successful adoption of innovation. Moreover, the stage for adopting the innovations was set over a period of several years and involving many organizational participants. In each of the three examples of successful hospital innovation adoption, the innovators experienced "shocks" not merely persuasion as a result of direct personal confrontations with needs or problems. These shocks were sufficient to trigger their attention and action for innovation. When people become dissatisfied enough with existing conditions, they initiate action to resolve their dissatisfaction. Page Share Cite Suggested Citation: In the three cases of successful adoption, the innovation process was kept relatively simple in the face of these inexorable pressures for proliferation. Setbacks and mistakes are frequently encountered during the innovation process, either because plans go awry or because unanticipated environmental events significantly alter the assumptions of the innovation. These setbacks signal either rejection of the innovation or opportunities for learning through reinvention. Learning fails when events are caused, and consequences are felt, by different people. Through reinvention, participants in the three cases of successful innovation adoption learned by reconnecting the causes and consequences of innovation invention, development, and adoption activities. In the three successful cases, reinvention of the innovation developed elsewhere was facilitated by modifying the innovations to fit the local organizational situation, having top management extensively involved and committed to the innovation, and using various techniques to maintain task completion and momentum throughout the adoption process. The adoption processes varied to fit the specific contingencies of the innovations being adopted by the three hospitals. Many of these six process complexities, which occurred in our three cases of successful adoption, would be viewed as characteristics leading to failure by the adoption model shown in Figure 1. These empirical observations are inconsistent with our conceptual model. We will now discuss how revisions in the basic model might be made to deal with each of the six observed processes. Doing so may not only explain why the three hospitals were successful in adopting their innovations but also propose a revised conceptual model to understand the process of innovation adoption by organizations. Temporal and Contextual Preconditions for Innovation Adoption Innovations are not initiated on the spur of the moment, nor are they initiated by a single dramatic incident or a single entrepreneur. Many initial events during this period were not intentionally directed toward adopting an innovation. As we will discuss in the next section, some events triggered recognition of the need for innovation e. Technology-push and demand-pull events such as

these often launched intrepreneurs Pinchot, on courses of action that, by chance, intersected with independent actions of others. These intersections provided occasions for people to recognize and access new opportunities and potential resources. Where these occasions were exploited, people modified and adapted their independent courses of action into interdependent collective actions to undertake concerted efforts to initiate an innovation. Although the basic model in Figure 1 posits that an innovation adoption decision is a relatively straightforward result of knowledge and persuasion, these observations emphasize that chance plays a significant role in affecting the decision and subsequent course of innovation adoption. The sheer volume of initiatives undertaken by a large number of interacting people increases the probability of stimulating innovation. The findings also reinforce the bias-for-action principle of Peters and Waterman The important practical question then becomes, "What can organizations do to increase their preparedness to capitalize on the chance of innovation? These conditions include the legitimacy, resources, structure, and culture of the encompassing organization that innovation groups draw upon to enable and constrain their innovative behaviors. Amabile , Angle , and Kanter summarize an extensive body of research indicating that innovation is facilitated in organizations that provide both enabling and motivating conditions for innovation; it does not occur where either enabling or motivating conditions are absent. Each of the hospitals housing the innovations is a highly respected, long-established, and a very successful institution located at the hub of its industry and community networks. During their respective periods of innovation adoption, the hospitals were reported to have moderately low personnel turnover rates, long-run strategic time horizons that connected diverse organizational activities to core institutional missions providing quality care to meet changing patient needs , and a high degree of commitment of top management and medical staffs to their respective innovations; in addition, the hospitals were reported to be making significant investments both in new technologies and in their professional staffs. Although the relative influence of any one of these conditions on innovation is difficult to assess, when combined they exemplify the ingredients of an organizational setting that enables innovation. Moreover, in each case, recognition of the need for innovation was triggered by many not one or a few events over an extended period of time often several years and involved many different people both within and outside the hospitals. In the short term there is little that managers can do directly to change organizational culture, legitimacy, and prestige, because they are the historical by-products of all previous activities and interactions of an organization with its environment. Thus, it is erroneous to expect that these innovation-enabling characteristics can be changed quickly. However, long-term macroconsequences are produced by the accumulation of many microactions that preoccupy the short-term attention of organizational participants. The immediate setting for most innovations is the organization itself, and much can be done to modify the immediate operating conditions of an organization. Organizations are complex social systems that provide templates for playing out many distinctive roles important to an innovation. Organizational attributes, such as structure, systems, and practices influence the likelihood that innovation ideas will be surfaced, and once surfaced that they will be developed and nurtured toward realization. Furthermore, the organization is the most direct source of material, financial, and other resources needed to support innovation efforts. With respect to structure, there are several features that will affect the gestation of innovative activities. The more complex and differentiated the organization, and the easier it is to cross boundaries, the greater the potential number of sources from which Page Share Cite Suggested Citation: However, with increasing organizational size and complexity comes segmentation Kanter, and bureaucratic procedures; these often constrain innovation unless special systems are put in place to motivate and enable innovative behavior. Key motivating factors include providing a balance of intrinsic and extrinsic rewards for innovative behaviors Amabile, Pay, in itself, seems to be a relatively weak motivator for innovation; it more often serves as a proxy for recognition. Individualized rewards tend to increase idea generation and radical innovations, whereas group rewards tend to increase incremental innovations and their implementation Angle, However, the presence of motivating factors, by themselves, will not ensure innovative behavior. Enabling conditions are equally necessary. Examples of such enabling conditions include the following: Resources for innovation Frequent communication across departmental lines, among people with dissimilar viewpoints Moderate environmental uncertainty and mechanisms for focusing attention on changing conditions Cohesive work groups with open

