



# Dynamics Process of Innovation Diffusion Model: Actor-Network Theory Approach

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**Abstract:** Previous information systems studies focused on studying people's receptivity towards innovation acceptance using variables borrowed from the psychology theories that focus on behavioral determinants. There is a lack of researches, which used the informational determinants that may induce receptivity of individuals to accept innovations introduced by inventors. This paper develops a logical model of innovation process based on modeling the principles of user informational-based readiness factors, which are Exposure, Awareness, Experience, and Knowledge. It is a step to establish an approach for understanding the adoption and diffusion process of innovations by individuals. This approach must be apart from using the behavioral, psychological, which is currently led by most information systems theories. The researcher in this study synthesized the existing literature review of the proposed informational instrument, which forms the Users Information-Based Readiness (UIBR). The researcher used a modeling technique called Unified Modeling Language (UML) tools, mainly the use case and Data Flow Diagram (DFD). The logical process model for innovation diffusion created to represent the input data flow and output data flow to each process in the innovation diffusion. The paper's main findings include the development of a model of user informational preparedness for innovation acceptance. The model offers a method for people to know and locate the status of innovations in adoption. The researcher built this model based on the informational readiness concepts using four chains of commands that move adopters from process to another and from stage to another stage in a hierarchical chain. These four phases categorized into four sequential processes, namely Exposure, Awareness, Experience, and Knowledge. Researchers expect the developed model to provide the right direction for understanding the technology adoption process. It also helps the innovator, inventor, government, industry, and decision-makers to leverage their resources and time to design the strategy for innovation diffusion and implementation successfully.

**Keywords:** Process of Innovation, User Readiness, Sequential Processes, Actor-Network Theory, Innovation acceptance, Unified Modeling Language

## 1. INTRODUCTION

Researchers described the innovation as mentioned by (Quintane, Casselman, Reiche, & Petra, 2011) to be any newly invented objects either in the form of physical products or services, which bring benefits to people if adopted. Nowadays, innovations, such as smartphones, web 0.2, E-banking, E-commerce, E-learning, and E-health, became a necessity for people. Information Technology (IT) innovation becomes one of the most used business platforms globally, and people adopt it because it fulfills a need for many of humankind. Thereupon, the researcher concluded that more research on this subject is required to clarify the dynamic method that any innovation will go through in its diffusion and adoption cycle. This research type is essential, especially for developing communities because it helps in identifying the proper ways of accelerating the adoption of innovation.

Specifically, the innovative product that neither individuals nor organizations get sufficiently prepared for the opportunities that the newly introduced product offers to its potential adopters. The researcher in the current study considers the acceptance of electronic innovation (e-innovation) an enormous challenge to both individuals and organizations. Nowadays, potential adopters of the newly introduced innovation have to comply with the increasing demand for the innovative products of electronic nature, such as an innovation about the e-learning context as highlighted by (Andrews, 2011).

Moreover, researchers consider E-learning an innovation that applies many technologies, electronic media to communicate information and learning material to learners (Hashim & Tasir, 2014). In the meantime, many researchers believe accepting innovations such as E-learning as a self-learning is an enormous challenge to learners (Akbar, 2005). The time allocated for innovation



production, and then adoption may vary and depends on the innovation type. Ketelhöhn and Ogliastri (2013) attributed the differences in an innovative product to different factors.

Akbar (2005) reported that when introducing the E-learning innovation, it did not reach and benefited all communities of the society. There are three reasons for the lack of full utilization and adoption of innovation at the startup stage. Considering E-learning, these reasons are; the existing national strategy, infrastructure, and social condition. Hence, this motivated the researcher to focus on this issue and study one of these reasons: the social situation. Given that, the researcher will focus on what makes individuals accept and adopt the innovation. The researcher will concentrate on exploring the adopters' side to find out an initiative strategy that can be used as an assistive tool by both the inventors and the innovators. Inventors can use the proposed approach to diffuse the benefits of their innovation to people. This research introduces the User's Information-based Readiness Process (UIBR), which explains the informational readiness process that prepares the new user to accept the invention or innovation. Also, in parallel shows the stages of both pre-adoption and adoption that innovators have to drive their potential adopters to the right destination, which ends by accepting and using the innovation. This research paper organized into five sections, namely, section one introduction; section two discusses the literature review about the concept of users' information-based readiness. Section three presents and discusses the research logical and conceptual model. Section four discusses the research method, while the last section presents the study's discussion and conclusion.

