

Experience as Knowledge in a New Product Development Team: Implications for Knowledge Management

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Abstract

This study was conducted to better understand how New Product Development (NPD) team members apply their experiences to meet the task needs of their project. Although “experience” is highly valued in team members, little research has looked specifically at experiences as a type of knowledge, and how this knowledge is used in work settings. This research evaluated nearly 200 instances where team members referenced past experiences during team meetings. During these experience exchanges, team members structured the sharing of their experiences to include three common elements: the source of the experience, the nature of the experience, and the degree of relevance to the current work of the team. The experiences fell into four categories: people (relationships), process, product, and politics. This paper describes how team members structured, applied, and integrated their individual experiences and presents the resulting implications for knowledge management systems that wish to exploit experience knowledge.

1. Introduction

Common wisdom equates experience with knowledge. Deeper and broader experiences provide opportunities to expand ones knowledge and the expand one’s ability to apply that knowledge to other domains. Learning occurs through reflection on experiences, identification of patterns, and integration of new understandings into a person’s existing knowledge structures [20][22]. Therefore, experience is critical for gaining expertise, and also leads to the development of intuition and the ability to rapidly assess situations, integrate sensory information, and identify appropriate reactions [20].

“Experience” is generally defined as “direct observation of or participation in events as a basis of

knowledge” [12]. “Experience” as a construct varies depending on the specific area of interest. Research in team and organizational performance generally treats experience as a characteristic of the individual, team, or organization, which represents an integration of a body of experiences into internalized knowledge. Operationalizations of experience in this research stream include whether a person has experienced a particular event (e.g., success/failure, [1]; work-related accident, [31]), the length of time in a specific job [32] or industry [34], the number of times one has performed a given action [39], or a skill level obtained such as novice/expert [30].

Organizational research on experience has shown significant positive effects; experience is associated with increased team effectiveness [11] [32], better organizational performance [34], increased value of information provided [39], and is posited to buffer organizations during times of change [10]. The application of experience, however, is not without risks; experience can lead to a bias against novel approaches [9] or perpetuating dysfunctional behavior when employees fail to learn or learn the wrong lessons from their experiences [36].

A large body of research, based on Kolb’s Theory of Experiential Learning [22], focuses on the process by which people transform experiences into knowledge through a cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Experience can be gained through participating in a variety of activities, or repeating a specific activity multiple times, leading to different types of learning [13][16]. Even group conversations, such as those common to NPD teams, represent both an opportunity to share experiences as well as a type of experience [4].

Organizations now routinely turn to cross-functional NPD teams to capitalize on a broader and deeper base of knowledge and experience and to improve product performance [2][25][29]. Knowledge management systems are often built to

support NPD [5] and offer organizations the potential to capitalize on the knowledge and experiences of others [17] to the benefit of the organization [7]. While extensive research has looked at how knowledge is captured and transferred (e.g., [3][21][37]), less is known about how that knowledge is used.

Despite rich and varied literatures addressing “experience,” there has been little research on the mechanics of how one individual calls upon a specific experience to share with another. This research adopts the position that experiences, in addition to leading to learning and knowledge creation, are in fact units of knowledge themselves that benefit organizations through application. This research therefore addresses two questions: “*How do project team members use their experiences to influence work processes?*” and “*How can knowledge management systems be designed to more effectively enable the application of experiences as knowledge?*”

To better understand how knowledge management systems can effectively capture and transfer experiences as knowledge, this study investigated how team members on a NPD team applied their experiences as part of their group work processes. The paper describes the results of a qualitative study of over 200 instances of experience application, and discusses the implications for knowledge management systems.

2. Method and Analysis

I chose a qualitative research method because it is well suited to understanding the process by which events and actions take place [28]. Among qualitative methods, I selected a research design based on a descriptive single case study, per [40]. A case study is appropriate because there are a large number of factors that could potentially influence the processes for applying experience. Further, descriptive cases are appropriate for answering “how” questions, such as those posed by this study.

The case studied for this research was a NPD project at a national laboratory. The project was in a formulation phase, during which the team was responsible for defining the concept for the product, demonstrating feasibility, estimating the resources required to proceed to implementation, and identifying and developing a plan to manage risk.

The project team consisted of a core team of 10-12 members from multiple science, engineering, and professional disciplines, as well as over 20 peripheral members providing expertise in a variety of scientific and technical disciplines.

