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DETERMINING THE VALUE OF A MASTER'S DEGREE IN
CONSTRUCTION MANAGEMENT IN SOUTHERN IDAHO

by

Benjamin K. Davis

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

School of Technology

Brigham Young University

August 2006

BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Benjamin K. Davis

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

Date

Kevin L. Burr, Chair

Date

Thomas Erekson, Member

Date

Jeffery L. Campbell, Member

BRIGHAM YOUNG UNIVERSITY

FINAL READING APPROVAL

As chair of the candidate's graduate committee, I have read the thesis of Benjamin K. Davis in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials include figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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ABSTRACT

DETERMINING THE VALUE OF A MASTER'S DEGREE IN CONSTRUCTION MANAGEMENT IN SOUTHERN IDAHO

Benjamin K. Davis

School of Technology

Master of Science

The purpose of this study is to determine the value of a master's degree in construction management in southern Idaho. A telephone and Internet survey was employed to determine the value that members of the construction industry in southern Idaho place on construction management (CM) degrees, both graduate and undergraduate. The survey included 27 self-described general contractors who are members of The Associated General Contractors of America (AGC) in regions 3 and 4 in the state of Idaho. Regions three and four include Twin Falls, Idaho Falls, Pocatello, Ketchum, Burley and surrounding communities. Following the compilation of surveys, it was found that the group of participants 1) knew there was a bachelor's degree in CM; however, some didn't realize there was a master's degree in CM; 2) felt that education is sometimes over rated; 3) perceived no difference in hiring an undergraduate v. a graduate in terms of monetary value. There was a perceived value in a master's degree itself.

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CHAPTER 1

INTRODUCTION

Background of the Problem

In 2005 United States construction spending topped 1.1 trillion dollars (US DOC, 2005) or 8.7% of the gross domestic product (GDP) (US BEA, 2005). Comparatively construction spending in 2000 was \$847.3 billion. This represents a 30% increase in construction spending in only six years. The construction industry is growing rapidly. With this growth the need for competent management at construction companies is also increasing. Owners and executives today are more than former laborers who used to swing a hammer most of their lives and ended up owning their own companies. Management candidates today are increasingly being chosen from the ranks of college graduates. (Dorsey, 1992; Burr, 2003).

Not only is the demand for qualified workers increasing, studies now indicate there may be a shortage of management with construction management (CM) degrees in the near future (Bilbo, Feters, et al, 2000) and in some instances there already is (Caldwell, 2005).” In the 2000 article, Bilbo, et al, published an article reporting the current supply and demand of CM college graduates. They surveyed the 54 universities who had accredited CM programs by either the American Council for Construction Education (ACCE) or the Accrediting Board for Engineering and Technology (ABET)

and published the number of graduates from each program and called on those companies which recruited heavily to their programs. These companies were asked to provide actual numbers of CM students hired and project future hires through 2000. Their results are illustrated below.

Demand for Construction Graduates 1995-2000

Year	Calendar Year	Demand for Construction Graduates
0	1995	2303
1	1996	2708
2	1997	3396
<hr style="border-top: 1px dashed black;"/>		
3	1998	4525
4	1999	4800
5	2000	4972

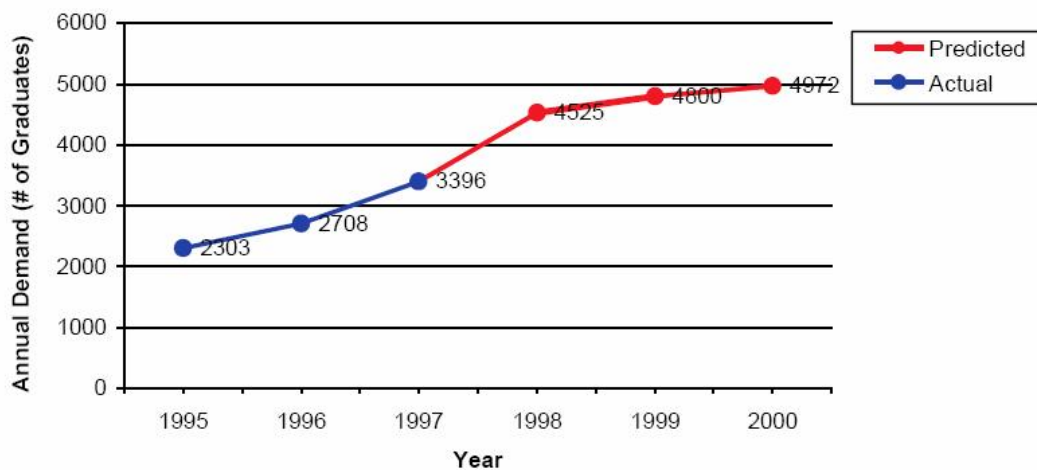


Figure 1.1: Demand for Construction Graduates 1995-2000

These numbers were then used to forecast the supply and demand for CM graduates through 2005. Their findings prove a need for more CM programs throughout the country and more students are needed to fill the current demand. The linear regression data (illustrated below) showed that by 2005 between 6700 and 9700 CM college graduates would be needed just to fill the then-current demand of students. In 1997 the

country was only producing 2,350 CM college graduates out of the 54 accredited colleges and universities.

Predictions for years 2001-2005

Year	Predicted	Prediction Intervals		Confidence Intervals	
		Lower 95%	Upper 95%	Lower 95%	Upper 95%
2001	5859	4747	6971	5102	6616
2002	6452	5212	7692	5516	7388
2003	7045	5660	8429	5925	8165
2004	7638	6098	9177	6331	8945
2005	8230	6528	9933	6734	9726

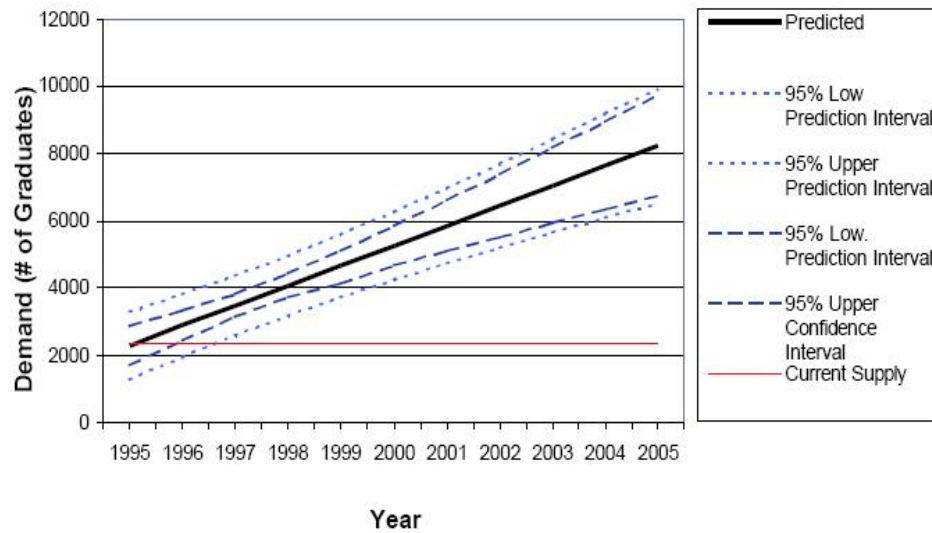


Figure 1.2: Predictions for years 2001-2005

Even during rough economic times companies have recruited college graduates (Burt, 2003). Other estimates foresee between the years 2002 and 2008, 550,000 jobs will be created in the construction industry; 240,000 will be needed each year to replace those who are retiring or leaving the business (Daily Herald, 2002). The largest residential builder in the country, DR Horton, which built 44,005 homes in 2004 (Builder100, 2004), declared in 2005 that it plans on selling 100,000 new homes per year by 2010 (Hagerty &

Dunham, 2005). With numbers like that the need for additional management personnel is evident. Pulte, ranked number two in the Builder 100 list in 2004 (Builder 100, 2004) had 800 college graduates in 2004 alone (“PULTE HOMES: Recruiting & Mentoring,” 2005). Utah Department of Workforce Services (UDWS) “has forecast the number of construction jobs in the state will grow 3.4 percent per year between 2002 and 2012 -- creating an additional 23,000 jobs [in Utah] (Winters, 2005).” Construction management graduates provide competent leadership of varying expertise and adroit management experience that is essential to generating profits year after year (Strischek, 1998).

Admittedly, not all skills can be learned in an institution of higher learning (Coplin, 2005). However, in many construction companies, a degree in construction management (CM) is a requisite to any management capacity. According to the 2004-2005 U.S. Department of Labor Occupational Outlook Handbook, “employers—particularly large construction firms—continue to prefer individuals who combine industry work experience with a bachelor’s degree in construction management (DOL 2005).” Recruiting firms have also seen a need for construction managers, especially in the senior executive area (Tulacz, 2005). The management skills necessary to run highly sophisticated construction companies are progressively being found in master’s degree graduates (Berryman & Nobe, 1999). In fact, master’s degrees are specifically designed for middle and upper-level management positions (Jones, 1999) (Gourana, 2004).

CM graduate programs are on the rise as are students with master’s degrees in construction management. The only statistical information of graduating master’s degree students in the literature found that 171 students received a master’s degree in 1999.