## 2. EASE OF USE

Previous research reported that researchers in developing the information systems literature could use the actor-network theory, which is significant (Parker, 2017). Users Information-Based Readiness (UIBR) is a new concept in information system research. It proposed by (Zolait & Mattila, UIBR – An Approach to Innovations Acceptance, 2009), to establish a new understanding of the user's promptness towards the acceptance of innovations. The UIBR concept proposes four components that have been examined in the previous research to gauge their effects on the potential adopters of the introduced innovation (Zolait, Mattila, & Sulaiman, 2009). These four components in sequential order are Exposure, Awareness, Experience, and Knowledge. These four components jointly form a new concept named as User Information-Based Readiness (UIBR). The UIBR defined as users' tendency to adopt and use any of the introduced innovation once the innovators have offered it. This tendency varies among potential adopters of all groups in society. Besides, it depended on the individuals' standpoint on a scale address the levels of adopter's exposure, adopter's awareness, adopter's experience, and adopter's knowledge

that they have about the introduced innovation. For example, the buying behavior mentioned by Makkonen and Johnston (2014), focuses on information gathering and information-processing activities. These activities are related to three factors, which are; 1) The recognition of adopters' needs form innovation they interact. 2) The innovation evaluation with alternatives to compare to what extent it complies with adopters need, and 3) The selection of information assisting in identifying the most suitable innovation. Information gathering activities involves several things that drive individual behavior to act for exploring an innovation. Accordingly, potential adopter moves toward innovation exploration when several conditions bring these potential adopters to specific circumstances. Individuals in these circumstances are best described as either suffering the pain of missing something or witnessing a revolutionary event. Therefore, these circumstances considered a trigger for individuals to act toward making a change. This change could be either to get a new opportunity or perhaps finding a solution to the problem they are facing. The researcher can say that the situations mentioned earlier are triggers, which motivate the potential adopter to act accordingly. The researcher believes that individuals in all circumstances use the human sensory system tools to identify inherent innovation characteristics. These characteristics, such as attributes, namely; ease of use, usefulness, compatibility, trialability, feasibility, mobility, and durability, are best defined by among others (Rogers, 2003) and (Davis, 1989). It means that the first interaction between innovation and its potential adopter (actor) is through the human sensory system. Sequentially, (Wejnert, 2010) reported that it is "the actor's characteristics which will modulate the process of information intake, and push this information in the process of decision-making end either by the accepting or rejecting the innovation. The following sections will discuss the four process components, which proposed to form a user's readiness. These four processes may help the researcher to define the procedural process to prepare potential adopters' inclination to grasp and utilize the incoming imaginative innovations which inventors introduce (Zolait & Mattila, 2009).

### A. Exposure

Researchers rarely use the term exposure in studying the acceptance of new technology and innovation. It will be challenging to understand how exposure to innovation influences who becomes an adopter, without providing a clear definition of "exposure." In this section, the researcher will discuss the first process in UIBR, which is innovation's representation (i.e., innovation identification) and attention. In innovation identification, the potential adopter process information that represents the innovation alternatives choices. This process can be recognized as innovation identification. Exposure, according to (Zolait, Mattila, & Sulaiman, 2009), defined as the individuals themselves moved already to sense an innovation that matches their interests, needs, or existing attitudes. This

definition supports a claim raised by (Rupini & Nandagopal, 2015), which says that people's entire understanding of the world is experienced through their senses. One of the sensing capabilities is collecting data on the innovation by the innovations' potential adopter, which in turn increases the prospective adopters' exposure to the existence of the innovation and then motivate the more exploration to in hand innovation. Recent researchers, among them (Ngafeeson & Sun, 2015), consider the exposure to innovation as a moderator of technology acceptance relationships.