conflict resolution mechanisms that integrate creative personalities into the mainstream Structures that provide access to innovation role models and mentors Moderately low personnel turnover Psychological contracts that legitimate and solicit spontaneous innovative behavior In short, normal people have the capability and potential to be creative and innovative. The actualization of this potential turns on whether management can create an organizational context that not only motivates but also enables individuals to innovate. In the three hospital cases, these shocks included the introduction of the Diagnotic Related Group payment reimbursement system, increasing competitiveness of the hospital industry, infant deaths in the neonatal intensive care unit, as well as results of an employee survey. Instead, the problem lies in not appreciating the physiological limitations of human beings and the conditions that trigger their thresholds for action. Human beings are unconsciously highly adaptable. People adapt to gradually changing conditions and often fail to notice that conditions have signaled the appropriateness through opportunity or threat of a change. As a consequence, unless the stimulus exceeds their action thresholds, i. Opportunities for innovation are either not recognized or not accepted as important enough to motivate innovative action.

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Diffusion of Innovations relatively favorable circumstances, the decision of whether or not to adopt an innovation is a tricky one. We can use the studies of the diffusion of innovations as a "laboratory" to ex-.

Theory is an important aspect of nursing informatics â€" one that is often neglected due to time and context. Katz is also credited for first introducing the notion of opinion leaders, opinion followers and how the media interacts to influence these two groups. The Diffusion of Innovation theory is often regarded as a valuable change model for guiding technological innovation where the innovation itself is modified and presented in ways that meet the needs across all levels of adopters. It also stresses the importance of communication and peer networking within the adoption process. In simple terms, the diffusion of innovation refers to the process that occurs as people adopt a new idea, product, practice, philosophy, and so on. Rogers mapped out this process, stressing that in most cases, an initial few are open to the new idea and adopt its use. Over time, the innovative idea or product becomes diffused amongst the population until a saturation point is achieved. Rogers distinguished five categories of adopters of an innovation: Sometimes, a sixth group is added: The original five categories are illustrated in the bell-shaped curve image below. As you can see. Rogers estimated the percentage of each category, which in fact, are very similar to the proportions found in a normal bell-curve. Diffusion of Innovation Adopter Categories The five categories of adopters can be described in the context of technological innovation adoption and their influence on the innovative and adoption processes. Within this theory, the goal is not to move people within the five adopter categories into another category, but to streamline the innovation to meet the needs of all five categories. These opinion leaders serve as valuable integral change agents who influence their peers through peer to peer communication, role modeling, and networking. This process works well within an organization or in society at large. A prime example is the use of social media networking to influence people through opinion leader tactics. Five Stage Adoption Process Individual is exposed to innovation but lacks complete information Persuasion or Interest Stage Individual becomes interested in the new idea and seeks additional information Decision or Evaluation Stage Individual mentally applies innovation to his present and anticipated future situation, and then decides whether or not to try it Implementation or Trial Stage Individual makes full use of innovation Confirmation or Adoption Stage Individual decides to continue the full use of innovation Rogers explained that diffusion of innovation was the process by which an innovation is communicated through certain channels over time among members of a social system. It is important to examine why some innovations are successful, while others never become widely accepted. Five distinct innovation characteristics have been identified by Rogers to explain this mystery. These characteristics include observability, relative advantage, compatibility, trialability, and complexity and according to Rogers, account for 49 to 87 per cent of the adoption variation seen across all categories of adopters. These characteristics also provide a valuable evaluation list for technology project leaders to apply when first considering innovative changes. Re-invention Re-invention is another important consideration. This is basically referring to the degree that an innovation is changed or modified as the adoption and implementation process is enacted. If an innovation is amenable to re-invention as dictated by the needs of the five adopter categories, , the more versatile and adaptable it is seen to be, and the more likely it will be fully adopted to a healthy saturation point. Communication Channels Communication Channels refers to the rate and degree that people talk about and spread the news about the innovations. Two major communication channels were described by Rogers: Peer subjective evaluations of an innovation are very influential. Time Time is involved in three distinct dimensions of the innovation process Innovation Adoption Process â€" including first knowledge of the innovation through to final acceptance or rejection of its utility and ultimate implementation, as discussed earlier. Innovation Adopter Categories â€" time is also critical within the five adopter categories and how they influence one another to support full saturation of the innovation. Rate of Adoption â€" time is also involved when looking at the ultimate rate of adoption, say within an organization, from start to finish, and how many people of the total population have adopted the innovation. This rate of adoption is influenced by the innovation characteristics introduced above. Social