(Bilbo, et al. 2000). That year there were 2,350 CM graduates who received a bachelors or master's degree from 54 accredited (by either ACCE or ABET) CM programs. This represents 7% of the total graduating class. Master's degree graduates, especially those with experience, become managers in construction (DOL, 2005) (Smith, 2004). Although running successful companies may require higher levels of education, including a master's degree, (Gambatese & Opfer, 1999) the construction industry currently tends to see no value-added in a master's degree in construction management (Williamson, 1999). Williamson's study then begs the question, "Are advanced degrees worth the time and effort? (Kimbrough-Robinson, 2005)." Years ago the answer was yes; at least as far as a construction master's degree was concerned (Badger & Segner, 1989). Still, many question whether a master's degree is a valuable commodity (Uhlik & Chini, 1998), (Lacy & Crosby, 2005). So what is the value of a master's degree in construction management in the construction industry?

Statement of the Problem

The problem is that there seemingly is no value added for a master's degree in construction management as seen in the eyes of the construction industry. There is no difference in perception between a Master's degree and a Bachelor's degree in construction management in the construction industry.

Research Questions

The research will attempt to address and answer the following questions, in an online/telephone survey instrument.

1. Is the construction industry aware of a construction management master's degree?
2. Does the construction industry place value on a degree in construction management?
3. What is the value of a master's degree in the construction industry?

Significance of the Study

The purpose of this research is to determine the value of a master's degree in construction management as perceived by self-described general contractors in regions 3 and 4 of AGC in Idaho and by five AGC-Utah contractors who also participated in the survey. Universities have more students graduating with master's degrees in construction, engineering and management each year. The trend is likely to continue. If there is an elevated value placed on master's degrees in the industry, colleges and universities may be able to use the data to focus their curriculum. In addition, industry leaders may focus their attention on qualified master's degree candidates, and the master's graduate will be highly sought out. If there is no additional value placed on master's degrees many graduates may be "spinning their wheels" trying to get ahead in the industry.

Definition of Terms

1. ABET – Accreditation Board for Engineering and Technology.

“**ABET, Inc.**, the recognized accreditor for college and university programs in applied science, computing, engineering, and technology, is a federation of 28 professional and technical societies representing these fields. Among the most respected accreditation organizations in the U.S., ABET has provided leadership and quality assurance in higher education for over 70 years (ABET, 2006).”

2. ACCE – American Council for Construction Education

“The mission of the American Council for Construction Education (ACCE) is to be a leading global advocate of quality construction education programs and to promote, support, and accredit quality construction education programs. Through promotion and continued improvement of postsecondary construction education, ACCE accredits construction education programs in colleges and universities that request its evaluation and meet its standards and criteria. ACCE is recognized by the Council for Higher Education Accreditation (CHEA) as the accrediting agency for four year baccalaureate degree programs in construction, construction science, construction management, and construction technology, and as the accrediting agency for two year associate-degree programs of a like nature (ACCE, 2006).”

3. AGC - “The Associated General Contractors of Utah (AGC-Utah) [or Idaho (AGC-Idaho) are both] independent chapter(s) of the AGC of America. It is an organization of qualified construction contractors and industry related companies dedicated to skill, integrity, and responsibility. The association provides a full range of services satisfying the needs and concerns of its members, thereby improving the quality of construction and protection of the public interest (AGC-Utah, 2005).”

4. ASC – Associated Schools of Construction.

“The professional association for the development and advancement of construction education, where the sharing of ideas and knowledge inspires, guides and promotes excellence in curricula, teaching, research and service.

“The ASCWeb is headquartered in Provo, Utah, within the Construction Management Program at Brigham Young University. The Associated Schools of Construction's corporate office is within Manufacturing Technology and Construction Management at Colorado State University. The ASC is the international association representing the interests of both academic and industry professionals interested in institutional construction education. The ASCWeb site is an information resource which collects, analyzes, evaluates, packages and disseminates information to facilitate accurate communication and decision-making within academic, industry and government settings.

“The membership of the ASC, like the field of construction management, is richly interdisciplinary, drawing membership from such disciplines as architecture, engineering, management, technology, to name only a few. The Association offers a variety of programs and services designed to help its members serve their customers more effectively and succeed in an increasingly challenging environment of information management and technology. The Association is organized into seven regions in the United States (Northeast, Southeast, Great Lakes, North Central, South Central, Rocky Mountain, and Far West) and two international regions, one for international institutions (Canada; Europe; Asia and the Pacific; and Caribbean/Central/South America) and one for industry professionals. Regions within the U.S. hold individual conferences and combine in the fall for a large international ASC Annual Convention.

“The ASC is dedicated to the professional growth and success of its membership, and is committed to fostering excellence in construction communication, scholarship, research, education, and practice. (ASC, 2006)”

5. Builder 100. “The Builder 100 is BUILDER magazine's annual listing of the 100 largest home building companies in the country, based on units closed. Each May, we publish the Builder 100 list, along with the next 100 largest companies and builders in each major market (Hanley-Wood, 2006).”
6. CM - Construction Management. (CM) A university program “designed to give men and women abilities in construction management by providing a broad

background in construction technology, business, architecture, and engineering, with specific emphasis on management within the construction industry. (BYU, 2005)”

7. Construction Management/Construction Manager (CM). Defined in the industry “denote[s] a management firm, or an individual employed by such a firm, involved in managerial oversight of a construction project. (DOL, 2005)
8. (GMAC®) Graduate Management Admissions Council
9. Utah Department of Workforce Services (UDWS). Provides employment and employment service to its customers to improve their economic situations.

Limitations

This study was limited to members of regions 3 and 4 in the Idaho chapter of Associated General Contractors (AGC) who responded to a telephone survey. This sample may not be generalized across the industry, but the purpose of this thesis was not to gather extended data from the industry; it is intended to gather information from companies in certain regions of Idaho and Utah to determine a general value of a master’s degree in construction. Therefore, “construction industry” narrowly refers to self-described general contractors in regions 3 & 4 of southern Idaho, and not any affiliates, sponsors or educators.

Delimitations

This research is not intended to describe all possible factors that determine the worth or value of a Master’s degree. For example, such things as project-based v. thesis-

based Master's programs, income differences in commercial, industrial and residential companies, age and experience of graduates are but a few of the possible factors that could also be used to determine value.

Summary

This research is intended to find out the value of a master's degree in construction management. Field workers and upper-level management typically require differing skill sets. Running subcontractors on a job site and wielding a multi-million or billion dollar company are very different job descriptions. Both positions are needed in order to successfully run a construction company. Research indicates a real need for college graduates in construction management and there is a growing need of top management in the construction industry. Through the means of a modified GMAC® survey, this study will attempt to find out if the construction industry holds the master's graduate as a value-added degree.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The construction industry has been booming the last few years. As companies have expanded, they have hired new recruits to fill the void. The review of literature found a high demand in the construction industry both in commercial and residential construction for college graduates. While not a focus of the study, some of the literature discussed a degree in construction management may be preferred to other college degrees. Companies are hiring college graduates from more than one discipline and placing them in more areas than superintendents or fieldwork. Although college recruiting in general seems to play a major role for construction companies to find new talent, the universities themselves seem to be the only ones praising the accolades of their master's degree students.

Background

Running any successful business takes an increasingly sophisticated skill set. With construction spending topping \$1.1 trillion in 2005 (US DOC, 2005), or 8.7% of GDP (US BEA, 2005). By comparison, in 2000, construction spending was \$847.3 billion. That is a 30% increase in just six years.

“The U.S. Census Bureau of the Department of Commerce announced today that construction spending during November 2005 was estimated at a seasonally adjusted annual rate of \$1,146.4 billion, 0.2 percent ($\pm 1.4\%$) above the revised October estimate of \$1,114.2 billion. The November figure is 7.8 percent ($\pm 2.4\%$) above the November 2004 estimate of \$1,063.4 billion. During the first 11 months of this year, construction spending amounted to \$1,031.2 billion, 9 percent ($\pm 1.6\%$) above the \$946.3 billion for the same period in 2004 (US DOC, 2005).”

Below is a graph depicting the November seasonally adjusted construction spending growth over the last six years, from 2000 – 2005 (US Census, 2006).

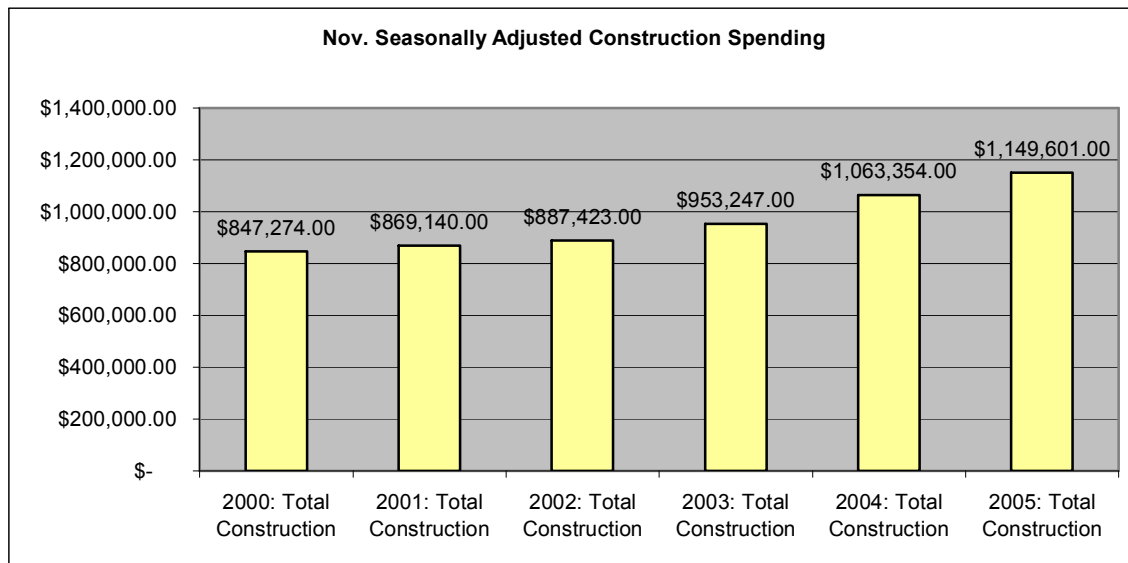


Figure 2.1: November Seasonally Adjusted Construction Spending

“Current-dollar GDP – the market value of the nation’s output of goods and services – increased 7.0 percent, or \$211.6 billion, in the third quarter [2005] to a level of \$12,589.6 billion (US BEA, 2005).” With such a large percent of the GDP used to build this country [8.7% GDP], advanced construction and business skills are essential to generating profits year after year (Strischek, 1998). Strischek, noted in an article in the *Journal of Lending & Credit Risk Management*,

“The Surety Information Office (SIO) distributes a slide presentation entitled ‘Why Contractors Fail’ to its bonding industry members. According to the SIO, there are six reasons for contractor failure.