The five human senses are the tools that walk individuals to the status of innovation exposure individually or collectively. The innovation's adopter may drop in the exposure status concerning innovation by sensing the real existing innovation by one or more of the five senses, namely, seeing, touch, feeling, tasting, smell, and hearing. Accordingly, previous research reported that the human five senses had been acknowledged as powerful cues influencing people's emotions, perceptions, and behaviors. Furthermore, in learning innovation, (Redding, Twyman, & Murphy, 2013) reported that a student's motivation to pursue learning related to new topics is improved by the learner's exposure to the original topic itself. The study conducted by (Ngafeeson & Sun, 2015) proved that exposure to the IT innovation and the quantity of exposure to a given technology had moderated the impact on the acceptance, adoption, and use behaviors of a given technology.

#### *B. Awareness*

Awareness as defined by the free dictionary (Farlex, 2019) as "the state or condition of being conscious." Previous research claims that recognition will be achieved when the potential adopter knows that innovation exists, gains some understanding of how it functions, and its benefits (Zolait, Mattila, & Sulaiman, 2009). Researchers such as (Pe' rez, Sanchez, Carnicer, & Jimenez, 2004) studied teleworking adoption concluded that the literature suggests that if potential adopters are unaware of technology innovation, this acts as a constraint prevents innovation being chosen in the future.

In the case of the user-centric approach and context-awareness, the researcher counted it as a set of methods arranged on identifying the users' environment (Rodis, 2018). One of these procedures is collecting information, which increases the individuals' awareness and becomes one of the major catalysts to encourage innovation adoption. In the security context, awareness was straightforward, linked to individual behavior. For instance, research conducted by (Lebek, Uffen, Neumann, Hohler, & Michael, 2014) reported that security awareness determines the employees' intention to comply with information security policies. Moreover, researchers suggested creating awareness by conducting awareness-training programs to obtain individuals' desired behavior (Jr, Carver, & Ferguson, 2007). Previous research by

(Børing, 2017) proved with detailed explanations on why training is positively related to innovation acceptance.

#### *C. Experience*

Experience is recognized as being related to the learning of individuals (Roth & Jornet, 2014). Experience defined as "a process where people undergo the influence of things, environments, situations and events, and a wide range of materials play active roles as mediators of experience" (Jernsand, Kraff, & Mossberg, 2015)(p. 99). Experience is a personal, interactive, and complex phenomenon with characteristics related to the innovation itself. Furthermore, it is about people's fantasies and feelings, fulfills adopters' functional needs, and presence as reported in the study conducted by (Jernsand, Kraff, & Mossberg, 2015). Accordingly, all of the innovation characteristics are important concerning innovation processes acceptance. In learning innovation, (Redding, Twyman, & Murphy, 2013) said pupils learn in high quality when mindful of the current learning task's future pertinence and convenience to form superior accomplishments.

Previous research reported that an individual's experience could be examined and filtered as a guide for future action because people's experiences are rich sources of learning (Restine, 1997) (Plassmann, Ramsøy, & Milosavljevic, 2012). Therefore, the individuals' earlier experience is critical for innovation adoption because it can alter an individual's convictions or continuity to utilize that innovation (Liao & Lu, 2008). The past experiences of potential adopters are required for innovation adoption, as highlighted by the theory of diffusion of innovation (Rogers, 2003). It was mentioned by (Foroudi, Jin, Gupta, & Meleware, 2016) that excellent user experience level is the source of loyalty and reputation for innovation. Moreover, in the business context, creating a strong position for a company offering a new product or service in a highly competitive market depends on its ability to influence its consumers (Foroudi, Jin, Gupta, & Meleware, 2016). Interestingly, (Ngafeeson & Sun, 2015) specified that individuals who experienced an innovation more would be prompt more exposure to increase the innovation's acceptance and adoption.

#### *D. Knowledge*

The innovation was conceptualized in the previous literature review as an outcome from a knowledge (Quintane, Casselman, Reiche, & Petra, 2011) as reported by (Kamasak, Yavuz, & Altuntas (2016), knowledge is a static resource that needs to be transferred and spread to the potential adopters to create value. Furthermore, in the knowledge management literature, knowledge is considered as the essence of the innovation process. Several models discussed the characteristics of innovation and the knowledge creation process whose outputs are indirectly viewed as an innovation. The researcher in the current study, emphasis on two types of knowledge, which