As a full-time employee of the laboratory, I collected the data for this study while I was a participant-observer on the project team and a member of the core team with project-specific responsibilities. Participant observation derives from an anthropological perspective whereby to fully understand a phenomenon requires not just observation of a situation, but committed participation in the daily lives as viewed from the perspective of insiders [18]. The data consists of transcripts of audio recordings made during team meetings. The audio recordings were made by placing a recorder in the center of the meeting room table (for face-to-face meetings) or next to the speaker phone (for teleconferences). Initial transcription was done by a commercial service; I then reviewed and corrected the transcripts to create a near-verbatim record of each meeting (quality was limited by general sound quality, overlapping discussions, background noises, and variances in volume and diction for individual speakers). This study is based on transcripts from fifteen meetings, totaling 1950 minutes (32.5 hours), covering the first seven weeks of the team’s operation.

I used a grounded theory approach to analyze my data. Grounded theory is the discovery of theory from data that are systematically obtained and analyzed by generating conceptual categories or their properties from evidence [14]. For this study, transcripts provided the “evidence”. The conceptual category of interest was the experience related to the team by members during team meetings. The properties of interest emerged through my analysis and consisted of: the source of the experience, the nature of experience, and the degree of relevance.

I first read through each transcript to identify when the speaker was relating an experience. Speakers used a number of recurring verbal patterns which aided in “experience” identification, such as:

“The last time we did this ...”

“For example, the [other] project...”

“On [another] project we...”

“The way it works here [at our organization, on our project] ...”

Team members related their experiences in the context of a team discussion. If team members chose to attend to the experiences of their teammates, they often responded by contributing experiences of their own. The primary unit of analysis for this study is therefore the *experience exchange* rather than each individual experience in isolation. Each *experience exchange* consists of one or more individuals relating one or more experiences within the context of a team

discussion. These *experience exchanges* ranged in size from a single statement by one individual, to lengthy exchanges between multiple team members. Sometimes an experience exchange would include multiple individuals sharing clearly related experiences. I considered these compound exchanges as a single experience exchange for further analysis.

From the transcripts, I identified 199 instances where team members engaged in exchanges involving references to experiences (I participated in 39 exchanges, consistent with my project responsibilities). After identifying all experience exchanges, I systematically compared them for commonalities and differences. Three common elements emerged from the analysis of each reference to experience, as discussed in detail in the Section 3.

The next step in the analysis was to look across the experience exchanges to identify the team member's purpose in relating the experience; not his personal motivation for speaking of this (or any other) experience, but instead the intended consequence of relaying the experience. I performed this analysis by first creating a short narrative statement describing the implied intent of the team member and then comparing the short narratives to arrive at a small number of recurring themes.

The final step in the analysis was to analyze compound exchanges – where multiple team members related multiple experiences. This final analysis provided insights into how team members combined different, and sometimes contradictory, experiences.

Section 3 reports the results of the three-step analysis by first identifying what constitutes an “experience.” It then proceeds to report how and why team members related their experiences in the context of a team discussion. Finally it provides examples of how team members processed multiple different experiences.

3. Results

This section reports the results of the data analysis by addressing how team members conveyed information relating to their experiences, the ways in which team members used experience to influence team processes, and how team members integrated multiple different experiences.

3.1 Common Elements of Experience

When team members related experiences, they used a surprisingly common structure. Each experience related by a team member included three elements: the source of the experience, the degree of

relevance, and the nature of the experience. The following sections describe each of these three elements and provide examples.

Source of the experience

The first common element was an indicator of the source of the experience, i.e., who originally had the experience that the member related to the team. In the majority of experience exchanges the speaker related an experience that he personally had. I refer to these as “I” experiences because the speaker used the first person singular pronoun “I,” for example:

“In the 350 aircraft flights ...*I've* made...”

“*I* haven't seen a successful flight software inherit[ance]...”

“When *I've* done them, *I've* done...”

Team members often reference experiences they had as part of a group, referred to as “we” experiences because the speaker generally used the first person plural pronoun “we,”:

“*We* can generally do a part per billion...”

“What happened the last time, and *we* got a ‘no’ was...”

Speakers commonly referenced other people's experiences, using specific names or the pronouns he, she, or they, referred to collectively as “they” experiences:

“I am sure [name] has [thought about it] ...”

“Actually, what *he* generally will do, and *he* got in trouble doing this...”