1. Poor estimating and job cost reporting...
2. Poor project management...
3. No comprehensive business plan...
4. Poor communication with customers, vendors and employees...
5. Poor financial management...
6. Factors beyond a contractor’s control...”

As noted above a successful construction company, should have skills in:

customer service, consumer trends, employee management, market analysis, land development, estimating, cost control, research and development of new products and materials, procurement, scheduling, and accounting. Additionally, Gouranga encourages MS programs in construction management to teach, “report writing, presentation skills, group work, live project work, basic statistics, basic computing, traditional risk management methods and simulation... spreadsheets, microcomputers, programming and databases (Gourana, 2004).”

Managers/Owners today are more than former laborers who swung a hammer most of their lives and ended up in a supervisory position. Dorsey, (1992) noted years ago “fewer candidates [are] being promoted from within construction companies; instead, construction companies appeared to be relying heavily on [university] construction programs to provide recruits.” More recently, Burr (2003) has observed,

“The management of the construction industry has undergone significant changes in the past few decades. In the past, management personnel were generally promoted from within the ranks. This approach changed as university construction education programs have been developed to prepare construction management personnel with the skill set requisite to managing technologically sophisticated projects and companies.”

“The increasing sophistication of the construction industry is creating a need for specialized and advanced knowledge in the field of construction. This need is leading to an increased demand for employees with graduate education in construction engineering and management (Gambatese & Opfer, 1999).”

Admittedly, not all skills will be learned within the walls of a university (Coplin, 2005). Coplin points out, “Employers rank work ethic the highest [of all skill sets] because all the skills and knowledge in the world will be of no use without hard work and continuous self- improvement.” Some may have gone through “the school of hard knocks,” but there is still a desire and trend for the college man. Management candidates today are increasingly being chosen from the ranks of college graduates. In many construction companies, a degree in construction management (CM) is requisite to any management capacity. According to the 2004-2005 U.S. Department of Labor Occupational Outlook Handbook, “employers—particularly large construction firms— increasingly prefer individuals who combine industry work experience with a bachelor’s degree in construction science, construction management, or civil engineering. (DOL, 2005)”

Industry Recruiting

Most CM graduates have not had a problem finding a job following graduation. “Recent United States construction graduates have witnessed strong competition for their services during the recruitment period.” (Burt, 2003) While the demand for qualified workers is increasing, studies indicate the supply is not matching the pace. A recent survey conducted by Bilbo, Feters, et al (2000) found that,

“In most construction education programs, institutions report a 100% placement rate, with many indicating that each graduate has three or four offers to choose from.” Bilbo, et al. also predicted “given the continuation of current market growth and production levels of accredited construction programs, the results suggest a widening gap in the supply and demand of graduates for the near term.”

“At Boise State, which graduates about 30 construction management majors each year, Professor Marv Gabert says recruiters who show up in the spring hoping to hire go away empty-handed (Caldwell, 2005).”

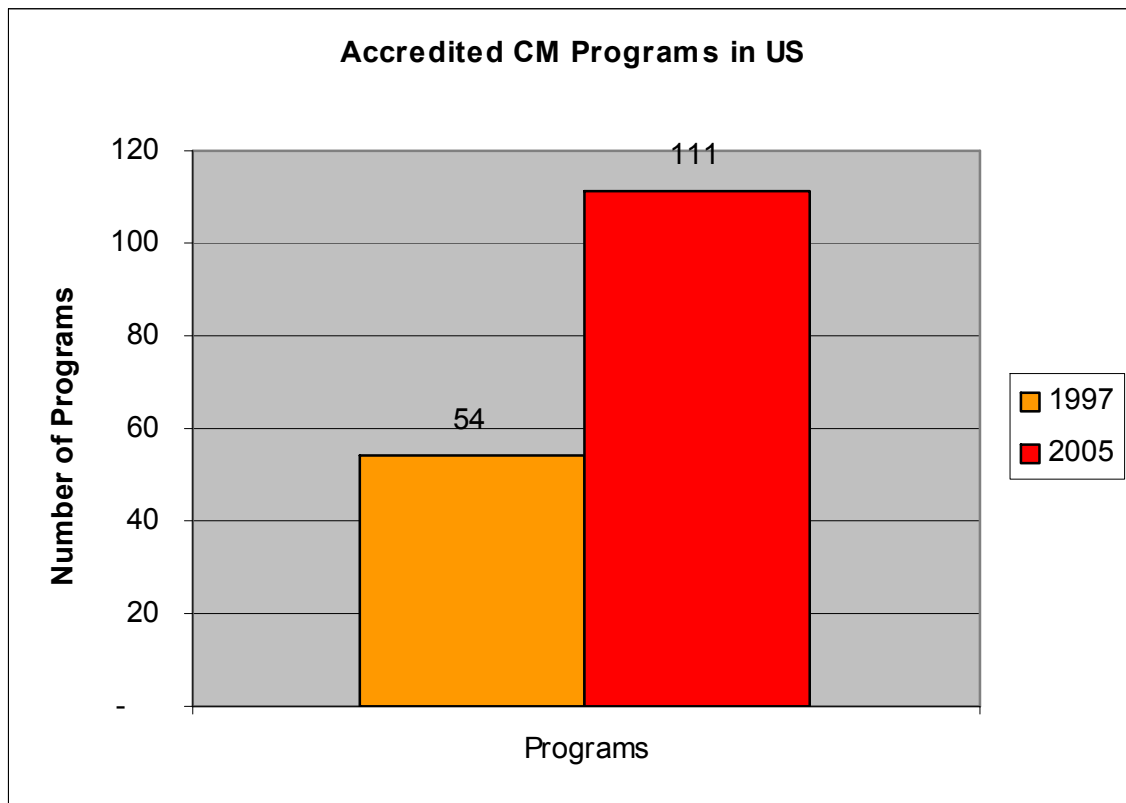


Figure 2.2: Accredited CM Programs in the United States 1997 & 2005

In 1997 the country was only producing 2,350 CM college graduates out of 54 ACCE and ABET accredited colleges and universities. According to data gathered from

the websites from construction management accredited programs (111 total programs), 3,568 graduates were awarded bachelor's degrees in 2003 (Unpublished Manuscript, 2005).

Again quoting Bilbo, Fetters, Burt & Avant (2000), "Using parameter estimates of the linear regression model, the predicted demand for years 2001-2005 was calculated." The calculations found that in 2003 the lower 95th prediction interval was 5660. The upper interval was 8,429. That equates to 42% - 63% of the predicted market supply for CM graduates.

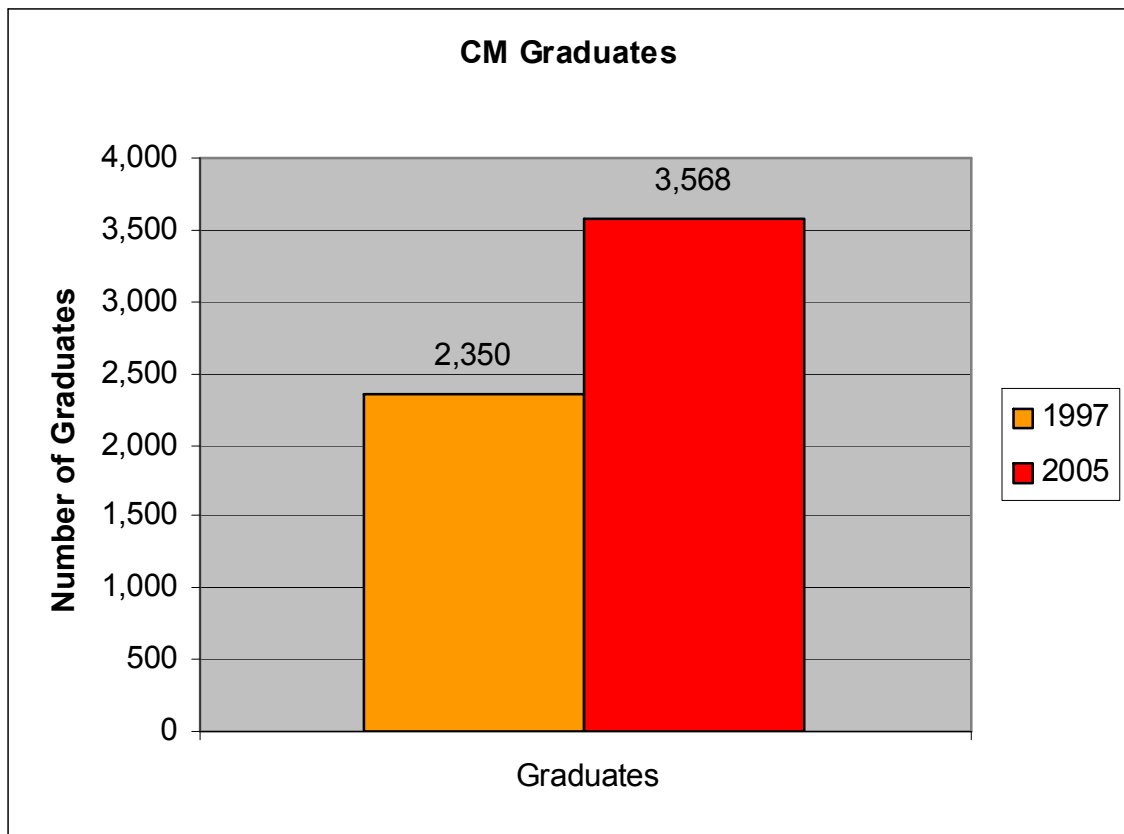


Figure 2.3: CM College Graduates 1997 & 2005

Recent literature not only affirms Bilbo's prediction, but probably exceeds it as well. Several of America's largest homebuilders plan on vamping up production in the next five years. These companies are the heaviest recruiters of college graduates.