serve to make adoption of innovation faster. The first type of innovation-based knowledge, which is discussed in the knowledge literature such as (Damanpour & Schneider, 2009) (Flight, D'Souza, & Allaway, 2011), categorized as the "innovation characteristics." The diffusion of Innovation theory (DOI2) demonstrated three innovation characteristics: technical compatibility, technical complexity, and perceived need (Rogers, 2003). Previous research (Flight, D'Souza, & Allaway, 2011) examined 15 unique innovation characteristics that explain the relationship between product characteristics and their adoption. The Second type of innovation-based knowledge is "How-to use innovation," discussed in the diffusion of innovation theory (Rogers 2003). These two types of knowledge are essential because they are triggers that walk the actor "potential adopter" towards accepting or rejecting the newly introduced innovation. Moreover, practicing knowledge activities facilitate the adoption of innovations (Perez, Sanchez, Carnicer, & Jimenez, 2004).

### 3. ADOPTION ACTIVITY SYSTEM MODEL

According to (Makkonen & Johnston, 2014), innovation adoption and diffusion approach represent an attempt to develop a coherent theory that verbalizes a process-oriented hypothesis that works for both innovation's acceptance and diffusion process research or integration both approaches. The researcher believes that information plays a vital role in the adoption and the diffusion of innovation. This belief supported by the literature analysis carried out by previous researchers, among others (Makkonen & Johnston, 2014), as shown in figure 2. The model claims that adoption and diffusion can be described in the activity system model, which builds on the defined central activity of the adoption process. The subject, which is an adopter, undertakes by employing instruments toward innovation to reach the desired adoption as an outcome. The norms and rules include three elements; homophily, heterophily, and communicational channel. These elements describe the relationship between the adopter and the community. The community represented by both opinion leaders and change agents, while the division of labor consists of the rate and shape of the diffusion and threshold. Labor division describes the association between innovation and the community.

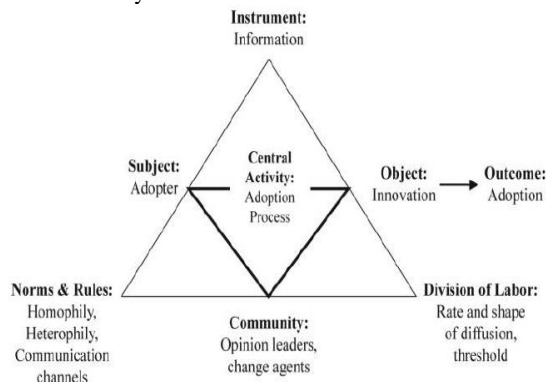


Figure 1. Adoption and diffusion described through the activity system model

Source: Makkonen and Johnston (2014)

Adoption and adaptation of the new system is not a one click-journey, but the journey of adoption goes through several and different sequent stages. Each stage in the life cycle of adoption is a prerequisite for another stage. Each stage has a different timing scale and completed once individuals complete their sets of requirements. This study used the Object-Oriented Analysis (OOA) approach in modeling conventions that describe user informational-based readiness in terms of objects. The OOA research tool in this study achieved by using Unified Modeling Language (UML) concepts. The researcher found that the UML, as the research instrument, is easy to use and helpful. As mentioned by (Bentley & Whitten, 2007), it is concerned with "defining the static structure and dynamic behavior models of information system" p. 371.

### 4. RESEARCH METHOD

The researcher found that the qualitative approach is appropriate for the current study. It is preferred because qualitative methods enable researchers to study things in their natural settings, attempting to interpret phenomena in terms of the meanings people bring to them (Creswell & Poth, 2018). This approach used because it helps the researcher to focus on understanding the research problem itself and provide justifiable tests, usually with restrictions, to avoid any biased may come from the research analyst, research reader, or donors to the research (Creswell & Poth, 2018). Therefore, it helps in understanding the strategies that innovators use to drive an individual's promptness to adopt innovations. Previous technology acceptance studies focus on modeling an individual's behavior using factors borrowed from behavioral and psychology theories. This study is original because it focuses on modeling the process of innovation acceptance. The researcher adapts Actor-Network Theory (ANT) to form the conceptual framework (Law, 1992). According to (Tatnall & Gilding, 1999), Actor-Network Theory (ANT) is an approach developed to the qualitative research traditions used in information systems research. The theory helps the current study model the innovation process because it is concerned with how knowledge is socially constructed (Carroll, 2018). According to (Carroll 2018), (Rocci, 2014), among others, reported that researchers use the theory as mentioned earlier for tracking multi-part interplay of human interactions result in some ideas becoming accepted or forming a network of non-humans and humans relations and connections. One of the concepts of ANT is "Actor," which could be tangible or intangible, not merely people but also objects and organizations. The actor communicates the effect of one entity to another. The ANT can be used to build an information systems framework that can help study and investigate the factors that caused a particular innovation to be adopted or rejected by potential adopters. (Tatnall & Gilding, 1999).

