

Preparing for the Talent Drought
Case Study on Succession Planning Methodology in the Construction Industry

by

Jake A Gunnoe

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Approved July 2015 by the
Graduate Supervisory Committee:

Kenneth Sullivan, Chair
Avi Wiezel
Dean Kashiwagi

ARIZONA STATE UNIVERSITY
August 2015

ABSTRACT

The workforce demographics are changing as a large portion of the population is approaching retirement and thus leaving vacancies in the construction industry. Succession planning is an aspect of talent management which aims to mitigate instability faced by a company when a new successor fills a vacancy. Research shows that in addition to a diminishing pool of available talent, the industry does not have widespread, empirically tested and implemented models that lead to effective successions. The objective of this research was to create a baseline profile for succession planning in the construction industry by identifying currently implemented best practices. The author interviewed six companies of varying sizes and demographics within the construction industry and compared their succession planning methodologies to identify any common challenges and practices. Little consensus between the companies was found. The results of the interviews were then compared to current research literature, but even here, little consensus was found. In addition, companies lacked quantitative performance metrics demonstrating the effectiveness, or ineffectiveness, of their current succession planning methodologies. The authors recommended that additional research is carried out to focus on empirical evidence and measurement of industry practices surrounding talent identification, development, and transition leading to succession.

Notice: The information from this research has also been published in the Associated Schools of Construction Conference Proceedings. Minor changes have been made to the document to adjust for formatting, references, and additional appendices. (Gunnoe, et. al. 2015)

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	iv
LIST OF FIGURES	v
CHAPTER	
1 INTRODUCTION	1
1.1 Introduction.....	1
1.2 Industry Problem.....	1
1.3 Research Objective	3
2 CASE STUDY: PROFILING SUCCESSION PLANNING.....	4
1.1 Methodology	4
1.2 Interview Results	6
1.2.1 Identification	8
1.2.2 Development	10
1.2.3 Transition	12
3 CONCLUSION.....	13
REFERENCES	15

CHAPTER	Page
APPENDIX.....	19
A. DEFINITION OF TERMS.....	19
B. LITERATURE REVIEW SUMMARY.....	211
C. INTERVIEW QUESTIONS	233
D. SUMMARY AND COMPARISON OF INTERVIEW RESULTS	25
E. SUCCESSION PLANNING INDUSTRY STRUCTURE.....	27
F. COMPANY DEMOGRAPHICS DATA ANALYSIS	29

LIST OF TABLES

Table	Page
1. Company Information and Succession Plan Overview	6
2A. Top Competencies of High Performers by Citation	8
2B. Key Competency Categories and Color Code	9
2C. Sum of Competency Categories by Citation	9
3. Company Development Methodolog	12
4. Summary of Literature Review and Analysis	22
5. Summary of Reported Company Employee Data Points	30

LIST OF FIGURES

Figure	Page
1. Age Distribution of U.S. Citizens in 2000 & 2010.....	2
2. Methodology Process Overview	4
3. Succession Planning Process Overview.....	28
4. Box Plot of Reported Employee Years with a Company versus Years in a Position....	30
5. Box Plot of Reported Employee Age in the Project Management Career Path	30

Chapter 1

INTRODUCTION

1.1 Introduction

As global population demographics shift, the climate of the job market is rapidly changing across various industries. The pool of available talent is shrinking and the market demand is growing requiring the industry to focus more talent is assessment and management. Talent management is a broad over-arching human resource field that examines the life-cycle and development of an employee from the initial identification and acquisition up until departure from the organization. A single component of talent management is the aspect of succession planning. Since its conception in the mid-20th century, succession planning has taken on various definitions but as a general definition the Society of Human Resource Management (Tracey, 2004) states that succession planning “[is] the process of identifying long-range needs and cultivating a supply of internal talent to meet those future needs.” In essence, succession planning is how an organization utilizes the available talent pool to respond to a changing workforce.

1.2 Industry Problem

The overall scope of the problem is narrowed down to two key aspects:

1. A lack of available talent.
2. The industry and current literature have not yielded an agreed upon succession planning model.

In regards to the current talent pool, as seen in Figure 1 below, between 2000 and 2010 the population of US citizens 45-64 years old increased by 31.5% while citizens 25-44 years old decreased by 3.4% (U.S. Census Bureau, 2010). Therefore, a significant portion of the population is approaching retirement age and can be expected to leave the workforce within the next 15-20 years. As a result, the construction industry in particular is facing a shortage of qualified workers as many of the current industry leaders are approaching retirement (Yankov & Kleiner, 2001).