"Horton, (D.R. Horton 44,005 units in 2004) which dubs itself 'America's Builder,' says it will sell 100,000 newly built homes in 2010, nearly double the 51,72 it sold during its latest fiscal year that ended Sept. 30. The company also projects that earnings will grow 15% to 20% annually over the next five years.

"Pulte Homes, Inc., the No. 2 builder behind Horton in terms of unit sales, forecasts that it will deliver over 10% more homes in 2006 than it will this year. KB Home, the fifth-largest builder, projects annual earnings growth of 20% to 25% for each of the next three years (Hagerty & Kemba, 2005)."

Building that many homes per year is going to put a strain on company management from the top down. Pulte, America's number two builder with 38,612 (Builder 100, 2004) units complete in 2004 hired several hundred college graduates in 2004 alone:

"In 2004, roughly 75 percent of Pulte's new hires were college recruits, which translates into about 800 people. Driving this recruitment effort is Pulte's commitment to hire the best talent in advance of need. In that the company expects to double its home production in the next five years ("PULTE HOMES: Recruiting & Mentoring," 2005).

Executive recruiters are also noticing a shortage of senior management in the construction industry.

"The increase in contractors' business has led to a heavy demand for people. 'Firms are hunting for operational people,' says Jim Vockley, executive vice president of Kimmel and Associates, an Asheville, N.C.-based executive recruiting firm. 'There aren't enough bodies to go around.' He says project managers, project executives and senior superintendents are in particular demand.

"'You'll always see demand for top project executives,' says Thomas Helbling, president of Helbling & Associates, a Wexford, Pa.-based executive search firm. But he is also seeing new demand for senior level support personnel. 'Contractors are looking for top-notch people in marketing, financial, information and human resources positions. Contractors have become more receptive to hiring senior support staff from other industries for their experience in the corporate world' (Tulacz, 2005)."

The demand for new recruits is a local issue as well. In Utah, the Department of Workforce Services (UDWS) along with educators and the local construction industry sponsored “Utah Construction Career Days” in 2005 at the state fair park.

“The three-day event funneled 5,500 students into the Utah State Fairpark to tie rebar, watch electrical installation and operate life-size versions of Tonka Trucks.

“New to Utah this year, the event was largely a response to a looming shortage of skilled workers in the construction industry. The Department of Workforce Services has forecast the number of construction jobs in the state will grow 3.4 percent per year between 2002 and 2012 -- creating an additional 23,000 jobs.

“But the construction industry already is outpacing that prediction. So far in 2005, the number of construction jobs in Utah has increased by 10.6 percent from last year.

“And some worry there are not enough young people coming into the field to fill those ranks. The industry is dominated by older workers -- the average age of a construction worker is 48 -- many of whom may retire in the next few years (Winters, 2005).”

These new local recruits may not fill the upper management jobs, but others will be needed to manage them.

University Programs

Construction Management educational programs are producing graduates at both the Bachelor’s and Master’s degree level. In 1999 “2,350 graduates... [were] produced. Of these graduates [from 54 accredited universities] 2,179 students receive a bachelor’s degree, and 171 students receive a master’s degree.” In 2003 3,568 were produced from 111 accredited universities.

University programs recognize the lack of construction management graduates, but many lack the funding to do anything about it. For example, “one of the two Pullman

[Washington State University] positions is paid for entirely with \$250,000 in industry contributions renewed every three years (Caldwell, 2005).”

In Washington state, the “universities graduate maybe half the men and women needed to estimate costs, schedule the jobs, and oversee the construction itself (Caldwell, 2005.)” Simply put, universities are currently unable to meet the demand for upper-level construction management.

Master’s degree graduates, especially those with experience, are increasingly being recognized for their management expertise. In 2005 the Occupational Outlook Handbook recognized,

“several colleges and universities offer a master’s degree program in construction management or construction science. Master’s degree recipients, especially those with work experience in construction, typically become construction managers in very large construction or construction management companies.”

McCarthy, a Las Vegas-based construction company reported recently that with 4.2% unemployment rate in Nevada, only the “‘less desirables’ are available for work (Smith, 2004).” John Frye, vice president and project director for McCarthy in Southern Nevada went on,

“ ‘We’re in a growth path right now that’s faster than our college recruiting... we’re interviewing, trying to find people from other markets to bring them here. The good ones are all working and won’t leave. The highest demand is for superintendents and project managers whose salaries start at about \$70,000 and top out at \$125,000... [Frye] said the engineering school at University of Nevada, Las Vegas, produces only about a dozen graduates a year, so McCarthy goes to campuses in Arizona, California, Oregon and Utah looking for graduates with engineering and construction management degrees (Smith, 2004)’”

Construction Management Trends

The management skills necessary to run increasingly sophisticated construction companies are progressively being found in master's degree graduates. Berryman and Noble have commented "the recent trends in the competitive global market dictate that construction management students must manage at higher levels of sophistication. This is especially important at the graduate level where the focus of education is on 'management'."

UNLV added their Master of Science in Construction Management in 1999. Its program "is designed to improve and enhance the capabilities of those already in the construction industry, as well as those seeking middle- and upper-level management positions in the field (Jones, 1999)." When Arizona State University was considering adding a master's CM program it found that the "construction industry acceptance of graduate construction education is increasing (Badger & Segner, 1989)." Perhaps with some foresight, colleges have started graduate programs, scrambling to educate the next generation of Construction Management professors who will teach the growing number of future recruits as well as training the next generation of upper-level management.

More recent studies on improving graduate programs have asked the question, "what is the value of a GRADUATE vs. UNDERGRADUATE degree in Building Construction? (Uhlik and Chini, 1998)." Respondents from that survey wrote, "a person is much better equipped to succeed with a graduate degree;" however, others answered "[there is] very little difference between graduate and bachelor salaries, when compared with other majors."

Although higher sophistication is required to run a construction business, especially large corporations, Williamson stated in 1999, “the industry has yet to accept that graduate students are more valuable than undergraduates.” Williamson’s statement then begs the question, “Are advanced degrees worth the time and effort? (Kimbrough-Robinson, 2005).” Kimbrough-Robinson argues, “having a graduate degree does not guarantee you more money, more promotions, or a bigger market. It’s a gamble. I repeat: There are no guarantees.” Lacy and Crosby argue,

“If a bachelor’s degree is the most education that is required in an occupation, earning an advanced degree will not always increase median earnings significantly... The financial benefits of advanced degrees might be understated in many occupations because newer workers are more likely to have an advanced degree, and these workers might earn less because they have less experience.”

The problem is we don’t know if the perceived value of a Master’s degree has changed since Williamson’s remarks in 1999.

Summary

The review of the literature has shown how construction spending has increased over the past decade, and how the demand for qualified construction workers has matched that growth. However, colleges and universities have been unable to supply the industry with qualified construction workers and there is a shortage of upper level management. The industry at large still seems to find no added value for a master’s degree in construction management.

CHAPTER 3

RESEARCH METHODOLOGY

In order to develop the sample for the survey, the President of AGC-Utah was invited to participate by sending a link containing the survey used for this study to all members of AGC-Utah. He consented on the basis that the survey be administered by AGC rather than BYU to retain confidentiality of email addresses of AGC members. To encourage companies/recruiters to participate, they were offered access to the completed survey and final thesis at ACG-Utah headquarters in Salt Lake City. Both companies and recruiters have the capability of conducting analyses of survey data with files available at BYU or AGC-Utah headquarters. *The anonymity of individual schools, individual recruiters, and company responses is, of course, protected throughout this reporting process by aggregating the data.*

The President of AGC-Utah was sent an email with the link on November 29, 2005. The survey was launched on December 01, 2005 with an e-mail invitation that provided more details on survey objectives and a link to the survey site. Only two companies responded to the original invitation to participate and provided the requested data in the survey. A follow-up e-mail message was sent to the President of AGC-Utah to remind non-respondents on December 12, 2005. When the survey closed on December 16, 2005, 3 additional companies/recruiters had logged in and completed the questionnaire.

Because of the low response rate among AGC-Utah respondents, it was determined to use a smaller population that could be contacted individually. Due to proximity to Utah and the willingness of the Idaho Chapter of AGC to participate, 27 self-proclaimed general contractors in regions 3 and 4 of the Idaho AGC were chosen as the population for the study.

Telephone calls were made between 12/30/2005 and 01/06/2006. Those contractors who did not answer on the first call were called again during the first week of January 2006.

Contractors were asked the questions on the survey and responded accordingly. The survey results were then tabulated.

When the survey closed on January 6, 2006 15 companies/recruiters had logged in/answers questions via telephone, and completed the questionnaire. This is a response rate of 55.6 %, based on 27 phone numbers ultimately determined to be valid, as shown in the following table.

Because the AGC-Utah answers were considered valid answers, they were added to the final tabulation to increase significance and add respondent numbers. All in all, the survey records the data from 21 Utah and Idaho construction companies.

Questionnaire Development and Administration

The questionnaire for the survey was developed in several stages. First, Graduate Management Admissions Council (GMAC®) project staff consulted with the MBA Career Services Council's members, school career management and admissions staff, company recruiters, and other school administrators to discover issues important to them.

Then, paper-and-pencil versions of the questionnaire were developed, reviewed, and revised several times. At the conclusion of this process, the questionnaire was uploaded to the survey site and reviewed and tested by project staff. Finally, several recruiters participated in an online pretest and provided input on the understandability and functioning of the final, online questionnaire. GMAC® granted its permission to revise and use the survey for a study of construction management graduate students and the companies who hire them.

Following slight modification of selected questions by a graduate committee, the survey was submitted to and approved by Brigham Young University's Institutional Review Board (IRB) in the Office of Research and Creative Activities (ORCA).

AGC-Utah was contacted and recommended delaying the launch of the survey until December 2005 to administer the survey to achieve a higher response rate. Typically the winter months are a slower time in the construction industry and it was felt companies would have more time to complete a survey.

Administration of the questionnaire online offered several advantages over a paper-and-pencil administration. First, responses automatically went into a database that was available for analysis at all times. This allowed for monitoring of survey progress and eliminated the time and cost associated with data entry. Second, the site was programmed to check for the accurate completion of each question before the respondent was allowed to proceed to the next question. This eliminated the typical problems associated with item non-response. Finally, online administration made it possible to reach recruiters rapidly and efficiently.

Although the entire survey was online, respondents in Idaho were contacted via telephone and their responses were then input into the survey. This may have created some biases due to intonations in the voice and other “small talk” that may have taken place before the questions were asked.

Summary

This construction management Corporate Recruiter’s Survey was adapted from the annual GMAC Corporate Recruiter’s Survey. The survey was condensed to find the essence of determining the value of a master’s degree in construction management. The response to the survey was less than originally anticipated, however it was deemed appropriate to use a smaller population and administer the survey via telephone rather than via email. The response rate was over 59% by using a telephone survey.

CHAPTER 4

FINDINGS

Introduction to the Research

Many thanks to GMAC for their permission to use and modify their survey. Rich Thorne, president of AGC-Utah, was most generous to offer his services to email all Utah members. Dr. Burr carefully helped select and modify the survey for use in the construction industry.

Soon after the survey was launched, it became apparent results would not be as forthcoming as expected. Only two people responded to the first email sent by AGC. After a second email, only three responded for a total of five companies. The survey was sent out to general contractors and affiliates of AGC-Utah. Those who received the email may have felt the survey was not applicable to them because they had never hired a CM graduate student let alone an undergraduate.

Several major premises of the survey were underestimated.

1. Most if not all construction companies were aware that colleges offer a graduate degree in construction management.
2. A majority of companies actively recruited and hired college graduates with CM degrees.

3. Construction companies would place a higher value on master's degree graduates than undergraduates.
4. Construction companies would want to participate in a survey regarding the construction industry, would be interested in its results, and would respond to the survey.

The differing results of the findings may be due to the following disparities:

1. The GMAC survey is well known among companies who recruit MBAs and universities who offer MBAs.
2. MBA schools nationwide turn out hundreds of graduates each semester.
3. Some large company recruiters hire many MBAs each year.
4. The population of this survey included only two states.

The first disappointment of the research was that only two companies originally responded to an email sent to approximately 1,200 company representatives. A follow-up email found only three additional companies to complete the survey. These five companies were used as out layers to broaden the completed survey pool.

Table 4.1: Median Demographic of Respondents:

•MEDIAN DEMOGRAPHICS:

- Median company considered themselves local (intrastate).
- They primarily were involved in commercial construction.
- The company was headquartered in the west
- Gross revenues were between \$10MM and 24.9MM.
- They completed between 1 and 11 units in 2005.
- Had between 12 and 25 employees.
- The company and had never hired a CM student.

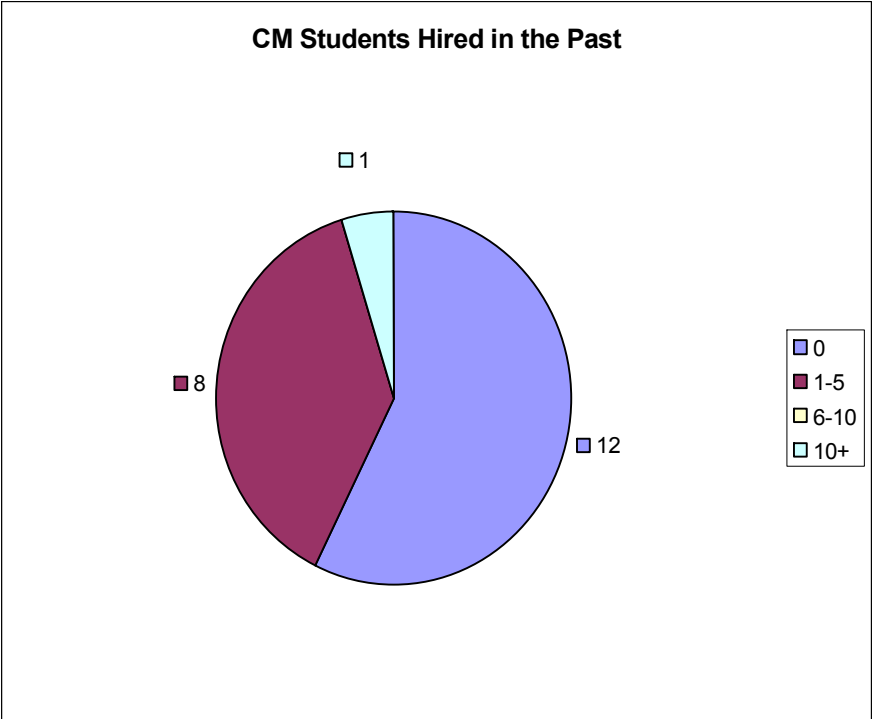


Figure 4.1: Number of CM Students Hired in the Past

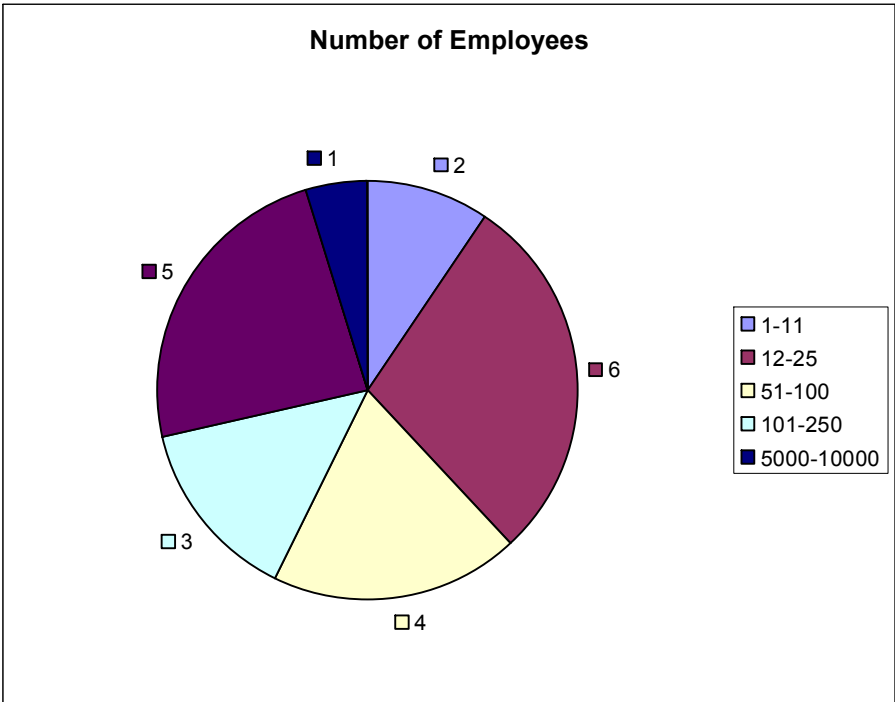


Figure 4.2: Number of Employees in Construction Companies

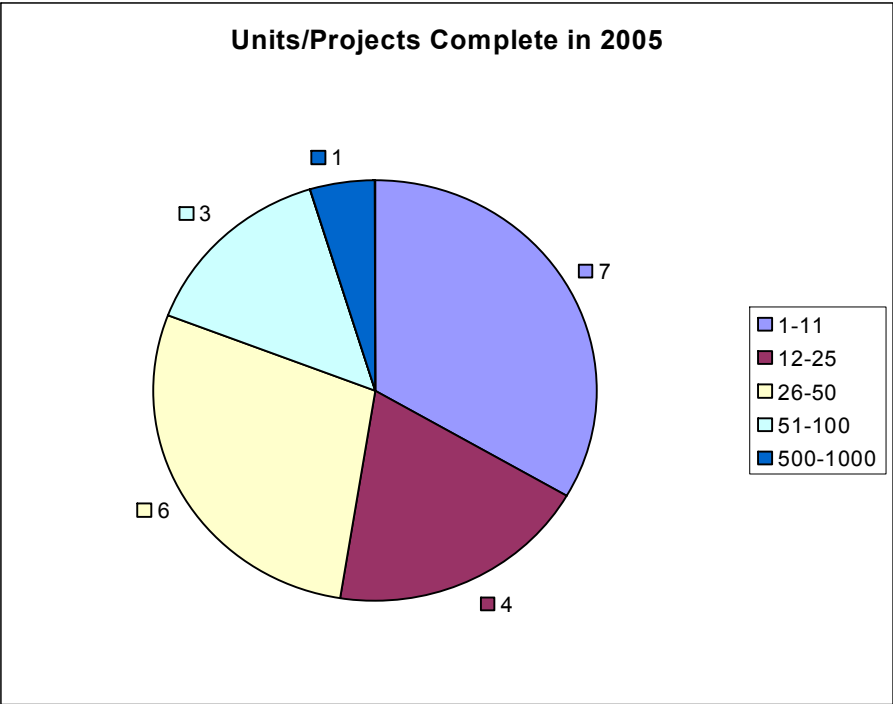


Figure 4.3: Number of Units/Projects Completed in 2005

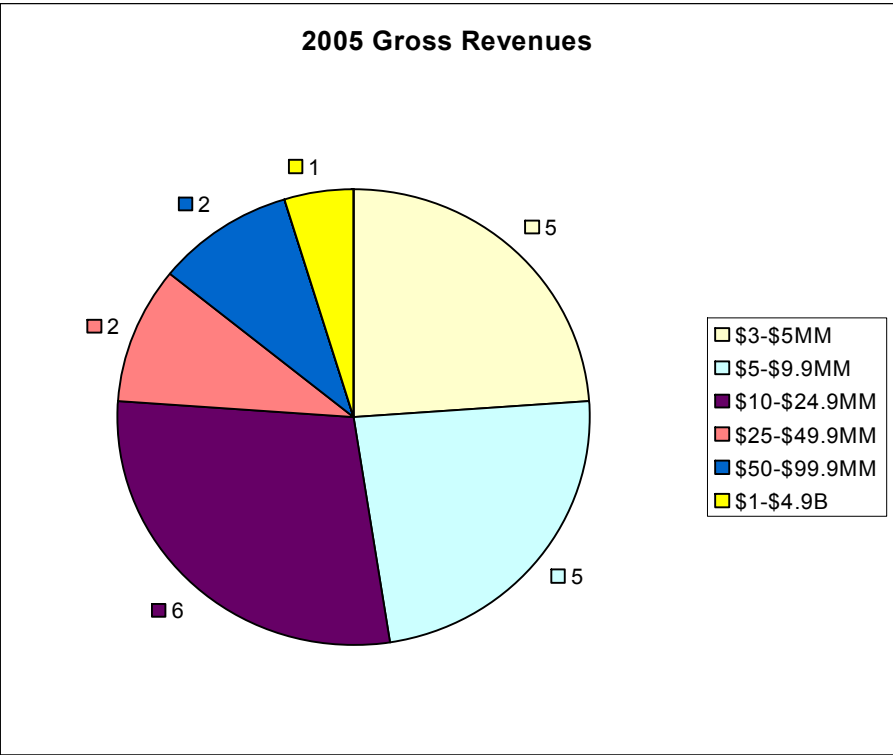


Figure 4.4: 2005 Gross Revenues

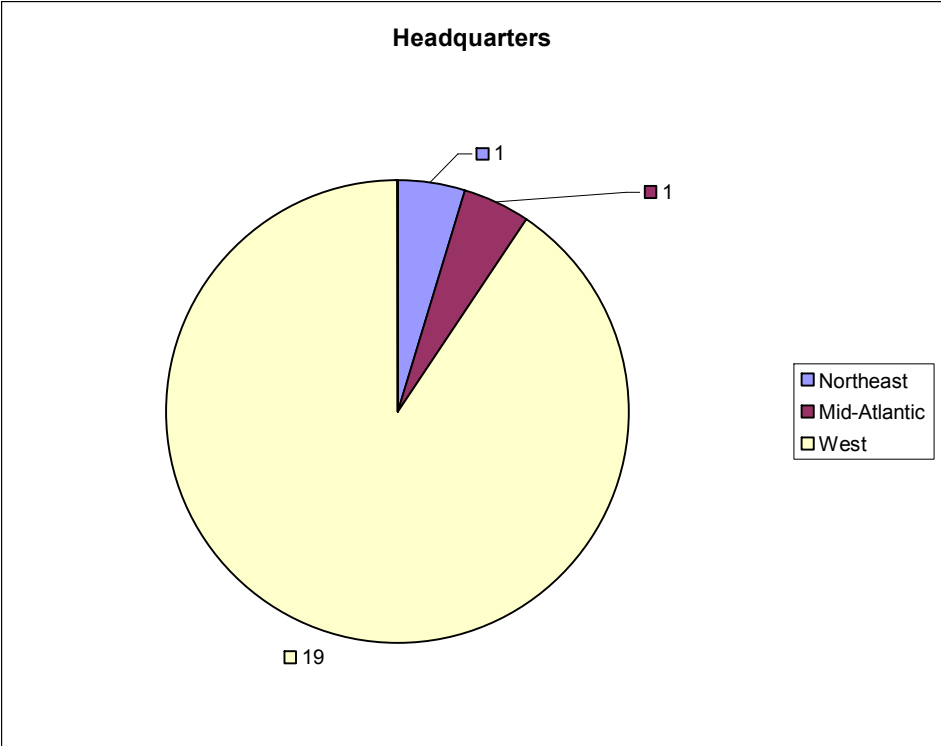


Figure 4.5: Headquarter Location

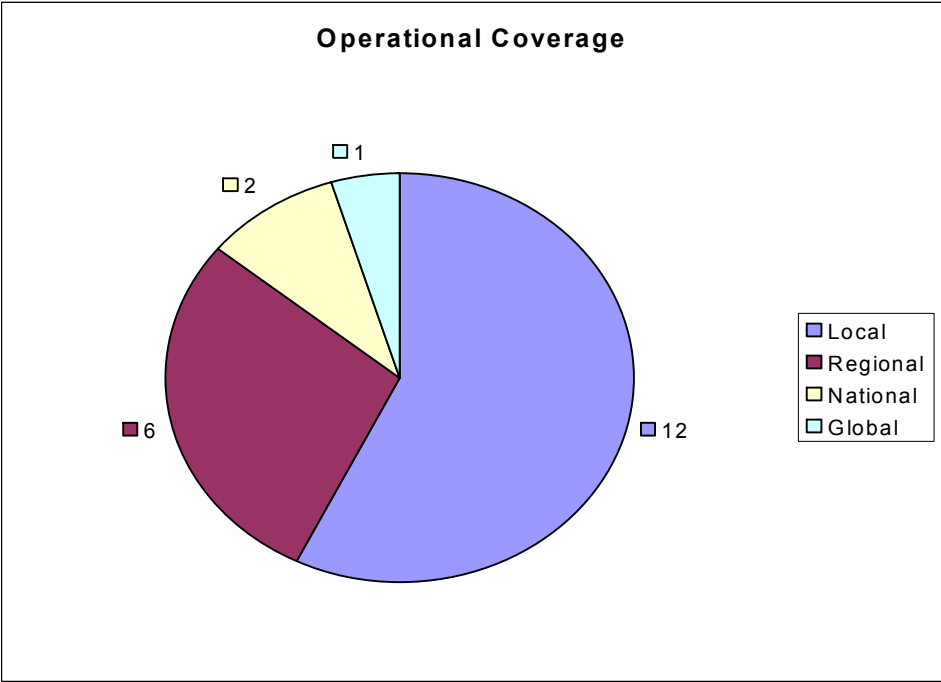


Figure 4.5: Operational Coverage

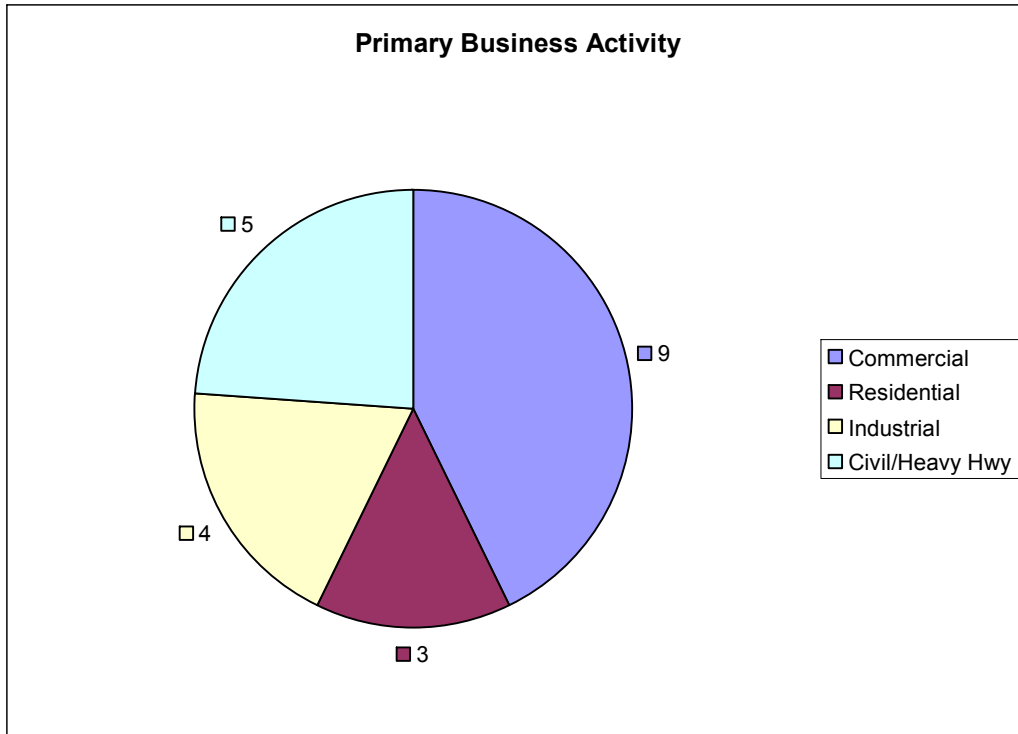


Figure 4.7: Primary Business Activity

1. How many Construction Management (CM) students have you hired in the past?

Over half of the company representatives interviewed had never hired a construction management graduate and just over one third had hired one to five.

2. Under what circumstances would you hire a graduate student over an undergraduate (or a person without formal schooling who has experience)?

When asked under what circumstances a company would hire a graduate CM student over an undergrad CM student, companies had a variety of answers. Some felt that hiring “depend(s) on the individual,” or if one candidate was “sharper than the other.” Others said a they probably would hire a graduate student “if we had a pressing

need,” “if we are looking for long-term professional experience, and had the time to train,” or “if we had the work demand,” but added the caveat “based on interview and qualifications.” Other companies hadn’t thought about it, did not foresee their business growing to the level of needing a master’s student, didn’t know there was a master’s degree or “do not consider Master’s degree candidates.”

Construction experience of the graduate seemed to be a common thread of the responses. One company does “all hiring through the union,” others add “field experience is critical,” or require “related experience”, “a lot of work experience,” “knowledgeable [candidates].” “Experience necessary,” says one company. “Working experience,” required says another and “need practical experience – smarts,” says a third adding, “if they were all school with no common sense, it wouldn’t matter [who was hired].”

Only one company suggested a master’s degree student for an executive position and that person would be groomed as a “replacement” for the president of the company as the owner gets older and retires.

3. How does your company establish and maintain relationships with graduate schools where your company regularly seeks new CM graduate hires?

Check all that apply.

Most companies 15/21 (71.4%) do not have any relationships with any recruiting channels. Out of the remaining seven companies, three post occasional job openings and/or intern openings on campus. Two use the schools alumni networks, grant requests for informational interviews at their companies and conduct intern interviews and hire interns. They also reported various methods in use, including not knowing how to recruit

college graduates or plan on working with BYU, BSU and ASU, but “not [to hire] graduate students.”

4. If your company does not hire new CM graduates at a school in a given year, to what extent do your relationship-building activities change?

Only one company reports having their college recruiting activities to increase, two reported a decrease and the rest 19/21 (90.5%) reported their relationship activities to remain the same or not applicable.

5. Please tell us why CM graduates may be attractive to your company versus undergraduates. Check all that apply. Is it their...

The number one response was that companies do not find CMs attractive. The top six reasons graduates may be attractive over undergraduates are #1 ability to adapt/change to new situations and tied for #2: 1) The ability to think analytically, 2) information gathering skills, 3) oral communication skills, 4) written communication skills and 5) skills in corporate ethical conduct.

6. In your opinion, how important is each of the following in new CM graduate hires? 5=Extremely Important 4=Very Important 3=Somewhat Important 2=Not very important 1=Not important at all

The most important skills a graduate could have are: 1) willingness to work long hours, proven ability to perform and having an internship or other functional experience directly related to the job, 2) Prior internship or other work experience in construction

and cultural fit with the company and 3) Quantitative knowledge/technical skills acquired through CM program. The least important were 1) relevant language, country, and/or cultural expertise, 2) willingness to relocate and rounding out the least important was GMAT score.

Relocation was probably a less important factor because these companies for the most part had head quarters in the west where many of the CM college students have family close by. In the past, BYU has been known as a good recruiter school for regional companies but not national companies because many of its graduates want to stay “local.”

7. Which of the following assessment methods does your company use with CM candidates? Check all that apply.

Over three out of four companies (76.2%) either don't use a formal assessment method or don't know. The other five use one or more of the following tests: knowledge, ability or experience valuations, behavior-based interviews, case or situational interviews, performance/work sampling, or personality testing/inventories.

8. What barriers are there to effective recruiting and selection of new CM candidates? Check all that apply.

Most companies didn't know (61.9%) or didn't feel there were any barriers (19%). The survey found the top two barriers were 1) other organizations aggressively competing for the same CM candidates and 2) unrealistic salary expectations of CM candidates, followed by 3) a limited supply of CM candidates with relevant industry-specific experience and 4) limited recruitment staff and /or budget.

9. Which of the following does your company do to obtain CM graduate talent? Check all that apply.

The three most popular answers were 1) the company considers CM graduate students, but does not actively recruit them, 2) obtain CM talent through CM intern pool and 3) recruit experienced direct-from-industry hires that have graduate degrees. Other responses commented they don't hire graduate students, but look internally, visit with a local college, or consider the candidates regardless whether they have a graduate or undergraduate degree.

10. What channels does your company use to recruit new CM graduate hires? Check all that apply.

The top reply was that companies use the school websites and their web posting services to recruit new talent, followed by job fairs/consortiums and in-house employee referral/alumni referrals.

As a side note, no company responded to using on-campus CM interview schedules, Internet search engines, trade publications, targeted minority recruiting, or partnering with community organizations.

School newspapers, government employment agencies, off-campus company-site visits by school groups, CM internships, conferences, company website job postings and professional recruiting/employment agencies each received one vote.

11. Of the recruiting channels used, which is your companies main source for new CM hires?

Companies reported that school websites and their web posting services to recruit new talent, followed by job fairs/consortiums and in-house employee referral/alumni referrals were the most used means to find CM talent. Professional organizations/conferences was a top channel used even though it was not listed as a top channel to recruit new CM talent. School websites and in-house employee referral made both lists of the channels used and the main source of new hires.

12. Which of the following BEST describes your company's actual timing in 2005 for campus interviews of CM master's degree graduates?

Ninety five percent of respondents either did not know, it wasn't applicable or did not plan any on-campus interviews. Only one company interviewed on an as needed bases year-round.

13. Which of the following BEST describes your company's expected timing in 2006 for campus interviews of CM master's graduates?

Ninety percent of respondents either did not know, wasn't applicable or didn't plan on interviews in 2006. Two respondents planned on interviewing in 2006. Although this represents a 100% increase from 2005, it still is a small number of companies looking for talent on campus.

14. Which of the following best describes your opinion of current economic conditions and their effects on your company's plans for recruiting new professional hires? "New professional hires" includes all categories of new employees in the hiring mix for which a college degree is a minimum requirement. This may include campus hires at undergraduate and graduate/MBA level, as well as experienced, direct from industry hires, some of which might also have CM or MBA degrees. This does not include company transfers.

Eighteen out of the twenty-one respondents felt the current economy was not weak and the company's recruiting plans were not going to change. It is pertinent to note that many of these companies do not plan on hiring new CM candidates and they don't see their recruiting plans changing.

This question shows most construction industry representatives have a positive image of the current economy, but don't foresee hiring college graduates in the near future.

15. Please tell us the number of new professional hires your company had in 2005. If your company did not hire or does not expect to hire candidates please indicate "-".

Thirteen companies did not hire any CM graduates or undergraduates in 2005. Two companies hired one CM graduate or undergraduate. Three companies responded they hired four students. One company hired 2; one hired 3 and one hired 5 in 2005.

16. Please estimate of professional hires in 2006. If your company did not hire or does not expect to hire candidates please indicate "-." "New professional hires" includes all categories of new employees in the hiring mix for which a college degree is a minimum requirement. This may include campus hires at undergraduate and graduate/MBA level, as well as experienced, direct from industry hires, some of which might also have CM or MBA degrees. This does not include company transfers.

Fourteen companies responded they do not plan on hiring any new professional hires in 2006. The seven remaining companies responded seven different ways: 1-2, 3,4,5,6,7.

17. If you did not hire any CM graduate students in 2005, what are the main reasons your company did not hire new CM graduates in 2005? Check all that apply.

The top reason why 12 companies did not hire any graduates in 2005 (57%) was because they did not have any job openings. Those who did responded:

- 1) All positions were filled by CM undergraduates
- 2) CM graduate skills/resources are not critical in my company
- 3) Recruiting resources were allocated to new undergraduate hires
- 4) Availability of candidates does not match my timing needs for hires
- 5) Offers made to CM grads were not accepted
- 6) Obtained CM talent by sponsoring current employees in CM programs
- 7) Difficulty in finding and identifying candidates

- 8) All Union
- 9) Did hire
- 10) Looking for engineers, not CM graduates
- 11) We are looking more for field workers rather than office people.
- 12) We have all the office people we need. It is pretty lean at the top. Manager has a CM degree
- 13) We only hire family

It is interesting to note there were other selections for companies to select, but they were not seen as relevant.

- 1) CM entry-level salary demands are too high
- 2) Hiring freeze in our organization
- 3) Company in process of reducing headcount
- 4) Recruiting resources were allocated to experienced hires direct from industry
- 5) Limited company growth anticipated
- 6) Restricted recruiting budget
- 7) Available CM candidates weren't qualified (no yield on interviews or resume screens)

18. When making an offer of employment, which of the following factors are stressed with CM candidates to influence them to accept your job offer? Check all that apply.