System The fourth and final dimension refers to the groups of people involved in the innovation adoption process. This could be employees at an institution, a neighborhood or a whole nation. Conclusion The Diffusion of Innovation theory is a very important theory that can serve administrators, information technologists, nursing informatics experts, and change agents well. The theory also benefits the targets of change, since respect and consideration for all involved stakeholders is intertwined with robust strategies for implementing innovative change. The theory fits nursing informatics well, and provides a scaffold for planning informatics related innovations. The Two-Step Flow of Communication: The Public Opinion Quarterly, 21 1. Theory in Nursing Informatics Column.

Chapter 7 : Diffusion of innovations - Wikipedia, the free encyclopedia

The Classical Diffusion Paradigm. Diffusion is the process through which an innovation is communicated through certain channels over-time among the members of a social system (Rogers,).

Rogers in , and is one of the oldest theories in social science. Rogers popularized the use of this theory in order to explain how over time an idea or product gains momentum and grows in use and popularity amongst a specific population. The theory shines light on to how people ultimately adopt a new idea, behavior, or product. In the context of the theory, adoption means that a person experiences a point of change, after which they do something differently than how they did it previously. That being said, when the diffusion of innovation theory is applied to marketing and business, adoption often refers to the purchasing of a new product. The DOI theory, and the adoption theories that coincide with it, are most useful when applied to new product launches. Instead, the diffusion of adoption is a process in which some people adopt new innovations more quickly than others. The rate at which people adopt a new innovation can tell us a lot about them. Diffusion of innovation theory suggests that people who adopt an innovation early on in the diffusion model will possess different characteristics and attributes than the people that are slower to adopt the innovation. The insight that the model provides impacts how these characteristics are being addressed in marketing messaging and product positioning. By doing so, you can provide messaging that resonates with that segment of people and focuses on their specific adoption characteristics in order to increase the chance of them purchasing your product. Based on the rate at which someone adopts to a product, they are categorized into one of the five adopter categories outlined below. Although the same product is being marketed to people from different categories, the marketing strategies for each category will look and feel different. Knowing where most of your target audience falls will signal their key adoption motivators -- insights that help drive how the product is marketed toward them. Innovators Innovators are the small group of people that consistently explore new ideas and technology products. These are the people that are responsible for the creation of products that will then go through diffusion of adoption. Early Adopters Early adopters can also be thought of as opinion leaders or influencers. They are open minded to change, and often share positive testimonials about innovations that have left them satisfied, as well as feedback in regard to how new products could be improved. Early Majority People that fall in the early majority category of adoption are essentially followers of the early adopters. They take the opinions of the early adopters to heart, and therefore are likely to perform behaviors such as reading reviews prior to purchasing a product. Laggards Laggards are the people that only adopt new products when there is no alternative to doing so. Another common motivator for this group is the pressure felt the other adopter groups. The 5 Factors that Influence The Adoption of an Innovation There are five main factors that influence the rate at which an innovation is adopted. Each of these factors hold different levels of influence in the five adopter categories outlined above. Relative Advantage Relative advantage is the degree to which an innovation is perceived as better than the product or idea that it replaces. Compatibility Compatibility refers to how consistent the innovation is with the values, needs, and desires of the population that will consider adopting it. Complexity Here complexity refers to how difficult the innovation is to use. Trialability Trialability is the extent to which the innovation can be tested or previewed prior to adoption. Observability Observability is the extent to which the innovation can create tangible results that can then be measured. In order to target Innovators, it would make sense to promote the new software on popular tech websites and media outlets. Displaying promotional marketing collateral on these sites will put the product in the light of already having been adopted by key stakeholders in tech. Early Adopters could be targeted by creating case studies in which like-minded people are describing their experiences with the new product. To have the most success with people in the Early Majority category of adoption, it would make sense to get granular with the market collateral that drives the promotion of the new product. Reviews are the key to engaging the Late Majority category. The more reviews you can collect and promote on different platforms, the more comfortable these folks will feel since they will start to feel like they are missing the train. When it comes to Laggards, not much is under your control in terms of inspiring them to adopt. Do you consciously target the