Finally, speakers sometimes referred to collective experiences that involved a group of people and a group of common experiences, referred to as the “inclusive we.” For example, when discussing the collective experience of the organization working with a particular partner organization, the speaker invoked an inclusive “we” representing a large number of people in the organization:

“What *we* might end up doing, and *we've* done this before, many times ... is *we'll* ...”

Finally, speakers also referenced the “experiences” of objects such as pieces of equipment or other projects. I refer to these as “it” experiences:

“[The camera] is the instrument that was on [the other project].”

Experience originated from a variety of sources ranging from the intensely personal first-hand experience to the vicarious or general experiences of others. Inherent in all examples of the application of experience in this study was a clear depiction of who had the experience, and the implicit understanding that the person relating the experience had, to some extent, personalized that experience enough to share it with others.

Nature of the Experience

The second common element of how team members related experiences was in the nature of the experience itself. References to experiences varied from problems encountered on previous projects presented as warnings of potential future problems, to positive experiences with approaches used successfully in the past. Other experiences conveyed factual or historical information to establish, for example, cause-effect relationships or measures of performance.

Experiences addressed four subject areas: people/relationships, processes, products, and politics. The experiences related in this study fell into at least one of these four areas. Team member experiences spanned different combinations of the nature of the experience (e.g., problem) and subject area (e.g., product), as demonstrated by the following examples:

“The other problem with them is [similar to a previous partner]. The part of the company that’s developed the product is splitting off... so they’re spinning this off to a smaller group ... The question is how big they are. If they’re down to four guys in a garage, I’d worry. If there are 50 guys, I think that would be great.” [People/relationship, in this case to a company, Problem,]

“[New product] is going to get 20-30 cm resolution images; we won’t do much better than that with [a proposed technology].” [Product, Measure of performance]

“Another thing to consider is what’s popular at the time. [Previous project] got chosen not for any good reason, other than that we needed a ... wow... whereas [a different project] which made a lot more sense ... didn’t get chosen because we had to make up for our past mistakes.” [Politics, Historical]

“For a sterilization technique, I’m sure [name] has thought about ... how to sterilize the outside of it, whether it uses dry heat or I imagine the hydrogen peroxide. In philosophy, we’re just basing it on the fact that hydrogen peroxide will become an approved technique. We have no reason to believe it won’t by the way. [Others] have used this ...” [Process, Success]

Relevance

The third element common to related experiences was information about the relevance of the experience to the current context. While the source indicated “who” had the experience, and the nature indicated “what” the experience was, relevance addressed “why” this experience was important and applicable.

When conveying relevance, speakers often implied a need for action. The underlying message was that this information should motivate a need to do something – usually something different than what was currently being done.

“... so with [earlier product], it was even worse because the magnification was higher ... we [started] to do software development but it never came to fruition. And in the case of [this earlier product] that’s what limited our magnification. They kept the magnification modest intentionally to maintain a respectable depth-of-field. But we’re facing the same history. So either we step back on our requirements and magnification or we bite off this job of doing the confocal.”

Relevance itself had multiple components: how closely the current situation matched the past, how likely a previous condition was to reoccur, and how time critical it was for the team to act on the information. Highly relevant experiences tended to originate from either earlier in the current project or from recent, highly similar projects producing analogous products. Team members indicated that conditions from their previous experiences were likely to occur on the current project and that the team should act on these experiences immediately. One such instance occurred during a discussion about electronics:

“We’re talking 20, 25 watts for all the electronics and all the electronics including the qualification is probably [\$ amount]. Now this isn’t bad because actually this is what it cost me for [prior project’s electronics] to do two much larger, dual-

sided boards, probably the equivalent of about six of these boards for [the same \$ amount].”

The degree of relevance ranged from directly applicable experiences that could, for example, prevent problems or decrease risk on the current project, to more general insights that added to the team’s understanding of, for example, the organizational environment or customer considerations.

3.2 Uses of experience

The preceding section describes the constituent elements of “experience” as related by team members during discussions. These elements serve as building blocks and provide insights into what constitutes an experience. They do not, however, address how experiences were used. The following describes several different ways in which team members applied their past experiences to the current project.

Experience as Warning

Team members routinely presented their experiences as examples of ways in which things had gone wrong in the past, e.g., problems, failures, or other negative consequences. When team members conveyed these experiences, they were essentially warning their colleagues about the risk that similar problems could occur on the current project.

Warning experiences covered all the subject areas: people, process, product, and politics, and originated from the full spectrum of sources. They tended to be highly relevant due to similarities to the current project, but varied in terms of the urgency with which the team should address them.

Engineer 1: “...we want to build lab and field testing into the instrument development process. ...It isn’t ordinarily done. But I think it’s extremely important in this case.”

Engineer 2 (agreeing): “... it’s critically important for you to do it. I think you might suffer a serious risk hit unless you’ve got that in there.”

Experience as Evidence

Team members used their experiences as evidence to support – or refute – the claims and conclusions of other team members. Experiences were presented dispassionately as facts or description of past events. The team then had the job of interpreting and reconciling the “evidence” to make sense of team member inputs.

Experience as evidence also covered the full range of sources and all the different types of experience. Most evidential experiences were highly relevant because team members related these experiences to influence the team’s understanding of a given topic. For example, when attempting to develop a cost estimate for a new technology, team members presented a variety of facts related to an older, analogous technology:

“[Previous technology] was [cost] but that doesn’t count the 10 years of R&D...”

“[Previous technology] was Class E [parts].”

“None of the [other technologies] were... critical [to project success].”

Experience as Credentials

A second reason that team members related experiences was to establish credentials, for either themselves or for someone else. Team members did this by providing a description of past accomplishments or experiences that indicated the subject person was accomplished in a given area.

When using experience as credentials for themselves, individual team members related their personal experiences and explicitly addressed how these past experiences related to the current team’s situation. As such, experience as credentials tended to use “I” or “we” for establishing self-credentials, or “they” when establishing the credentials of another person. The relevance of experiences related to establish credentials tended to be either highly relevant to the subject of interest (for self-credentials) or highly general, establishing broad credentials (for others).

“One of the problems [on the last project] was losing [name]... He’d write pages and pages of stuff ... 10% of which was just golden.”

Engineer 1: “I don’t think anybody’s looking at the stuff that applies to us.”

Engineer 2: “[Name] is. And he has a great, great fervor of energy...”

“That was [name’s] argument also when I talked to him. And he’s done this as much as any human being on this planet.”

Experience as Connection

The third application of experience was to make connections and establish relationships. Team members used their experiences to illustrate

connections between different elements of the project. Relevant examples quickly demonstrated how two seemingly independent areas could interact. Team members also relied on their experiences to show connections between the project and external entities. Team members used past experiences to show dependencies on other projects, to stakeholder groups, or between organizational units.

Team members would also use past experiences to establish connections with other team members. One team member would, for example, highlight shared experiences in an effort to build common ground or establish a rapport with teammates.

Each of the three types of connections – project elements, external entities, common ground – covered the range of sources, although common ground building focused most heavily on first-hand “I” and “we” experiences. Connection experiences covered a broad range of subjects and types, and varied significantly with respect to relevance – particularly for building common ground. Intra-team connections generally involved process and product areas, as did system connections. External connections tended to be based on people or relationship areas or on political experiences.

Team members often made multiple types of connections during their discussions. Consider the following exchange between two scientists discussing a measurement technique. The first scientist begins by establishing the relevance of past experience by connecting the current project to a previous one:

Scientist 1: “The [other project’s] objectives, I presume, were very comparable to what we wanted to do...correct?”

The second scientist elaborates on the relationship and makes a connection between technology improvements and the goals of this project.

Scientist 2: “They were looking at isotopic CO₂, two isotopes and then just pure water. We can do a lot better than that now. In fact, we’ve got better wavelength regions to do the CO₂, but we can actually get more meaningful measurements.”

The first scientist connects external stakeholder concerns, i.e., using new technology rather than proven “heritage” technology, and implications of the new technology for the system design.

Scientist 1: “We have to be careful that better is no always prized, as compared to heritage here. We have to make the story that better simply involves chopping out a laser, for example.”

Team members also made interpersonal connections to other team members through both task and personal experiences. One such instance combined elements of both as four team members (TM 1-4) realized they had all worked with another colleague in the past:

TM 1: “Let me make a suggestion about those costs. I think we’d be remiss if we didn’t look carefully at the [previous project’s] costing that’s already been done for this. A lot of the elements are the same ... Everyone has retired... [Name] was the project manager.”

TM 2: “[He] was my first supervisor.”

TM 1: “Is that right? He’s a good guy.”

TM 3: “...it doesn’t seem that he’s [old enough to have retired].”

TM 4: “He sure did [look that old] by the end [of the project].”

TM 2: “I used to kid him about being the Dick Clark of [the Laboratory].”

This exchange “broke the ice” for these four team members and established a greater sense of camaraderie.

3.3 Integrating Experiences

Each member of a project team brings with them the set of his or her personal experiences, and is expected to share those experiences with the rest of the team for the benefit of the project. The team is responsible as a group for processing a variety of inputs, including the experiences related by individual team members, and making sense of these inputs. Therefore, to understand the role of individual experiences in project teams requires understanding how the team consolidates, reconciles, and otherwise makes sense of the variety of experiences of its members.

When combining experiences and other information, teams face two general situations. First, the experiences of team members may be consistent and therefore reinforce individual perceptions. Second, experiences may be contradictory, thereby requiring the team to reconcile and integrate conflicting perspectives.

Most instances of relating experiences occurred in the context of an on-going discussion where the team members’ experiences were additional pieces of information relevant to the topic at hand. Team members integrated information from multiple sources and in multiple forms. Experiences that were first person, highly relevant, and actionable were more readily attended to by teammates.

In some instances, different team members injected multiple types of experiences into the conversation. These discussions revolved around making sense of often-contradictory information, as one person's experiences were used to refute those of a fellow team member.

In the following example, team members (TM 1-4, not the same individuals as in the previous example) contributed to the discussion based on their individual and "inclusive we" experiences with software development. The example begins after one team member suggested incorporating a new software technology.

TM 1: "I don't want to get into anything that starts to change [software]."

TM 2: "Maybe we could use a good deal of [software from an existing instrument] for some of this stuff."

TM 3: "That's scary."

TM 2: "Sorry."

TM 1: "I haven't seen a successful software inheritance – ever. If there's anything that starts to blow your costs, it certainly seems to be that."

TM 3: "I'm confused. If you can't inherit it, then that means that you are building new [software] anyway."

TM 2: "But we're inheriting [system] software I presume ... some of the [instrument software] was on [that system]. We have the same chemical arrays, for example. We can probably use exactly the same code."

TM 1: "There's probably going to have to be some changes made..."

TM 4: "By the way, did they fix that piece of code [that caused the previous failure]?"

TM 3: "I'm sure someone will check on that..."

TM 2: "[Name] will know about that. He feels personally responsible for that to be honest."

As illustrated in the above example, integrating experiences involved the participation of multiple team members. Team members made use of detailed information provided by the speaker to assess relevance and the credibility of the source. Team members offered evidence both in support and in opposition to the presented experience. Highly relevant first-person information appeared extremely convincing to team members.

3.4 Summary

The preceding sections describe how project team members communicated their experiences, how they used these experiences to influence the work of the

team, and how the team worked as a group to integrate and reconcile experiences from multiple members. The results indicate that when sharing experiences, team members communicate three common elements: the source of the experience, the nature or type of experience, and an indication of if and how the experience is relevant to the current project.

Team members apply their experiences to support the work of the team: to warn the team about potential problems, to provide evidence to support decision making, to establish an individual's credentials, and to make connections between systems, with external stakeholders, and among team members. Individual team member experiences represent one type of information shared by the team. To use this information effectively, the team had to integrate information and experiences from multiple sources and reconcile differences.

Explicit reference to experience permeated team discussion and determined in part when and how team members attended to information and how they used that information. How team members structured, applied, and integrated their experiences offers multiple insights into how Knowledge Management Systems can be designed to support New Product Development projects.

4. Implications

Knowledge Management Systems that intend to capture experiences for future application can learn from how individual team members structure their experiences, relate them to the team, and work with their teammates to integrate experiences into the team's information processing. The following sections discuss the implications of this research on KMS implementation based on representing, applying, and integrating experience.

4.1 Representing Experience

When relating experiences, team members provided three standard pieces of information: the source of the experience, the nature and area of the experience, and sufficient information to determine relevance. The consistent presence of these three elements implies that any knowledge management system designed to exploit experiences as knowledge needs, as a minimum, to capture and provide these three elements.

Common wisdom advises to "consider the source" when evaluating any new information, and that advice appears to apply to the experiences of others.

Prior research indicates that simply knowing the source, as well as establishing the credibility of the source, are important for knowledge reuse [3][26].

The second common element of experience is the type or nature of the experience. Team members presented experiences at varying levels of abstraction, e.g., from gross generalization of an experience as positive or negative, to a detailed description of a specific event or occurrence. Team members employed an implicit taxonomy to categorize their experiences, establishing relevance by project, by field, by system, by technology, and by timeframe, indicating that multiple categorization schemes operated simultaneously to cover the areas of interest for project team members.

Using a general-purpose categorization scheme based on people, process, product, and politics effectively spanned the domains of interest for this particular project [cf. 6]. Knowledge management systems will similarly need to develop both project-specific categorizations as well as multi-faceted, general-purpose mechanisms to capture the variety of ways that project team members categorize their experiences.

Finally, each experience exchange included information from which to determine relevance. Previous research identified relevance as critical for knowledge transfer [37] and reuse [24]. The previously described categorization scheme is necessary, but not sufficient to support determination of relevance. Determining relevance requires matching the experiences from similar contexts to the salient features of the current context. Therefore, to support determination of relevance, KMS will need to (1) capture contextual information about the experience, (2) model the salient features of the current context, and (3) compare the two. In the examples from the project studied here, relevance was often conveyed through the use of short narratives that, for example, told a story relating how and why the experience occurred.

KMS to support the application of experience knowledge must therefore capture and provide the three common elements of interpersonal experience exchanges. Doing so will require developers to address multiple issues associated with KMS for new product development [5], as well as concerns particular to experiences such as the narrative stories that sometimes accompany them.

4.2 Applying Experience

The results of this research indicate that team members adapted how they conveyed their experiences to different situations. Team members

varied the amount of detail they presented as evident from examples presented earlier in which one team member spoke at length to convince the team to take action regarding magnification requirements, and in which another team member used two words, "That's scary," to convey the lessons learned from her experiences with the system software on a previous project.

Relating an experience can be thought of as delivering knowledge to one's teammates. Selecting what knowledge to share and how to present it is an example of personalization, where delivery is tailored to suit the needs of the recipient [33]. Knowledge management research has recognized the need for personalization from both a strategic perspective [15] and as a way to support worker creativity [27].

Acknowledging a lack of practical advice on how to support personalization in KMS, Majchrzak and colleagues [23] recommended: (a) dynamically modeling user knowledge needs, (b) developing flexible delivery mechanisms, (c) providing rules for matching user needs with delivery mechanisms, (d) adhering to clear policies about knowledge sharing to build trust, and (e) focusing on injecting knowledge that is actionable. These recommendations clearly apply to experience sharing, but may require special consideration due to the nature of experiences. For example, many experiences related by team members referred to third parties that weren't present. Given the negative tone of some of those experiences, the team members may not have chosen to share a given experience if different team members were in attendance. Similarly, experiences can be highly personal and represent a subjective view into an event or situation. Therefore, KMS will need to address both the subjective and objective aspects of experience knowledge.

4.3 Integrating Experience

Team members used experience knowledge to contribute to a variety of team processes, including design, risk identification, decision making, planning & coordination, staffing, and sensemaking. Each of these team processes can be influenced by experience knowledge in different ways. For example, individual decision making has been shown to be influenced by a number of biases and heuristics, including the availability heuristic in which people place greater emphasis on more easily recalled experiences [38]. Teams are also more likely to seek information that confirms rather than challenges currently held positions, referred to as confirmatory bias [35]. Although research has shown that teams perform better when they discuss information in

detail [19], research into psychological safety indicates that team members are less likely to “speak up” at meetings if they perceive a personal risk in doing so [8].

KMS need to address the needs of different processes beyond simply providing context, by addressing ways in which these processes are vulnerable. For example, KMS can suggest disconfirming experiences to combat confirmation bias, or prompt otherwise quiet team members to relate their experiences.

Integrating experiences therefore requires knowledge of the individual experiences, models of information needs, an understanding of the project context, and an understanding of the vulnerabilities associated with the process. Team members routinely address all but the last of these requirements in their team meetings. The challenge for KMS implementers is to recreate that same level of support in a KMS.

7. Conclusion

This research studied the behavior of a team engaged in the formulation phase of new product development project to better understand how team members use their personal experiences in a project team setting. The resulting case study describes team behavior in detail and provides insights into how individuals structured their experiences for sharing with teammates, how team members applied their experiences, and how the individual experiences of multiple team members were integrated.

The primary contribution of this work is its detailed examination of experience as a type of knowledge and the identification of special considerations in the capture, use, and handling of this type of knowledge. This research represents a first step in understanding how to incorporate experience knowledge more effectively into KMS, by studying how this widely-valued type of knowledge is applied by team members in an actual work environment.

8. Acknowledgements

This research was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration. The author extends her appreciation to Dr. Michael Hecht and the CryoScout team.

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