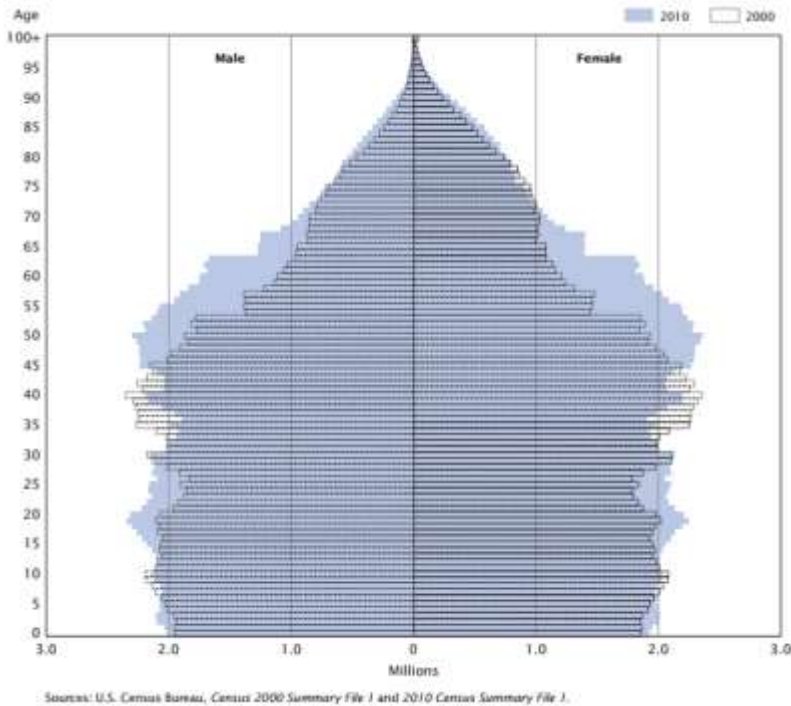


Figure 1. Age Distribution of U.S. Citizens in 2000 & 2010

In addition to a shrinking talent pool, organizations are struggling to address the widening talent gap. As retiring employees leave vacancies, the industry is hard-pressed to resolve the best method for succession. Current research and industry practices are scattered and provide little consensus (Giambatista et al. 2005), (Hor, F. C. et al. 2010), (Dries, 2013),

(Ahadzie et al. 2008). The need for succession planning theory and methodology is rapidly growing (Giambatista et al. 2005). Along with the changing workforce demographic, many organizations across various fields are facing considerable difficulties managing talent due to recent economic conditions (McCauley & Wakefield, 2006). (These findings are also verified within the construction industry through the author's additional research shown in Appendix F.)

1.3 Research Objective

Since the initial research by Grusky, succession planning has been widely accepted as a necessary source of instability, but the question that still begs to be addressed is the extent of the issue (Grusky, 1960). Past research has provided many different perspectives and methodologies to lead to more effective succession planning, but the author has found little empirical research measuring the extent of the issue and the current level of succession planning implementation in the construction industry. This research aims to create an initial profile of succession planning in the construction industry by examining and interviewing a small focus group of six construction companies. Through the interviews, the author aim to answer the following:

1. Do current models focus on all levels of succession planning or primarily executive level and late career succession?
2. Are company models based on current research or older methodologies?
3. Does the industry track measurable performance metrics demonstrating the extent of succession plan performance and organizational impact?

CASE STUDY: PROFILING SUCCESSION PLANNING

1.1 Methodology

The purpose of this research is to develop a baseline profile of succession planning in the construction industry by interviewing a focus group of construction companies and comparing the findings to current research literature. The author presented the research objective to a pool of fifteen Construction Industry Institute (CII) members of varying size, demographic, and area of operation. Of the fifteen, six volunteered to be interviewed. The interview structure incorporates high level questions about the company’s succession planning processes. The individuals selected for interviews are high level company executives, HR vice-presidents, and/or talent management directors or specialists. The methodology process overview is shown in *Figure 2* below.

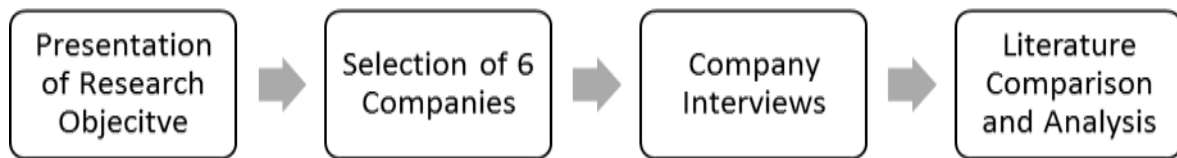


Figure 2. Methodology Process Overview

The field of succession planning is closely tied to other talent management processes. Given this, many other research efforts focused on succession planning also incorporate an in-depth discourse about other, more focused human resource processes such as replacement planning and leadership development. In efforts to provide a more defined

scope, the researchers used Hor's interpretation of Ibarra's critical succession planning aspects:

- (i) Leadership competency models that provide a blueprint for high performers.
- (ii) A functioning performance management system that measures individuals against the leadership competency models.
- (iii) An individual development planning process that helps narrow the present gap between current competencies and current performance.
- (iv) A measurement method that assesses how well the succession program is functioning over time (Hor, F. C. et al. 2010) (Ibarra P. 2005).

By consolidating items (i) and (ii), the model can be further simplified into three key focuses: identification, development, and transition. The goal of each subsequent phase is to funnel qualified successors into vacancies with minimal instability and maximum performance. The purpose of identification is to find candidates that exemplify key competencies and a level of comprehension that can lead to an effective succession later in their career. These competencies provide a performance baseline that are conducive to further development. Development takes place throughout the duration of employment. The goal is to train talent to further progress their core competencies in order to later fill a vacancy. This process can take various forms depending on company preference. In this research effort transition is assumed to occur once a vacancy opens up and a qualified successor has been adequately prepared to take the role. Transition focuses on individual

and company performance after succession takes place. (For additional references on defining the different succession planning processes, see Appendix E).