different categories of adopters in the promotion marketing surrounding new products? Feel free to drop us a line in the comments below! Experience Survey Software with a Smile.

Chapter 8 : Diffusion of innovations - Wikipedia

Rogers () explained that diffusion of innovation was the process by which an innovation is communicated through certain channels over time among members of a social system. It is important to examine why some innovations are successful, while others never become widely accepted.

Rogers in , is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses or spreads through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something differently than what they had previously i. The key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. It is through this that diffusion is possible. Adoption of a new idea, behavior, or product i. Researchers have found that people who adopt an innovation early have different characteristics than people who adopt an innovation later. When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation. There are five established adopter categories, and while the majority of the general population tends to fall in the middle categories, it is still necessary to understand the characteristics of the target population. When promoting an innovation, there are different strategies used to appeal to the different adopter categories. Innovators - These are people who want to be the first to try the innovation. They are venturesome and interested in new ideas. These people are very willing to take risks, and are often the first to develop new ideas. Very little, if anything, needs to be done to appeal to this population. Early Adopters - These are people who represent opinion leaders. They enjoy leadership roles, and embrace change opportunities. They are already aware of the need to change and so are very comfortable adopting new ideas. Strategies to appeal to this population include how-to manuals and information sheets on implementation. They do not need information to convince them to change. Early Majority - These people are rarely leaders, but they do adopt new ideas before the average person. That said, they typically need to see evidence that the innovation works before they are willing to adopt it. Late Majority - These people are skeptical of change, and will only adopt an innovation after it has been tried by the majority. Strategies to appeal to this population include information on how many other people have tried the innovation and have adopted it successfully. Laggards - These people are bound by tradition and very conservative. They are very skeptical of change and are the hardest group to bring on board. Strategies to appeal to this population include statistics, fear appeals, and pressure from people in the other adopter groups. There are five main factors that influence adoption of an innovation, and each of these factors is at play to a different extent in the five adopter categories. Relative Advantage - The degree to which an innovation is seen as better than the idea, program, or product it replaces. Compatibility - How consistent the innovation is with the values, experiences, and needs of the potential adopters. Triability - The extent to which the innovation can be tested or experimented with before a commitment to adopt is made. Observability - The extent to which the innovation provides tangible results. Limitations of Diffusion of Innovation Theory There are several limitations of Diffusion of Innovation Theory, which include the following: Much of the evidence for this theory, including the adopter categories, did not originate in public health and it was not developed to explicitly apply to adoption of new behaviors or health innovations. It does not foster a participatory approach to adoption of a public health program. It works better with adoption of behaviors rather than cessation or prevention of behaviors. This theory has been used successfully in many fields including communication, agriculture, public health, criminal justice, social work, and marketing. In public health, Diffusion of Innovation Theory is used to accelerate the adoption of important public health programs that typically aim to change the behavior of a social system. For example, an intervention to address a public health problem is developed, and the intervention is promoted to people in a social system with the goal of adoption based on Diffusion of Innovation Theory. The most successful adoption of a public health program results from understanding the target population and the factors influencing their rate of adoption.

Chapter 9 : Innovation - Wikipedia

diffusion is the process by which an innovation is communicated over time among the participants in a social system. For Rogers (), adoption is a decision of "full use of an.