To achieve the study's aim, the researcher must provide clear conceptual and operational definitions to the new four concepts that form the adopters' readiness. Therefore, this research is interested in reviewing some studies that have

been carried out to assess the potential users' readiness and the factors that enable a suitable environment for innovation acceptance. The researcher mainly synthesized the existing literature review of the proposed informational instrument, which forms the User Information-Based Readiness (UIBR). Based on this background, the paper developed a logical model of the innovation process. The existed process models found in the UML were helpful and used to perform object-oriented analysis (OOA) for constructing the analysis use-case model. The UML version 2.0 provides thirteen diagrams for modeling the process, steps, and activities. In this study, the researcher can use the activity diagram and integration overview diagram to graphically depict the sequential flow of innovation activities. According to (Bentley & Whitten, 2007) Activity diagram illustrates the "sequential flow of activities of a use-case or process while the integration overview diagram combines features of sequence and activity diagrams to show how objects interact within the activity of use-case" p382.

The researcher used activity diagram notions to explain the logical process model adapted from (Kendall & Kendall, 2020); (Bentley & Whitten, 2007), as shown in figure 2. These notions are 1) **Initial node**: the solid circle to depict the start of the process. 2) **Action**: the rounded rectangle shape to illustrate the action. 3) **Flow**: the arrows are representing the progression through a movement. 4) **Decision**: Diamond shapes with input and outputs flow to show determination or decision. 5) **Activity final**: the solid circle inside the hollow circle to depict the end of the process.

## 5. PROCESS LOGICAL MODEL

Previous research conducted by (Makkonen & Johnston, 2014) reported that innovation adoption comes into a process that could be defined as a decision-making process. This process ends when taking the individuals into innovation for actual use or bringing their behavioral intention to use it shortly. The logic that supports the current study claims stands on a research presumption. This presumption says that the potential adopters exposed to innovation will walk on their feet towards the next stage of human behavior. Furthermore, those who have such exposure through innovation sensory techniques drive their behavioral intention faster towards action behavior. Therefore, sensory input works as a technique that seduces and influences an individual's feelings and behavior towards innovation (Rupini & Nandagopal, 2015). The human brain works based on five sensors, which namely are; Smell Sensor, Sound Sensor, Sight Sensor, Taste Sensor, and Touch Sensor. These five sensors shape five detecting systems, which people utilize to discover and feature all the innovation's features and attributes for the potential adopter. For instance, the processing of the auditory system according to (Rupini & Nandagopal, 2015) works based on three stages of interactions, namely; between inputs and existing memory, between inputs and experiences (existing background knowledge) and between

inputs and other sensory systems. Here the attentional process is occurring, which, according to (Talsma 2015) study plays a vital role in coordinating the integration of all received inputs into a clear mental representation of innovation. The researcher concludes that the exposure process will cause bringing the newly introduced innovation to the status of attention and presentation. In this early stage, the potential adopter's significant interests, as highlighted by (Plassmann, Ramsøy, & Milosavljevic, 2012) model are the identification of the choices and importance of options. The more the sensors show a positive innovation's representation, the more it walking the potential adopters toward the next process, which is adopters' awareness.

The next stage in readiness is the potential adopters' awareness of the innovation existence. The more the potential adopters got aware of innovation, the more they understand the necessity of innovation to improve their life's quality and conditions. Awareness is the second critical stage in the formation of potential adopters' readiness, preparing people for innovation adoption. The more the potential adopters aware of the innovation introduced, the more they will move beyond the next stage. In the security awareness context, researchers (Lebek, Uffen, Neumann, Hohler, & Michael, 2014) had used the Technology Acceptance Model (TAM), and using the two of the innovation characteristics namely are innovation's usefulness and easy to use. The researcher found that the awareness of these two innovation characteristics could be among the determinants of the potential adopters' intention to comply with introduced innovation. In the case of the newly introduced innovation (e.g., new product or solution), researchers always suggest providing training on innovation. This because there is a positive relationship between training and innovation adoption (Børing, 2017). Accordingly, training is one of the best methods that increase the potential adopter consciousness about innovation. Researchers such as (Børing, 2017) reported that training facilitates employees' exposure to a variety of knowledge about innovation. Furthermore, the successful practice encourages openness to novel ideas, which can be a source of innovation. Figure 1 displays the proposed, dynamic process of innovation diffusion.

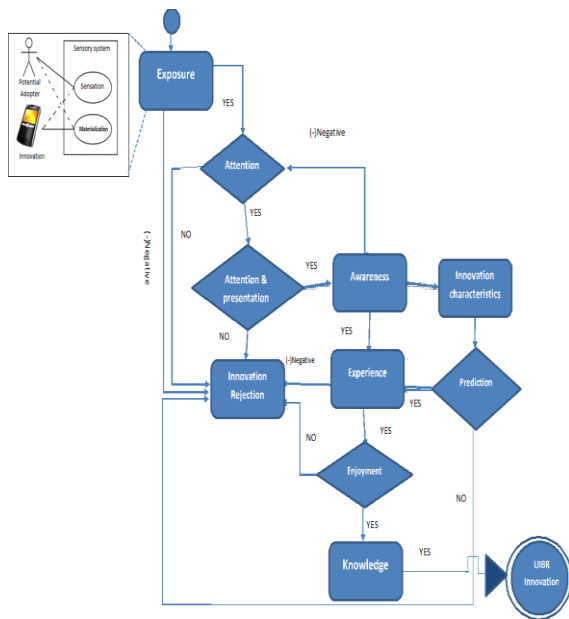


Figure 2. The dynamic process of innovation diffusion.

The third stage is the potential adopters' experience. The experience formation may start when individuals complete a successful trial training because training, as mentioned by (Børing, 2017), favors the re-utilization of innovations processes. Figure one shows that when the potential adopters completed the processes related to understanding both innovation's environment and characteristics, they will move towards the prediction decision. Experience innovation considered by (Jernsand, Kraff, & Mossberg, 2015) as a spiral process, which results in increasing the understanding of how specific characteristics are essential for innovation experiences.

Furthermore, potential adopters who gained the required experience about the innovation may commence into the innovation analysis, evaluation, comparing its real benefits, and its necessity for improving their life quality. Logically, this may drive the potential adopter to explore how innovation works? Sometimes, this might happen as a direct transition from awareness to experiencing the innovation itself. This stage may happen once the potential adopter starts what called "innovation trial" or innovation practices. Innovation experience is a critical stage in preparing the potential adopter for accepting the innovation. Innovation experience, according to (Foroudi, Jin, Gupta, & Meleware, 2016), will result in forming the innovation reputation, and individuals perceive innovation as trustworthy and respectful because of their experience with the inventor, and its products and services reputation. The potential adopter may give rejection to the innovation that they did not enjoy the innovation experience outcomes. Enable the adopter to experiment with the new product as the researcher call it here, the "innovation experience" is a core process in expanding the understanding of the potential adopters about the benefits of the innovation.

Subsequently, the accumulated practices and such experience gained by innovation's learners may push both potential adopters and inventors toward mastering the innovation knowledge. Many studies reported that knowledge is the critical raw material for innovation and strongly associated with innovation success (Kamasak, Yavuz, & Altuntas, 2016). Knowledge could be the last stage in shaping the individuals' readiness towards innovation or its platform acceptance.

## 6. FINDINGS

This research found that innovation in adoption could be best described as a set of decisions in response to processes initiated by the human sensory system. These chains of decisions are essential to driving innovation's potential adopter by completing the pre-adoption chain. The product adoption processes took place when the customer moves three significant stages of adoption. The adopter moves from a cognitive state to an emotional state. This first stage described the customer as being informed about the product, while the second stage represents the customer's liking and preference for innovation. This stage attained and occurs best when new knowledge is built upon the prior innovation experienced by the potential adopters. An individual's behavior moves to the cognitive state, described as the stages that involve intention behavioral and actual behavioral, such as deciding and purchasing. The study findings are aligned with the existing research literature regarding the dynamic processes for innovation adoption and diffusion. The emerging themes of User Informational-Based Readiness proposed in this study.