1.2 Interview Results

This research aims to create an overall scope for company succession plans by interviewing each company based on the three phase parameters of succession planning: identification, development, and transition. The scope is to measure the extent of a company’s succession plan as well as the key positions in which a succession plan is needed. During the interview, companies describe how they approach succession, best practices, and their key focuses. The key positions of a company are ones in which a full succession plan or process is needed. The criteria for a key position is solely defined by the individual company. The results of the interviews are shown in Table 1 below.

Table 1
Company Information and Succession Plan Overview

Company	Number of Employees	Succession Plan	Key Positions
A	500	Informal	President Only
B	10,000	Formal	Executive Leadership Only
C	50,000	Formal	Executive Leadership & High Impact PMs Only
D	30,000	Semi-Formal	Executive Leadership Only
E	12,000	Formal	Executive Leadership Only
F	900	Informal	Executive Leadership Only

The names of the companies are removed in order to maintain anonymity, but the company size is reported to provide research context. It is assumed that as company size increases so do the leadership requirements of executive positions due to the larger company scope and amount of subordinates. Furthermore, larger companies are assumed to have a higher need for succession planning due to the increased number of leadership positions across the organization as a whole. The author assigned three general categories to classify extensiveness of a company's succession plan: formal, semi-formal, and informal. A formal plan is one in which the company fully acknowledges an organization wide succession planning methodology and utilizes models developed through past research. A semi-formal plan is one in which the company incorporates a few elements of the succession planning processes but does not fully implement a pre-defined model. The major difference between the formal and semi-formal plans is that in the formal process, planning begins well before succession takes place, whereas the semi-formal method is more ad-hoc based, thus closer to replacement planning. Lastly, an informal plan is one in which no written plan exist for succession or replacement. Companies with informal plans profess to allow incumbents the full responsibility and control of choosing their own successor. Every company reports that succession plans are only defined for select key positions in the company. Most claim that the only key positions were executive leadership roles with the exception of Company C which outlined the additional importance of creating a succession plans for project management and mid-level management positions directly involved in high impact and high profile projects.

1.2.1 Identification

Identification is argued to be the most critical component in succession planning (Sharma, Chrisman, & Chua, 2003). In current talent management literature, identification and competency definition is perhaps one of the most widely researched but highly contested fields in the industry. The core focus is to address the critical question: how is a high performer identified? This is achieved by creating a list of the most important competencies and traits of employees. Many research efforts claim to identify the critical aspects of high quality talent, and many report successful results, but few agree on the same attributes. Much of the research comes down to the subjectivity of the researcher or company. A broad literature review spanning various industry studies focusing on succession planning and talent management resulted in varied conclusions (the reported numbers of this literature review are shown in Appendix B). Tables 2A, 2B, and 2C below summarizes the results of this literature review along with the top competencies determined by 7 different research efforts. The authors sorted the competencies in Table 2A by research citation, and grouped each competency in a general category; these categories are shown in Table 2B below. Lastly, each category was summed and listed by research citation shown in Table 2C.

Table 2A
Top Competencies of High Performers by Citation

Dainty, 2004	Berntal & Welkins, 2006	Hills, 2009	Goldsmith & Carter, 2009	Hölzle, 2010	Thomas & Mengel, 2008	Hor et al. 2010
Directiveness	Passion for Results	Clarity	Strategic Planning	Breadth of Experience	Intuitive	Problem Solving
Achievement Orientation	Adaptability	Business Aptitude	Emotional Intelligence	Depth	Oreintational	Flexibility
Composure	Brings out the best in people	Internal Attunement	Customer Centricity	Cooperation	Emotional Intelligence	Leading Change
Team Leadership	Authenticity	Responsibility	Ethics	Communication	Spiritual Intelligence	Cost Management

Table 2B

Key Competency Categories and Color Code

Strategic Planning & Problem Solving
Interpersonal Skills
Experience & Technical Skills
Personality Characteristics

Table 2C

Sum of Competency Categories by Citation

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Strategic Planning & Problem Solving	2	1	0	1	0	1	1
Interpersonal Skills	1	1	1	3	2	1	1
Experience & Technical Skills	0	0	1	0	1	0	1
Personality Characteristics	1	2	2	0	1	2	1

[1] Dainty, 2004

[2] Bernthal & Welkins, 2006

[3] Hills, 2009

[4] Goldsmith & Carter, 2009

[5] Hölzle, 2010

[6] Thomas & Mengel, 2008

[7] Hor et al. 2010

The results of Table 2C suggest little correlation between categories. Although people skills and personal development are the most prevalent between each author, there is no clear hierarchy of most critical competency or even competency category. These results seem to echo Hölzle’s findings which show that simply by changing the point of view or scope of a given project key competencies changed radically: 90% of surveyed companies saw management experience to be the most critical competency for a potential

leader, while in another instance, 80% of surveyed companies found social competence to be the most important attribute (Hölzle, 2010).

The interview results of the six companies discussed in this research reported a similar dilemma. Out of the six, only Company C report to maintain a written list of key competencies used in identification. One reported that instead of using a list of characteristics, the leadership team provides subjective performance scores and ratings of a candidate's future potential. The remaining four companies all report that either incumbents or executive leaders define and identify their own competencies based off of past experience and knowledge of the vacant position. Each of the six express frustrations in the challenge of finding high performing successors, but none purport an extensive identification plan directly connected to succession planning. The overall consensus is that incumbents would either be familiar enough with potential successors to make a decision, or the company would instead focus on external replacement planning using a new hire.

1.2.2 Development

In an extensive succession plan, measures are taken by the company to instate a structure to further develop key talent. The development process focuses on further advancing the competencies previously identified as critical to the potential vacancy to be filled. “[G]ood succession planning does not just look at who is next in the line for a slot, but also targets people early in their careers and determines what kind of training and experiences they need in order to become effective leaders” (Hor, F. C. et al. 2010), which thus creates the foundation for good development.

Most research agrees that the success of development should be measured by overall organizational performance (Hor, F. C. et al. 2010). The current argument arises in whether or not performance is positively correlated with the development methodology. For example, Collins and Holton claim no empirical evidence linking development with organizational performance, while Hor et al strongly argue for the contrary (Collins and Holton, 2004) (Hor, F. C. et al. 2010).

The interview results show that, formally or informally acknowledged, companies place the greatest concern and focus on the development of their employees. Every company voiced that a major challenge is the lack of available time and resources needed to train up-and-coming employees. The companies struggle to understand the ideal training methodology and whether or not to develop using in-house resources or to outsource. Although Company F, for example, does not have a formal succession plan, they, none the less, are partnered with a local university to help with leadership development. The reported development methodologies for each company are shown in Table 3 below. Along with development methods, each company also has a tracking procedure to measure progress and competencies for employees. Of the six, only one company reports the use of a centralized database and tracking system, while three rely on managers to track individual employees, and one uses over 30 databases across various divisions and company locations.

Table 3

Company Development Methodology

Company	Development Method	Tracking Method
A	Mentorship	Manager Tracked
B	Professional Development Model	Centralized Database
C	Mentorship	30+ Databases
D	None	Manager Tracked
E	Professional Development Model	Not Reported
F	External Training	Manager Tracked

1.2.3 Transition

In general the transition phase can vary in scope depending on the definition. In the case of this research, it is assumed that transition focuses on the time period just before and several years after a succession. The transition phase serves as the time frame it takes for the new successor to reach full productivity in their new position. The goal of transition is to minimize the instability of a company after succession and maintain overall productivity. The majority of new managers report that the transition phase is a result of trying to acclimate to “corporate culture, management and communication styles, and the detail of recent events” (Kransdorff, 1996). According to recent research by Perrenoud

and Sullivan, on average, the transition phase, as defined by the author, lasts about 4 years. (Perrenoud and Sullivan, 2013).

The author was unable to identify current research and implemented methodology surrounding the time after a succession specifically in the construction industry. The author was also unable to identify current literature that provides conclusive best practices or methodologies leading to a successful transition. Additionally, the companies interviewed were unable to provide any data or commentary on transition aside from speculation. All of the companies state that the transition phase is how a successful succession is ultimately determined, but none had accessible metrics that suggested an effective transition.

Chapter 3

CONCLUSION

If the population trends remain consistent in the coming years, the construction industry will be faced with the unique challenge of addressing a large change in the current labor force. Simple observation would suggest that because the outflow of retiring talent is significantly larger than the inflow of rising talent, the industry will need to learn to use this smaller talent pool more effectively. It would seem that in order to adequately respond to the shifting trends in the talent pool, the industry will need to develop more efficient talent management techniques; more specifically, succession planning techniques to mitigate the impact of future vacancies.

Through the literature review and the company interviews addressed in this research, it is suggested that the available succession planning methodologies are empirically deficient and under-defined. Of the six interviewed companies, it is shown that there are no observable trends suggesting any significant succession planning similarities. Within this small focus group of companies of ranging sizes, all express deep concern in their inability and misunderstanding of methods to further develop talent in preparation to fill vacancies. While some companies rely on mentorship, others rely on industry models or external training courses. It could be suggested that the lack of consensus could be due to different company demographics, but more research would be needed to verify this claim. Additionally, among the interviewees, the author found that the scope of succession planning is blurred. The majority of the organizations use the term succession planning exclusively when reacting to a leadership vacancy, while literature suggests that effectively succession planning must begin in the early stages of competency identification and development. This herein suggests a lack of continuity between talent management processes ultimately leading to succession.

In conclusion, this research demonstrates a discontinuity surrounding succession planning perspectives. The field is populated with opinions, biases, and preferences based on company tradition. Because of the lack of quantifiable data and measurements, at this time it is not possible to reach a conclusive analysis on current succession planning effectiveness in addressing the shift in the population. Furthermore, the lack of data leads this author to the conclusion that more research is needed which should focus on verifiable performance metrics of industry processes surrounding the identification, development, and transition of talent ultimately leading to succession.

REFERENCES

- Ahadzie, D. K., Proverbs, D. G., & Olomolaiye, P. (2008). Towards developing competency-based measures for construction project managers: Should contextual behaviours be distinguished from task behaviours? *International Journal of Project Management*, 26(6), 631–645. <http://doi.org/10.1016/j.ijproman.2007.09.011>
- Ahmadi, A. A., Ahmadi, F., & Abbaspalangi, J. (2012). Talent Management and Succession Planning. *Interdisciplinary Journal of Contemporary Research In Business*, 4(1), 213–224.
- Bernthal, P., & Wellins, R. (2006). Trends in Leader Development and Succession. *HR. Human Resource Planning*, 29(2), 31–40.
- Capuano, T. A., & MacKenzie, R. (2013). Achieving succession planning and implementation: One healthcare network's story. *Healthcare Management Forum*, 26(3), 136–144. <http://doi.org/10.1016/j.hcmf.2013.06.003>
- Cheloha, R., & Swain, J. (2005). Talent management system key to effective succession planning. *Canadian HR Reporter*, 18(17), 5,8.
- Collings, D. G., McDonnell, A., & Scullion, H. (2009). Global talent management : the law of the few. *The Poznań University of Economics Review*, 9(nr 2), 5–18.
- Collins, D. B., & Holton, E. F. (2004). The effectiveness of managerial leadership development programs: A meta-analysis of studies from 1982 to 2001. *Human Resource Development Quarterly*, 15(2), 217–248. <http://doi.org/10.1002/hrdq.1099>
- Dainty, A. R. J., Bagilhole, B. M., & Neale, R. H. (2000). The compatibility of construction companies' human resource development policies with employee career expectations. *Engineering Construction and Architectural Management*, 7(2), 169–178. <http://doi.org/10.1046/j.1365-232x.2000.00150.x>
- Dainty, A. R. J., Cheng, M., & Moore, D. R. (2004). A competency-based performance model for construction project managers. *Construction Management and Economics*, 22(8), 877–886. <http://doi.org/10.1080/0144619042000202726>
- Dries, N. (2013). The psychology of talent management: A review and research agenda. *Human Resource Management Review*, 23(4), 272–285. <http://doi.org/10.1016/j.hrmmr.2013.05.001>

- Edum-Fotwe, F. T., & McCaffer, R. (2000). Developing project management competency: perspectives from the construction industry. *International Journal of Project Management*, 18(2), 111–124. [http://doi.org/10.1016/S0263-7863\(98\)90075-8](http://doi.org/10.1016/S0263-7863(98)90075-8)
- Giambatista, R. C., Rowe, W. G., & Riaz, S. (2005). Nothing succeeds like succession: A critical review of leader succession literature since 1994. *The Leadership Quarterly*, 16(6), 963–991. <http://doi.org/10.1016/j.leaqua.2005.09.005>
- Groves, K. S. (2007). Integrating leadership development and succession planning best practices. *Journal of Management Development*, 26(3), 239–260. <http://doi.org/10.1108/02621710710732146>
- Gunnoe, J., Sullivan, K., Wiesel, A., Kashiwagi, D. (2015). *Profiling Succession Planning Methods in the Construction Industry*. 51st ASC Annual International Conference Proceedings. College Station, TX Retried from: <http://ascpro.ascweb.org/chair/paper/CPGT364002015.pdf>
- Hills, A. (2009). Succession planning – or smart talent management? *Industrial and Commercial Training*, 41(1), 3–8. <http://doi.org/10.1108/00197850910927697>
- Hölzle, K. (2010). Designing and implementing a career path for project managers. *International Journal of Project Management*, 28(8), 779–786. <http://doi.org/10.1016/j.ijproman.2010.05.004>
- Hor, F. C., Huang, L.-C., Shih, H.-S., Lee, Y.-H., & Stanley Lee, E. (2010). Establishing talent management for company's succession planning through analytic network process: Application to an MNC semiconductor company in Taiwan. *Computers & Mathematics with Applications*, 60(3), 528–540. <http://doi.org/10.1016/j.camwa.2010.05.001>
- Huang, T. (2001). Succession management systems and human resource outcomes. *International Journal of Manpower*, 22(8), 736–747. <http://doi.org/10.1108/EUM0000000006508>
- Kesler, G. C. (2002). Why the leadership bench never gets deeper: Ten insights about executive talent development. *HR. Human Resource Planning*, 25(1), 32–44.
- Kransdorff, A. (1996). Succession planning in a fast-changing world. *Management Decision*, 34(2), 30–34. <http://doi.org/10.1108/00251749610110300>
- Leibman, M., Bruer, R. A., & Maki, B. R. (1996). Succession management: The next generation of succession planning. *HR. Human Resource Planning*, 19(3), 16.

- Lin, W.-T., & Liu, Y. (2012). Successor characteristics, change in the degree of firm internationalization, and firm performance: The moderating role of environmental uncertainty. *Journal of Management and Organization*, 18(1), 16–35.
- Madter, N., Bower, D. A., & Aritua, B. (2012). Projects and personalities: A framework for individualising project management career development in the construction industry. *International Journal of Project Management*, 30(3), 273–281. <http://doi.org/10.1016/j.ijproman.2011.09.001>
- Metz, E. J. (1998). Designing succession systems for new competitive realities. *HR. Human Resource Planning*, 21(3), 31–37.
- Oddou, G. R., & Mendenhall, M. E. (1991). Succession planning for the 21st century: How well are we grooming our future business leaders? *Business Horizons*, 34(1), 26–34. [http://doi.org/10.1016/0007-6813\(91\)90078-A](http://doi.org/10.1016/0007-6813(91)90078-A)
- Raidén, A. B., & Dainty, A. R. J. (2006). Human resource development in construction organisations. *The Learning Organization*, 13(1), 63–79. <http://doi.org/10.1108/09696470610639130>
- Roddy, N. (2004). Leadership Capacity Building Model: Developing Tomorrow's Leadership in Science and Technology: An Example in Succession Planning and Management. *Public Personnel Management*, 33(4), 487–496.
- Rothwell, W. J. (2002). *The Workplace Learner: How to Align Training Initiatives with Individual Learning Competencies*. American Management Association, 1601 Broadway New York, NY 10019 (\$59.95). Tel: 800-714-6395; Fax: 518-891-2372; E-mail: pubs_cust_serv@amanet.org; Web site: <http://www.amacombooks.org/books/index.htm>. Retrieved from <http://eric.ed.gov/?id=ED473638>
- Rothwell, W. J. (2011). Replacement planning: a starting point for succession planning and talent management. *International Journal of Training and Development*, 15(1), 87–99. <http://doi.org/10.1111/j.1468-2419.2010.00370.x>
- Shamsuddin, A. (2012). Leadership Management as an Integral Part of Succession Planning in HEIs: A Malaysian Perspective. *International Journal of Business and Social Science*, 3(3), 8.
- Sharma, P., Chrisman, J. J., & Chua, J. H. (2003). Succession Planning as Planned Behavior: Some Empirical Results. *Family Business Review*, 16(1), 1–15. <http://doi.org/10.1111/j.1741-6248.2003.00001.x>

- Skipper, C., & Bell, L. (2008). Leadership Development and Succession Planning. *Leadership and Management in Engineering*, 8(2), 77–84. [http://doi.org/10.1061/\(ASCE\)1532-6748\(2008\)8:2\(77\)](http://doi.org/10.1061/(ASCE)1532-6748(2008)8:2(77))
- Stahl, G. K., Björkman, I., Farndale, E., Morris, S. S., Paauwe, J., & Stiles, P. (2012). Six Principles of Effective Global Talent Management. *MIT Sloan Management Review*, 53(2), 25–32.
- Stringer, R. A., & Cheloha, R. S. (2003). The Power of a Development Plan. *HR. Human Resource Planning*, 26(4), 10–17.
- Thomas, J., & Mengel, T. (2008). Preparing project managers to deal with complexity – Advanced project management education. *International Journal of Project Management*, 26(3), 304–315. <http://doi.org/10.1016/j.ijproman.2008.01.001>
- Tracey, W. R. (2004). *The human resources glossary: the complete desk reference for HR executives, managers and practitioners* (3rd ed). Boca Raton: St. Lucie Press.
- Trice, A., Bertelli, K., & Ward, D. (2011). Workforce Shaping Models and Metrics in the Public Sector. *People and Strategy*, 34(3), 18–27.

APPENDIX A

DEFINITION OF TERMS

Throughout this research various specific terms relating to human resource management are used. For the sake of clarity, the author has included definitions for several key terms below. These definitions are all sourced from the Society of Human Resources Management's Glossary of Human Resources Terms which can be found at the following link: <http://www.shrm.org/templatestools/glossaries/documents/glossary%20of%20human%20resources%20terms.pdf>

Succession planning: The process of identifying long-range needs and cultivating a supply of internal talent to meet those future needs. Used to anticipate the future needs of the organization and assist in finding, assessing and developing the human capital necessary to the strategy of the organization.

Talent Management: Broadly defined as the implementation of an integrated strategies or systems designed to increase workplace productivity by developing improved processes for attracting, developing, retaining and utilizing people with the required skills and aptitude to meet current and future business needs

Leadership development: Formal and informal training and professional development programs designed for all management and executive-level employees to assist them in developing the leadership skills and styles required to deal with a variety of situations.

Management development: Training and developmental programs designed to provide new managers and existing managers with the resources needed to become more effective in their roles.

APPENDIX B

LITERATURE REVIEW SUMMARY

The following section is included to summarize the effort taken by the author to review the current relevant literature. The author reviewed 40 papers (six of which are not considered in the table below), and found 14 papers with relevant and useful metrics. The results of the research are summarized in the table below.

Table 4
Summary of Literature Review and Analysis

Search Term	Search Results			Captured Sources	
	Google Scholar	Science Direct	ProQuest	Relevant Papers	Oldest pub.
Management Development	4,530,000	1,283,364	6,351,542	14	1991
Career Development	2,890,000	153,674	2,166,788	16	1991
Leadership Development	2,670,000	117,812	2,016,249	19	1991
Replacement Planning	1,140,000	78,421	416,947	5	2010
Succession Management	1,010,000	48,857	253,235	1	1996
Continuity Planning	971,000	50,550	347,330	1	2006
Talent Management	809,000	28,881	765,942	14	1998
Workforce Planning	724,000	25,902	346,814	1	2011
Succession Planning	611,000	21,497	203,667	18	1996
Developing Talent	584,000	25,310	471,011	16	1991
Talent Engagement	307,000	5,072	238,951	-	-
Talent Acquisition	193,000	11,199	305,630	-	-
Talent Retention	80,000	6,742	129,341	-	-

APPENDIX C

INTERVIEW QUESTIONS

As part of this research, the author interviewed six companies regarding their succession planning methodology and best practices. The purpose of these interviews was to profile each company to understand exactly what they do in regards to succession planning. In order to achieve this, the author asked each company representative the following questions:

1. What is the leadership structure for your company (eg COs, VPs, Directors, etc...)?
2. What positions does your company create a succession plan for?
3. Who is currently in charge of managing your company's succession planning?
4. How are potential successors identified?
5. How is talent tracked (excel, hard data, others...)?
6. What are your key strategies?
7. What metrics are tracked throughout implementation?
8. What determines a successful succession plan?
9. How does your current company's best practice differ from others that you've seen/worked with?
10. Do you have a model or a methodology that you reference for SP?
11. What are the biggest challenges faced by your company in regards to SP?
12. Do you currently have any SP for PMs?
13. How effective is your company at replacing PMs?
14. Is your company facing any challenges hiring PMs?

APPENDIX D

SUMMARY AND COMPARISON OF INTERVIEW RESULTS

At the end of the interview process, the author compared and contrasted company responses to the interview questions. Through these interviews, the author was able to identify common challenges and process structure along with key factors that made each company unique. The critical findings are reported in the body of this document.

Key Challenges

- All companies lack a formalized and moveable process applicable to all levels of employment. The current methodologies are only implemented at the executive level of the companies.
- Most companies identified that the greatest challenge is providing time and resources to cultivate better mentorship for employee development.
- All companies expressed difficulties in accessing the current talent pool. Purportedly, talent is either stretched too thin, or there isn't enough rising talent.

Process Commonalities

- Succession planning is seen as only one component in the talent management structure. Companies do not strictly designate between the two.
- No companies have a process in place for project management succession specifically.
- Many companies reported to be in the process of revamping/overhauling their succession planning and talent management practices.

Unique Factors

- Some companies prefer talent reviews to be conducted by the highest executive team while others use supervisors for talent reviews.
- Every company utilizes its own unique rating/coding system for talent identification.
- Some companies practices full transparency with performance ratings while others do not share performance ratings at all.
- Some companies tie performance ratings to compensation.

APPENDIX E

SUCCESSION PLANNING INDUSTRY STRUCTURE

The following diagram was developed by the author and used to summarize the overview process of succession planning. The structure of this diagram is based off of a literature analysis and coordinated with current company processes. In December of 2014, this diagram was adjusted and approved by the six companies that were interviewed.

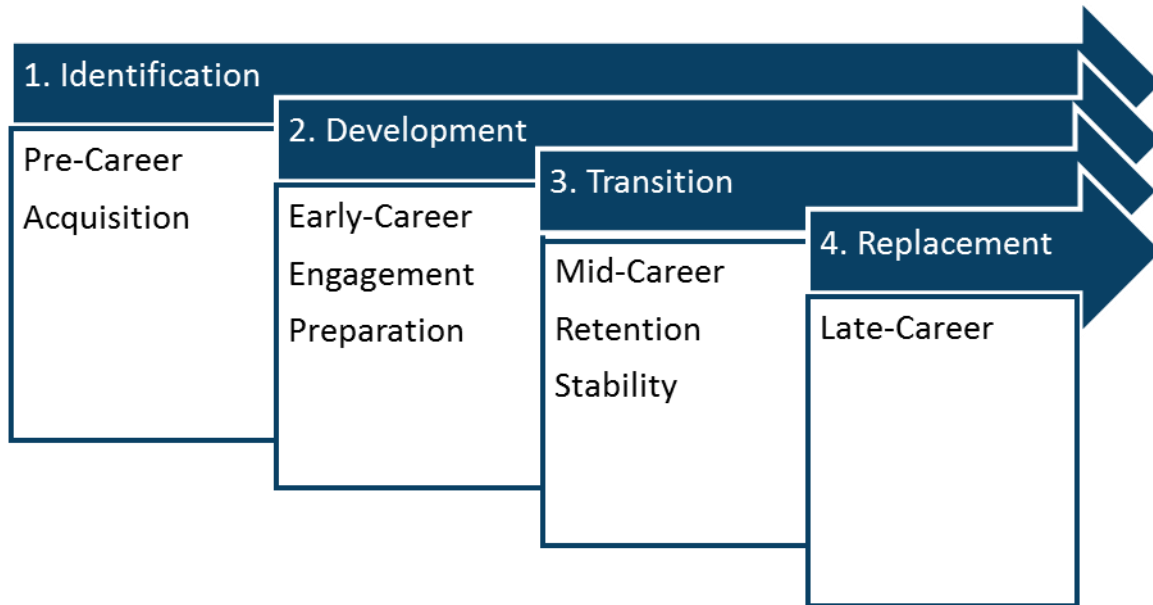


Figure 3. Succession Planning Process Overview

The purpose of this diagram is to show the parallel processes involved in succession planning and the associated human resources terms. The overall process has been divided into four major components:

1. Identification
2. Development
3. Transition
4. Replacement.

These classifications are often investigated individually in current literature, but they all correspond to the succession planning process and to talent management. In most cases these steps are performed coincidentally until the succession is complete. The author has designated the *average* time in one's career in which the process would take place (pre, early, mid, or late). At the given stage of an employee's career, human resource specialists would use key buzz words to define the process. The most common buzz words are listed in the diagram under their corresponding process.

APPENDIX F

COMPANY DEMOGRAPHICS DATA ANALYSIS

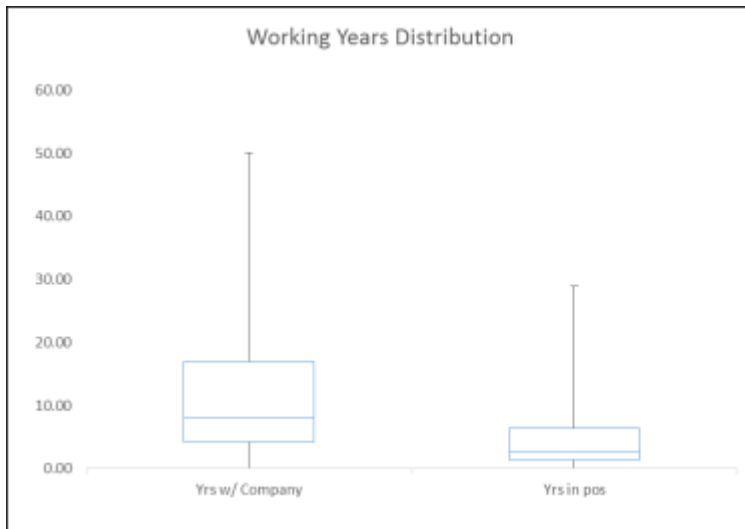
In an effort to further validate the talent gap faced by the general US population, the author conducted a demographics survey of seven companies. The purpose of this survey was to determine whether or not the construction industry is also facing challenges with the population gap. Companies were asked to report on employee job titles, ages, and years of experience. Over 2,500 data points were reported and analyzed. The number of data points are shown in the table below.

Table 5

Summary of Reported Company Employee Data Points

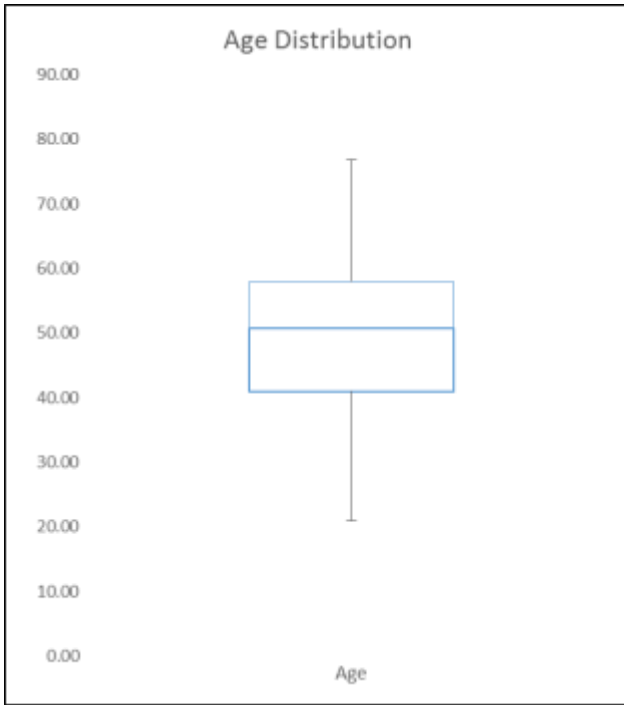
Company	Entries	Job Titles	Years in Position	Years w/ Company	Years Prior to Company	Age/ DOB
A	333	333	333	333	332	333
B	61	61				
C	170	170		170		170
D	320	245		318		
E	24	24	24	24		24
F	1714	1714	1704	1658	1713	
G	55	55		55		55

The analysis of the reported data is shown in the two graphs below. This analysis shows that the construction industry is being heavily impacted by the current shift in US population demographics. The critical component to note is the average age of project management professionals (shown in the second graph). At completion of this paper the author is currently working on further analysis of this data for additional publications.



	Yrs w/ Company	Yrs in pos
Mean	11.65	4.32
Median	8.00	2.60
Max	50.00	28.90
Min	0.08	0.10
Q1	4.23	1.43
Q3	17.00	6.40
n	2538.00	2061.00

Figure 4. Box Plot of Reported Employee Years with a Company versus Years in a Position.



	Age
Mean	49.79
Median	50.74
Max	76.85
Min	21.00
Q1	41.00
Q3	58.00
n	581.00

Age Range	
< 30	15
30 - 40	112
40 - 50	152
50 - 60	179
60+	122

Figure 5. Box Plot of Reported Employee Age in the Project Management Career Path