Economist Joseph Schumpeter â€" , who contributed greatly to the study of innovation economics , argued that industries must incessantly revolutionize the economic structure from within, that is innovate with better or more effective processes and products, as well as market distribution, such as the connection from the craft shop to factory. He famously asserted that " creative destruction is the essential fact about capitalism ". In , dissatisfied employees of Shockley Semiconductor , the company of Nobel laureate and co-inventor of the transistor William Shockley , left to form an independent firm, Fairchild Semiconductor. After several years, Fairchild developed into a formidable presence in the sector. Eventually, these founders left to start their own companies based on their own, unique, latest ideas, and then leading employees started their own firms. Over the next 20 years, this snowball process launched the momentous startup-company explosion of information-technology firms. Another example involves business incubators â€" a phenomenon nurtured by governments around the world, close to knowledge clusters mostly research-based like universities or other Government Excellence Centres â€" which aim primarily to channel generated knowledge to applied innovation outcomes in order to stimulate regional or national economic growth. However, recent research findings highlight the complementary role of organizational culture in enabling organizations to translate innovative activity into tangible performance improvements. Innovation is the specific function of entrepreneurship, whether in an existing business, a public service institution, or a new venture started by a lone individual in the family kitchen. It is the means by which the entrepreneur either creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth. It is necessary to create and nurture an environment of innovation. Executives and managers need to break away from traditional ways of thinking and use change to their advantage. It is a time of risk but even greater opportunity. Companies will have to downsize and re-engineer their operations to remain competitive. This will affect employment as businesses will be forced to reduce the number of people employed while accomplishing the same amount of work if not more. Foundational innovation tends to transform business operating models as entirely new business models emerge over many years, with gradual and steady adoption of the innovation leading to waves of technological and institutional change that gain momentum more slowly. This system aids in better evaluation of policies and procedures with accountability and efficiency in terms of time and money. In addition, the growing use of mobile data terminals in vehicles, that serve as communication hubs between vehicles and a control center, automatically send data on location, passenger counts, engine performance, mileage and other information. This tool helps to deliver and manage transportation systems. It can occur as a result of a focus effort by a range of different agents, by chance, or as a result of a major system failure. According to Peter F. Drucker , the general sources of innovations are different changes in industry structure, in market structure, in local and global demographics, in human perception, mood and meaning, in the amount of already available scientific knowledge, etc. This is where an agent person or business innovates in order to sell the innovation. This is where an agent person or company develops an innovation for their own personal or in-house use because existing products do not meet their needs. MIT economist Eric von Hippel has identified end-user innovation as, by far, the most important and critical in his classic book on the subject, The Sources of Innovation. Engelberger asserts that innovations require only three things: A recognized need, Financial support. Investigation of relationship between the concepts of innovation and technology transfer revealed overlap. Information technology and changing business processes and management style can produce a work climate favorable to innovation. Both companies cite these bottom-up processes as major sources for new products and features. An important innovation factor includes customers buying products or using services. As a result, firms may incorporate users in focus groups user centred approach , work closely with so called lead users lead user approach or users might adapt their products themselves. The lead user method focuses on idea generation based on

leading users to develop breakthrough innovations. Sometimes user-innovators may become entrepreneurs , selling their product, they may choose to trade their innovation in exchange for other innovations, or they may be adopted by their suppliers. Nowadays, they may also choose to freely reveal their innovations, using methods like open source. In such networks of innovation the users or communities of users can further develop technologies and reinvent their social meaning. This technique is sometimes used in pharmaceutical drug discovery. Thousands of chemical compounds are subjected to high-throughput screening to see if they have any activity against a target molecule which has been identified as biologically significant to a disease. Promising compounds can then be studied; modified to improve efficacy, reduce side effects, and reduce cost of manufacture; and if successful turned into treatments. This is used by major sites such as amazon. One driver for innovation programs in corporations is to achieve growth objectives. As Davila et al. Innovation is the key element in providing aggressive top-line growth, and for increasing bottom-line results". Most of the goals could apply to any organisation be it a manufacturing facility, marketing firm, hospital or local government. Whether innovation goals are successfully achieved or otherwise depends greatly on the environment prevailing in the firm. The causes of failure have been widely researched and can vary considerably. Some causes will be external to the organization and outside its influence of control. Others will be internal and ultimately within the control of the organization. Internal causes of failure can be divided into causes associated with the cultural infrastructure and causes associated with the innovation process itself. Common causes of failure within the innovation process in most organizations can be distilled into five types: