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Article

Is Project Management Still an Accidental Profession? A Qualitative Study of Career Trajectory

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Abstract

In this study, the authors used qualitative techniques to look for reoccurring themes related to 87 project managers' responses to interview questions associated with entry into the field of project management and career progression. The study found that despite the efforts of higher education, professional associations, and their professional development and certifications, the project management remains a destination by accident. Professional project managers do not intend to be project managers but "fall into" the profession. This study provides a conceptual framework for project manager career trajectory that has implications for project management training and mentoring and contributes to the growing literature on the accidental profession.

Keywords

project manager career progression, project manager success factors, project manager career path framework

Introduction

The nature of work is changing, and with it, the demand for project managers is increasing. The practice of project management has been proven in the traditional project-based industries, such as aerospace and information technology (IT), and the demand is growing in the energy, health care, constructions, and finance sectors (Hodgson & Cicmil, 2006; Project Management Institute [PMI], 2014, n.d.). It is projected that between the years 2010 and 2020, "15.7 million new project management roles will be added globally across seven project intensive industries . . . Manufacturing, Business Services, Finance & Insurance, Oil & Gas, Information Services, Constructions, and Utilities" (PMI, 2013, p. 2).

In 1971, in his editorial "The Accidental Profession," J. Gordon Davis begins by asking how PMI members prepared for the profession? He further asked, "How many of us could or would employ newly-graduated individuals in positions relating to the design, development, and operation of project management systems" (Davis, 1971, p. 10)? This work was followed by Pinto and Kharbanda (1995) and others who wrote about the accidental profession. As an accidental profession, the literature (Hauschildt, 2000; Sauer, Li, & Johnston, 2001) indicated that management selects project managers because they have potential as a project manager or a technical specialty. Rarely are project managers hired for

their role. Furthermore, Darrell, Baccarini, and Love (2010) discussed what little preparation and training project managers get for their job, contributing to the notion of project management as an accidental profession. Although research has investigated the role of the accidental profession, there is still work to be done. The accidental project manager is relevant today requiring more study and understanding in a variety of industries and organizations (Darrell et al., 2010). Therefore, the current research study endeavors to find out where project managers come from and how they got into the role. This is accomplished by interviewing 87 project managers about what types of career experiences led them to project management.

Literature Review

As discussed by Pinto and Kharbanda (1995), project managers occupy a precarious situation in which they possess little authority and operate outside of the traditional hierarchy. In a traditional expected career path, a project manager

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acquires skills and knowledge to manage projects through a combination of skills and experiences (Darrell et al., 2010). But Darrell et al. (2010) commented that many project managers who fall outside of traditional project management industries enter the profession by accident. In other words, these project managers enter the profession without formal training. Often, project managers are picked because of technical knowledge (Ranf, 2011), but they require other skills and knowledge as well.

Project Manager Skills and Knowledge

Many studies have been published about the characteristics, skills, and competencies of the serving project manager. In a study of IT project managers, necessary skills such as (a) personal integrity, (b) team development, (c) client management, (d) planning and control, and (e) problem solving were found to be a requirement for success (Napier, Keil, & Tan, 2007). That study also categorizes IT project manager archetypes, including (a) general manager, (b) problem solver, (c) client representative, and (d) balanced manager. The authors concluded by identifying several constructs related to the aforementioned skills category, including constructs such as (a) leadership, (b) team building, (c) communication, (d) quality focus, and (e) managing complexity among others.

The requirements for IT project manager executives were studied and reveal six critical core competencies necessary for project managers, including (a) leadership, (b) communication, (c) verbal and written skills, (d) attitude, (e) the ability to deal with ambiguity, and (f) change (Stevenson & Starkweather, 2009). These findings are consistent with Napier et al.'s (2007) study and point to a preference toward soft skills of project managers.

In the ranking of the most critical skills for IT project managers, Keil, Lee, and Deng (2013) found a slightly different skill set with 19 critical skills necessary for project managers. Similar to the aforementioned studies, leadership, communication, team building, and quality were important. Additional skills such as scope management and listening were seen as critical skills as well (among others). Interestingly, in follow-up interviews, leadership, verbal communication, scope management, listening, and project planning were seen as the top five skills for project managers.

In an article examining the role of project managers in health care, the authors concluded that a skilled project manager would address the scope, risks, procurement, quality, and communication with the project (Hernandez, Aderton, & Eidem, 2011). Project manager collaboration skills with all stakeholders was also found as important. More recently, in a study across multiple sectors (health, technology, entertainment, military, etc.), research showed that several competencies (and leadership styles) are needed depending upon the project outcomes, and to be effective, a project manager

must be able to shift his or her style and competencies to match the project needs (Galvin, Gibbs, Sullivan, & Williams, 2014). The authors further recommended that project managers needed to use critical thinking skills and adapt to the ever-changing environment.

In another study, results suggested that multiple-project managers possessed unique competencies, including (a) organizational experience, (b) interdependency management, (c) multitasking, (d) simultaneous team management, and (e) management of interproject processes (Patanakul & Milosevic, 2007). This research acknowledged that multipleproject managers need to have both individual technical competencies and competencies that can stimulate cross collaboration across multiple projects simultaneously. The top critical competencies for multiple-project managers were monitoring (administrative), problem solving (interpersonal), business sense (business/strategic), and knowledge of product applications (technical). Holzle (2010) outlined several components to the project manager's competency profile, including (a) methods and expertise, (b) problem-solving skills, (c) cooperation and team skills, (d) communication skills, and (d) intercultural competence.

Expertise and knowledge transfer are critical to the success of practicing project management and the organizations within which project managers work (Demartini & Paoloni, 2011). Petter and Randolph (2009) discussed how knowledge is a combination of experiences, values, insights, and information. They went on to say that the context is important in identification and transfer of knowledge in organizations. Brown, Adams, and Amjad (2007) discussed that project managers' knowledge and experience are important determinates in project outcomes. They further explained that a combination of knowledge and experience would improve project manager performance. Furthermore, Yasin (2000) found that the use of communication exceeded project manager's knowledge, indicating that communication needs to be an area of emphasis. Finally, Krane, Olsson, and Rolstadas (2012) found that owners of a project need to rely on and trust the project manager and his or her knowledge because, often, the project manager has more knowledge of the particular project.

Organizational Support for the Project Manager

Organizational support is critical, as often, project managers have found much success in a technical field but are not fully aware of the management skills that are necessary for project success (Darrell et al., 2010; Pinto & Kharbanda, 1995). Ranf (2011) found that originally engineers were assigned project manager roles because of their technical knowledge but that emphasis has shifted, as project managers must have knowledge of business operations as well. Often, project managers are thrown into an organization without the support from an organization (Darrell et al., 2010). This lack of human resource planning makes it

difficult to prepare our future project managers for the important skills, knowledge, and competencies that are critical for their success.

Project manager support may be tied to project success, and it is important to prevent project managers from performing in a vacuum (Larsen & Gobeli, 1989). Holzle (2010) found the importance of a project manager to be aligned to appropriate career path levels. Holzle further contended that an organization needs to engage and provide continuity for project managers like they would any other career field in their organization. Furthermore, projects need to be classified, and that needs to be factored into the project manager's career path as well. The project manager must receive support from the organization and have a definition of roles. Without an organizational support structure that defines the project manager's roles and responsibilities, projects would lack functional manager support (Anantatmula, 2010). The organization needs to support the project manager, so that every member of the chain of command will support the project manager as well. Anantatmula (2010) observed that the project manager has a role in supporting functional managers, but they need management support as well for project success.

Project success was more likely when related to a clearly defined mission, a cohesive team and management support (Larsen & Gobeli, 1989). Darrell et al. (2010) discussed that as one helps project managers and provides them with the requisite organizational support, this can be accomplished through a wide range of supportive mechanisms that organizations can implement. The organization can take other steps to assist project managers. Some of these steps are through a strong organizational culture and leadership(Darrell et al., 2010). A mature project management program is also important. Organizations need to engage in strategic staffing, have a strong training program, and have team autonomy on projects to improve team effectiveness and decision making (Drouin & Bourgault, 2013). Despite these recommendations, Drouin and Bourgault urge for more empirical studies of organizational support, as the subject has not received much attention in the literature. It is with this theoretical framework that the current study was undertaken.

Method

The methodological approach chosen for the present study is qualitative with the main objectives being to investigate project managers and to understand the phenomena about where project managers came from and how they arrived at the role. This was accomplished by interviewing project managers about what types of career experiences led them to project management and then analyzing the participants' stories. Through this process, the researcher may take an active role and "restory" the stories into a framework that makes

Table I. Topical Protocol.

Ouestion

How did he or she get started in the field? How has his or her career progressed?

sense (Creswell, 2013). Students in a graduate project management degree program were assigned to interview a professional project manager and pose questions about associated career experiences and career progression. A total of 87 project managers, from a variety of U.S.-based and international organizations, were interviewed. The students posted the interview summaries into an online learning management system for evaluation and comment following a topical protocol delineated in Table 1.

The interviews yielded nearly 130 pages of interview summary data from project managers discussing career experiences. Keeping with qualitative tradition, after conducting the interviews and cleansing the data, the authors read all the interviews and took note of the emerging themes related to the following research question:

Research Question 1: Where do project manager come from and how did they get there?

Once all of the interviews were read in this first review of the data, the next step was data entry into the qualitative software.

Qualitative coding software, nVivo, is a software that aids with the organization and analysis of unstructured data. The illustration below depicts the coding process (QSR International, 2014, p. 6). Each interview was imported independently, and the list of emergent themes is loaded as categories, or nodes, reflected as "Import" and "Explore" below. The "Code" process involves reviewing of each individual interview and then linking the individual comments from the interview to themes. This begins a cataloging process of the data.

Further analysis was conducted through keyword queries to ensure that all instances of specific keyword or phrase were reviewed and coded, "Query." Any item that was initially missed was included and the coding was complete. Then, themes were collected and the frequency that each theme appeared was documented. A word frequency analysis was performed against each segment of coded text to gain an understanding of how closely each identified theme was related to others in terms of common words and expressions, allowing the authors to "Reflect" as to the implication. Relationships were established, and then themes were classified into groups. Finally, the conceptual framework was built up from the themes, classifications, and relationship. This "Visualize" step allows this study's 87 interview results to be a representation of career trajectory.

Table 2. Original Themes.

Name	Sources (n = 87)	References
Worked the way up the ranks	68	78
Unintentional career field	46	50

Limitations

Although this study offers a view of project managers as an accidental profession, the present study is not without limitations. One limitation to qualitative research is high internal validity and low external validity. The researchers attempted to mitigate this limitation through a high sample size (n =87). Furthermore, despite that the interviews were collected from graduate students in multiple different sections of a project management fundamentals course with different professors, the results were consistent regardless of professor or interviewer. The study had low external validity due to the lack of interviewer training and the lack of contact between the authors and the interviewees. Another limitation is the lack of demographic information collected. This presents a problem with generalizing the data with regard to his or her industry, years of experience, and if he or she was a certified project management professional. Despite the limitations, several conclusions applicable to the project manager were obtained and discussed above.

Analysis

In this analysis, two themes observed from "Project Manager Insights: An Analysis of Career Progression" (Marion, Richardson, & Earnhardt, 2014) were further analyzed to better understand the following:

- 1. the career trajectory of project managers, and
- interview summary comments associated with the ongoing observation that project management career paths are likely to be unintentional or evolutionary in nature.

The codes selected for further analysis are illustrated in Table 2.

These two underlying themes appeared in 78 of the total 87 interview summaries, and 50 instances of each theme were coded. Leveraging nVivo's sorting feature, the two major themes were examined a second time, and a set of subthemes emerged. The sub-themes are illustrated in Table 3.

The sub-themes illustrate a repeatedly occurring pattern observed throughout the analyzed interview summaries. This pattern reveals an evolutionary career trajectory in project management that is often unintended by the individual, and is realized as the employee builds on career disciplines over time. The interview summaries often describe an increasing individual influence in the organization as skills mature,

Table 3. Sub-Themes.

Name	Sources	References
Maturing skills and interaction	47	54
Evolution	39	45
Focus on technical discipline	25	26
Wide interaction and responsibility	19	21
Preparation meets opportunity	15	17
Discovery	13	18
Mistake	5	5

more frequent cross-functional interactions occur, and coordination increases. Brief descriptions of each sub-theme, along with significant interview summary excerpts, provide support for this understanding of the "typical" project management career trajectory.

Maturing Skills and Interaction (47 Sources [54% or Respondents] / 54 References)

The project manager's evolution appears to mirror senior functional manager or general manager career paths. The project manager, as reflected in the interview summary excerpts, begins with a focus on a specific technical discipline, but over time encounters opportunities to develop management skills and to interact with other disciplines in the organization:

The way that I got started in this field was through my experiences in other positions I have had. I have been a scheduler, a customer service agent and lead, a shipping specialist, a supply specialist and lead... an inventory manager, a master scheduler, a project manager, a portfolio manager, and now a program manager.

There is no set career path for becoming a project manager, advancement generally occurs incrementally, and project management responsibilities expand as you move up the organization's hierarchy.

In each of these interview summaries, it is clear that there is no single-project management career path. Rather, the project management role seems to emerge from employee experiences in different roles within the company over a period of years. The more knowledge and experience gained, the more likely it appears that the employee will be assigned an integrative role such as project management that touches all functional groups.

Evolution (39 Sources [45% or Respondents] / 45 References)

As is observed from the interview summary excerpts, individuals are not likely to be assigned project

management positions from "day one," rather they appear to arrive at the position after a period of growth and development:

He said that he sort of fell into the area of project management as a natural progression along his career path and found it to be a very challenging and rewarding work experience.

Although I assumed a program management position a few years ago on the. . . . program, my start into that field began years before through a series of career opportunities and experience that enabled me to lead projects of increasing intensity and responsibility.

The theme of evolution illustrates how project management tends to be an emergent role rather than one that is assigned as a result of a course of study or training. Typical of the process of evolution, the arrival at the end result was not planned but created by trial and error and circumstance.

Focus on Technical Discipline (25 Sources [29% or Respondents] / 26 References)

In many observed interview summary excerpts, the project managers of today were the technical specialists of yesterday.

He got started in his current field when he was working operations as an engineer

When I received my undergraduate degree . . . I started doing software development.

He got started in the field working for the same company in development and testing parts for commercial aircraft ventilation systems.

As can be seen in this theme, many project managers begin their respective careers as technical specialists. Those with soft skills in addition to technical skills are observed to eventually gravitate toward management positions. Given that many technical disciplines tend to produce unique deliverables, project management positions may well be natural management destinations for such science, technology, engineering, and math professionals.

Wide Interaction and Responsibility (19 Sources [22% or Respondents] / 21 References)

In some observed instances, the evolutionary process continues beyond the level of project manager and results in the attainment of significant additional responsibility. This suggests that the evolutionary process observed in the interview summaries applies equally well to program managers and project executives.

With many people who seek promotions he did the jobs required to climb the corporate ladder and now finds him in charge of the entire process.

My career has progressed steadily from being put in charge of small products, such as relocating a specific area of an aircraft engine production facility to a new location, to acting as the single point of contact for the annual fundraising efforts of a 1,200 person organization. . . .

This theme illustrates that career experience associated with an increasing scope and span of control may provide a career trajectory toward project leadership opportunities. An increased span of control is inherently cross-functional in nature and is therefore consistent with the organizational structure of projects.

Preparation Meets Opportunity (15 Sources [17% or Respondents] / 17 References)

Some project managers interviewed experienced a more rapid progression by seeking out opportunities either through volunteering or taking the opportunity to demonstrate leadership capability:

Through the honing of skills by experience and volunteering for job task opportunities, does recognition by hiring managers arrive.

Once I was working for that company as a SME (subject matter expert) I got pushed to a project lead within two months due to my military background and leadership ability.

As evidenced by interview excerpts associated with this theme, employees who find themselves prepared by a lengthy career experience may one day encounter an opportunity to move into the realm of the project manager. This positive result could be said to be a combination of both the natural experience developed as a career evolves, and the chance encounter with an opportunity to take on a more extensive role.

Discovery (13 Sources [15% or Respondents] / 18 References)

Some successful project managers stated that they were unaware of project management as a profession until later in his or her career: "... It was then, that she discovered exactly what this new management style was a career field called project management." "I didn't think of project management at the time but now I know it was a project."

It is of interest to observe that some of today's project managers revealed a tendency to be unaware of the project management profession prior to taking on the role. This is because project management lacks professional status and the lack of focus on a specific career goal is consistent with

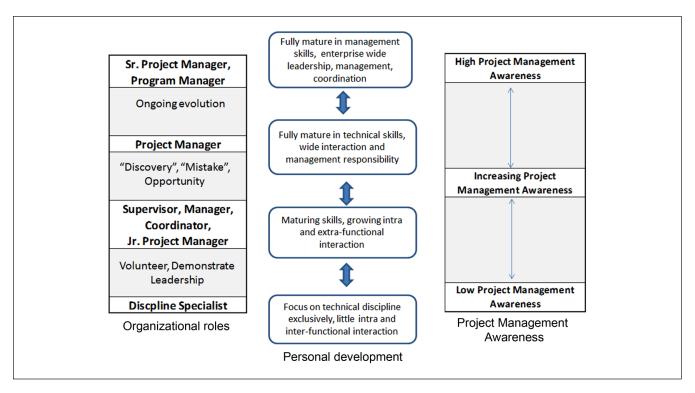


Figure 1. Project manager career path conceptual framework.

the evolutionary nature of the project management career path observed in the study.

Mistake (Five Sources [6% or Respondents] / Five References)

The fact that the project management profession can be a career path that emerges, rather than one that is specifically chosen by the employee, is highlighted by these revealing comments. Some project managers who were interviewed characterized the career as an "accident" or a "mistake": "In the mid 90's, Donna said she sorta [sic] fell into her career by accident; really out of necessity." ". . . Well thank you for asking. I got started in Project Management by mistake . . ."

The "accidental profession" phenomenon observed in the interviews appears to be an artifact of the willingness of some individuals to take on more responsibility and leadership. Those who do and become effective in the role are observed to eventually become project managers.

Conceptual Framework

An inductive approach to developing theory begins with the data (interviews), seeks patterns in the data (themes), and then seeks to build up a larger picture of the phenomena under study (conceptual framework; Creswell, 2013). When the themes are put in logical order based on career progression, we arrive at the following conceptual framework:

Figure 1 represents a typical career trajectory as represented by this study's 87 interviewees. On the left side of the diagram, "organizational roles" are depicted in bold. They begin at the bottom, suggesting the beginning of a career, as a discipline specialist. The interview results suggest that as the discipline specialist becomes proficient, volunteers for additional responsibility, and demonstrates potential, he or she evolves into the role of supervisor or junior project manager. It is at this point in one's career that our interview subjects describe entry into project management roles by accident, through discovering a better understanding of how the organization accomplishes work cross functionally. The progression to a project manager role, and later a senior project manager or program manager, is an evolutionary process. As individuals are proven communicators and collaborators, these individuals describe successful project management experiences.

On the right side of the diagram, this continuum illustrates individual awareness of project management as a practice and later as a profession. Participants in this study describe "doing" project management and becoming aware of project management certification. Seeking the project management professional certification often became a byproduct of the individual's career path evolving into project management roles and the certification provided external professional credibility.

The center portion of the diagram represents the individuals' personal growth and development over time, building a

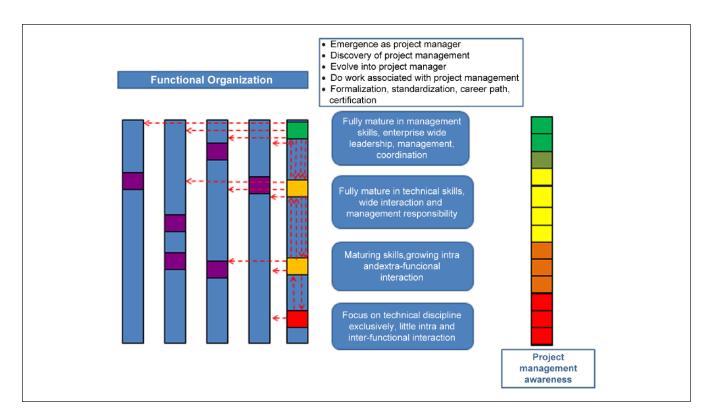


Figure 2. Project manager career path conceptual framework in the organizational context.

career. Starting at the bottom, an entry into the job market expects a focus on a discipline. An individual is expected to become proficient at "the job," which could require little to no interaction with the other parts of the organization. As time passes and proficiency increases, the individual skill set matures. He or she better understands the nature of how work is accomplished and the requirement for communications and collaboration. Moving up the professional development line, an individual has proven himself or herself as a technical specialist, is successful in interorganization coordination, and may be serving in a managerial capacity. The top of the professional development timeline reflects full immersion in the organization and is recognized as a subject matter expert who has a broad understanding of the organization's enterprise wide operations and has developed a strong leadership skill set.

Figure 2 presents the *project manager career path conceptual framework* in the organizational context. Under the heading "Functional Organization," the columns represent the different functional areas, such as operations, production, marketing, and human resources. As described above, the project manager career path conceptual framework has three distinct concepts represented: (a) organizational roles, (b) personal development, and (c) project management awareness. Here, we see those three concepts embedded in the context of a functional organization. In the center, the personal development process illustrates a career progression from the bottom to the top, just as described above. To the right is

the project management awareness spectrum which at the bottom is colored red, indicating minimal or non-existent project management awareness. The color code changes from orange to yellow as an individual becomes more aware of project management practices and then transitions to green, suggesting that an individual is fully immersed as a project manager or a possible program manager. Up at the top of Figure 2, "organizational roles" are identified.

The left hand of the diagram represents a typical functional organization. The column furthest to the right is where the project manager resides. It is evident from this that as the individual's skill set increases, and the communication and collaboration across functional areas, he or she becomes more aware of project management practices, our interview participants describe that intersection is where project managers succeed. As the communication and collaboration span the entire organization, this may be a fully qualified project manager who may be certified. A fully immersed project manager, who may be certified, is mature in his or her technical discipline, very aware of the project management principles.

Discussion

The themes that emerge from the interview summaries illustrate a career path that does not typically begin with the goal of becoming a project manager, but rather evolves over time as experience builds. The pattern is validated by selected

excerpts from the interview summaries, and the number of instances that each theme is observed. For example, nearly 70% of all instances of coded themes occur in the top three noted themes of "maturing skills and interaction," "evolution," and "focus on technical discipline."

This study suggests that what J. Gordon Davis asked in 1971 may still need addressing the following: Are we still depending on accidental education of our project managers? What is the role of PMI? What is the role of the organization? (Davis, 1971). Higher education seems to be providing ample opportunities. There are more than 900 project management degrees being offered by more than 450 colleges and institutions globally (Higham, 2014). The degrees are at the bachelor, master, and doctoral levels residing in a variety of university disciplines: engineering, business, health care, and interdisciplinary studies to name a few. There is a significant growth compared with 1994 when there were only 11 formal project management degrees, and most were in the construction discipline (Higham, 2014).

When considering the role of the project management professional organizations, J. Rodney Turner (1999) described the support that should be expected:

- 1. Define the knowledge upon which the profession is based
- 2. Contribute to the further development of that knowledge
- 3. Define the minimum knowledge and competence in its use required to be a member of the profession
- 4. Aid in the continuing professional development of members of the profession
- 5. Welcome potential new entrants to the profession, and aid in the development in the profession
- Assess individuals to determine whether they have achieved the required minimum levels of knowledge and competence to be professionals
- 7. Certify individuals so that the public at large can be assured of their competence to practice as professional (p. 41).

As evidenced by the growth in membership of the PMI, the International Project Management Association, the Association of Project Management, and others; the professional development; and the multiple certifications offered by each, it appears that the professional institutions are striving to solidify the profession. In 2006, Morris, Crawford, Hodgson, Shepherd, and Thomas (2006) likened the project management profession to occupations described as "semi-professions," "commercialized professions," and "emerging professions." The article further describes the importance of the Body of Knowledge in formalizing the profession. But, they caution, "If we rely on the project management associations to tell the academics what to think and teach, instead of having research

test the concepts theoretically and the issues practically, we get into self-fulfilling prophecies" (Morris et al., 2006, p. 719).

Another interesting finding is that project managers interviewed began their project management careers with a strong technical background as a discipline specialist. The participants commented as they progressed in their careers; they developed management skill sets. This finds congruence with the literature review that found project managers need strong soft skills (such as communication and critical thinking) in addition to technical skills. Specifically, the participants noted that the need for communication, collaboration, and leadership has necessary skills for the project manager. These data continue to inform the growing literature on project manager competencies.

This study analyzed 87 interviews of practicing project managers and the answers to questions about entry into the field and career progression. What this study found is that despite the efforts of higher education to provide a formal path to the profession, despite the very popular professional associations and their professional development and certifications, that project management still is a destination by accident.

Future Research

First, the current study offers a conceptual framework for project manager career paths. Although the study confirms earlier work (Davis, 1971), there is a need for additional studies, particularly related to the proposed framework (Darrell et al., 2010). The proposed framework infers that the career path for project managers remains an informal process in many companies. The data indicate that project managers arrive at their role through experience. Future studies can confirm the proposed framework and further test the findings proposed in the current research study. In addition, future studies could modify or add to the conceptual framework outlined in this study. Another research avenue for future studies could include demographic data and interview project managers in different countries and cultures to see whether the results are consistent globally. Is project management an accidental profession globally? This would be an interesting question to answer. The question of project manager career progression could be investigated on a global scale with multiple cultures and specific industries. Finally, future studies could investigate the role of leadership style in project manager success. For example, does a servant leader have more project success than a transactional leader? Does a project manager's leadership style even matter in project execution? This could be an interesting research avenue for future project management research.

Conclusion

The present study builds on Davis's (1971) challenge to the profession and subsequent research describing the accidental

profession, investigating the career progression of project managers. The research contributes to the topic of career progression by offering a conceptual framework providing insight into project managers' career progression. The study found that despite the efforts of higher education to provide a formal path to the profession, regardless of the very popular professional associations and their professional development and certifications, project management remains a destination by accident and that professional project managers do not intend to be project managers but "fall into" the profession. This has implications for project management training and mentoring in the future and contributes to the growing literature on the accidental profession.

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