Furthermore, when an individual turns the exploration process into experiencing the innovation, the individuals' enjoyment of the innovation may occur. The individuals' satisfaction of innovation is preadoption to the adoption process. The pre-adoption stage is composed of two processes, which are the experience and knowledge process. The nature of the information being processed in this stage differs from the previous stage. There is an opportunity for future research to include actual data from experimental field trials, which are very important. This research found that innovation adoption could be best described as a set of decisions that were in response to processes initiated by the human sensory system. These chains of decisions are essential to driving innovation's potential adopter through the pre-adoption chain. The product adoption processes took place when the customer moves three significant stages of adoption. The adopter moves from a cognitive state to an emotional state and then to an informational state. This first stage described the customer as being informed about the product, while the second stage represents the customer's liking and preference for innovation. This stage attained and occurred



best when the potential adopter had built the new knowledge upon the prior innovation experienced.

Then an individual's behavior moves to the conative state, which described as the stages that involve intention behavioral and actual behavioral such as deciding and purchasing. The study findings are aligned with the existing research literature regarding the dynamic processes for innovation adoption and diffusion. The emerging themes of User Informational-Based Readiness proposed in this study. Furthermore, when an individual turns the exploration process into experiencing the innovation, the individuals' enjoyment of the innovation may occur. The individuals' satisfaction of innovation is preadoption to the adoption process. The pre-adoption stage consists of two information processes, which are experience and knowledge process. The nature of the information being processed in this stage differs from the previous phase. There is an opportunity for future research to include actual data from experimental field trials, which are very important. These data can also be used to validate and even confirm the existing logical model of the innovation process.

## 7. DISCUSSION AND CONCLUSION

In the past years, social science researchers have discussed remarkable transformation factors and their role in the diffusion or adoption of innovation. Also, proposed some functional, psychological determinants, which previous research had validated them to have a positive effect in determining the acceptance of innovations by individuals and firms. Marketing research considers the adoption of new products (innovation) as a result of five processes. Inventors' and entrepreneurs' significant innovation objectives marketing are better achieved when they succeed in reaching three common goals. These goals address any customer needs, penetrate a new market, or have a unique positioning for a firm's product to increase firm sales. The researcher concluded that an "Innovation Exploration" should be planned by following the dynamic process model for innovation diffusion. It can also be performed in different ways that forced potential adopters to walk through the four dynamics process that leads to absolute innovation acceptance. Innovation exposure is a stage that represents the first level, in which attention and presentation to the individuals' needs for the innovation are clear to the potential adopters.

The importance and the priority of innovation's characters may vary from adopter to one another. However, still, factors that drive the entire community toward accepting innovations, which lead to the successful diffusion of these innovations, the concern of researchers. The exposure stage outcomes motivate adopters to proceed to the second stage, which is innovation's awareness. It involves some activities. The potential adopters will start an actual behavior towards innovation

adoption when these adopters move toward the search and persuasion stage in the innovation's adoption process. In the persuasion stage, potential adopter is taking advantage of many marketing communication tools such as mass media, Word-of-Mouth (WOM), social networks, direct communication line, and search engine, among others. The awareness behaviors involve activities such as adopters' review, change detection, comparison, or impression. The results attained from the current literature assessment are useful, and the researchers can use findings as guidelines for future research. Perhaps it can be used by inventors and decision-makers to develop a strategy or a platform that strengthens and speeds up the adoption of innovation. Concerning the originality and the value gained by conducting this study, lay on one fact that past researches tried to explore the variables, which can explain the diffusion and acceptance of innovation still did not donate much concern to the four variables of user information readiness. This study shows that these factors' nature as informational-based procedural determinants for innovation acceptance contribute to the formation of adopter's readiness.

Furthermore, this study contributes valuably to the field of innovation marketing by proposing and implementing the concept of four information components, namely; exposure, awareness, experience, and knowledge. The current study highlights that previous studies that sought technology adoption/acceptance did not give much concern to factors that are essential sources for adopter's readiness and information enrichment. It concluded that the four elements of information enrichment are critical in making the potential adopter's behavior towards accepting technology.

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