The top response was high ethical standards of the company (33.3%), followed by company image and reputation (23.8%), ability to impact results or bottom line (19%), achieving something that they can personally value (19%), Challenging and/or interesting work (19%), company stability (19%), having primary responsibility for a project, budget, or people (14.3%), location (14.3%), opportunity to learn new things (14.3%), work/life balance (9.5%), opportunity for advancement (9.5%), positive organizational climate (9.5%), working with a diverse group of people (culturally, racially, ethnically) (9.5%), and job autonomy (4.8%).

No companies selected job security as an influence.

19. What is your best estimate of the average expected starting annual salary (not including benefits) for new professional hires in 2004 (in \$US). If you didn't hire anyone enter a –

The most popular answer was \$40,000, with three companies favoring that salary. One company responded \$50,000, another \$55,000 and another \$60,000. One company responded \$38,000 and one company gave the range \$35,000 - \$45,000. This is an average starting salary of \$45,375.

Thirteen companies did not respond.

20. Is there a difference in expected starting salary (or benefits) for an undergraduate versus a graduate student in CM? If NO enter NO. If yes, enter the average difference?

Eighteen companies responded there would be no difference. Those companies who did respond did not place much extra value on a graduate degree. One company responded that it “depends,” another responded, “graduate by a couple thousand dollars,” and one company responded “with equal background experience, possibly \$2,000.”

21. In addition to base salary, which of the following kinds of compensation benefits do you typically extend in a job offer to a new CM graduate hire? Check all that apply.

The top two answers were the benefits package (33.3%) and a truck or truck allowance (33.3%). Next was a year-end bonus (23.8%) and profit sharing (23.8%), followed by a performance-based bonus (19%).

A moving bonus, signing bonus, tuition reimbursement, 401(k)/insurance, health insurance each received one vote.

A starting bonus, stock options, housing allowance, first-year bonus and commissions did not receive any votes.

22. What is your best estimate of average first-year TOTAL (Base salary plus other compensation) annual compensation for new CM graduate hires in 2005 (in \$US). If you hired no graduates in 2005, please specify "undergraduate" and give amount. If you didn't hire anyone enter –

The nine companies who responded gave a range from \$40,000 to \$85,000. \$45,000 was the most common answer, with three companies responding \$45,000. One company figured \$50,000, two at \$60,000, one at \$75,000, and one at \$85,000. (One company responded with the range of \$40,000 - \$60,000.)

23. From how many schools does your company recruit CM graduates? Please give us your actual for the end of your 2005-recruiting season.

Fifteen of the 21 companies did not recruit from any colleges or universities in 2005. Five companies recruited in 1 to 5 universities, and one company responded they recruited in 6-10 companies.

24. From how many schools does your company recruit CM graduates in 2006? (Expected number)

One third (7) responded they expected to recruit at 1-5 universities this year and one company expected to recruit in more than five schools. Fifteen companies did not plan on recruiting at any colleges in 2006.

Although the number is small, 2 companies, or about 9.5% of the total sample plan to recruit at a college in 2006 that did not recruit at a college in 2005.

25. For which general job area(s) does your company recruit? Check all that apply.

Most companies who are recruiting on college campuses are looking for management candidates (12 or 57.1%). Others look for accounting, entrepreneurship, finance, Information Technology/MIS, marketing, or field operators.

26. Is your company a global, national, regional, or local (intrastate) business?

Twelve of the twenty-one companies marked themselves as local. Six responded regional, two were national and one was global.

27. In which US region is your company headquartered?

Nineteen (90.4%) of the companies listed the West (AK, CA, HI, ID, MT, NV, OR, UT, WA, WY) as their headquarters. A single company marked Northeast (CT, MA, ME, NH, NJ, NY, RI, VT) and another single company marked the Middle Atlantic (DC, DE, MD, PA, VA, WV) as their headquarters.

28. Please indicate the approximate gross annual revenues for 2005 of your parent company (including all plants, branches, divisions, and subsidiaries).

Six companies did between \$10MM and \$24.9MM in 2005. Five companies grossed \$3MM-\$5MM and another five grossed \$5MM-\$9.9MM. Two companies had revenues between \$25MM and \$49.9MM. Two other companies had revenue totals between \$50MM and \$99.9MM. One company marked \$1B – \$4.9B in revenues.

29. Please indicate the approximate number of units completed in 2005 of your parent company (including all plants, branches, divisions, and subsidiaries).

Thirty three percent of companies surveyed completed 1-11 units in 2005. Four or 19% list 12-25 projects. Six companies listed 26-50 projects complete (28.6%). Three companies marked 51-100 projects completed and one company marked 500-1000 projects completed for their organization in 2005.

30. Is your primary business commercial, residential, industrial or civil/heavy highway?

Nine companies listed their primary business as commercial, three as residential, four as industrial and five as civil/heavy highway.

31. How many employees are employed in the parent company for which you work?

Two companies listed 1-11 employees who worked for them. Six companies marked 12-25 employees. Four marked 26-50 employees. Three marked 51-100, five marked 101-250 and one marked between 5,000 and 10,000 employees working for their company.

32. Please use the space below to share any additional comments that you believe would be valuable to CM schools, to other recruiters, or other graduate students when we design next year's survey.

Ten people responded to this question. A major theme of their responses seems to be they would like more hands-on experience rather than management experience.

Company representatives said, “we value hands-on construction experience far more than leadership experience in other fields.” Another company looked for candidates with, “common sense and practicality... horse sense.” One person said that schools should, “start gearing up for field efforts-field operations. Curriculum that would spark interest for a superintendent rather than project managers.” Another representative said, “[students] need hands-on experience 1-year part time ON THE FIELD, to understand projects.”

Respondents also noted that “estimating/project management/budget control/scheduling” are important subjects to learn. Another person would like more “emphasis on heavy civil construction” so that students “are aware of the opportunities in this area.” Speaking of superintendents and subcontractors, one person responded tongue-in-cheek that schools should “include childhood development classes for the guys in the field.”

Summary

Over half of the companies surveyed had never hired a construction management student, let alone a graduate. Most companies felt that a graduate degree was not an automatic qualification for a hiring privilege, and experience still seemed to be the thread that separates a job candidate, not degrees held. In fact the most popular answer to the

question of how companies obtain graduates was “the company considers CM graduate students, but does not actively recruit them.” Over seventy percent of companies did not have any relationships with colleges and this may be due to the number of companies surveyed who considered themselves “local” (12/21) or “regional” (6/21). Most of the companies (90.4%) contacted had headquarters in the west (AK, CA, HI, ID, MT, NV, OR, UT, WA, or WY). Sixteen of these companies grossed less than \$10MM in 2005 and 17 companies completed less than 50 units and 8 had less than 26 employees. Nine companies listed their primary business as commercial, three as residential, four as industrial and five as civil/heavy highway. Only five companies responded that they use formal assessment methods.

University Recruitment

Those companies who do hire on college campuses, most say they look for management (12), (superintendents and project managers). Going to a university to find new hires does appear to be on the rise as well. Only 5 companies said they looked on campus in 2005 for new hires. Seven responded they would be on campus in 2006. This finding is interesting because in another question 15 companies do not have any relationships with colleges; only one company reported they plan to increase their relation-building activities and two reported a decrease. Those who did hire on campus used the school’s website or other web postings to attract students and also found those websites to be the most effective way of finding new hires. Twelve companies did not hire any graduates because all positions were already filled. The next highest response was that undergraduates filled all positions.

Compensation

Eighteen companies responded there would be no difference in compensation between a graduate and undergraduate. Others responded that it “depends” or maybe “\$2,000” all things being equal. When asked to quantify the average starting salary for a graduate student, the average response seemed slightly higher than what one pay for an undergraduate. Taking into consideration all the company’s responses to how much a graduate student should be paid the first year, the average of these numbers is \$57,000/year (including all other compensations – insurance, truck, bonuses, etc.). A truck or truck allowance and benefits package (health insurance) were the most offered bonus. Companies reported that their best guess for the starting salary of any college graduate would be \$45,000/year. Companies reported stressing high ethical standards of the company and company image and reputation as the top two factors stressed when influencing a college graduate to accept a job at their company.

Graduate Attributes and Expectations

The ability to impact the bottom line and achieving something that they can personally value were the top two stressed items when persuading a student to work for a company. They also reported that the most important skills a graduate could have are: 1) willingness to work long hours, proven ability to perform and having an internship or other functional experience directly related to the job, 2) Prior internship or other work experience in construction and cultural fit with the company and 3) Quantitative knowledge/technical skills acquired through CM program. The least important were 1) relevant language, country, and/or cultural expertise, 2) willingness to relocate and

rounding out the least important was 3) GMAT score. The top six reasons graduates may be attractive over undergraduates are #1: ability to adapt/change to new situations and tied for #2: 1) The ability to think analytically, 2) information gathering skills, 3) oral communication skills, 4) written communication skills and 5) skills in corporate ethical conduct. Most construction companies had a positive view of the current economy.

It is interesting to note that companies responded that CM students had an unrealistic salary expectation as a barrier to hiring, but when asked why, companies did not hire CM graduate students in 2005 CM because entry-level salary demands were too high. Perhaps the unrealistic salary expectations are for undergraduates only, or those who don't hire CM students don't realize there are unrealistic salary expectations.

CHAPTER 5

CONCLUSIONS

This thesis attempted to determine how executives of construction companies value a master's degree in construction management. Specifically it attempted to answer the questions in the following categories:

1. Is the construction industry aware of a construction management master's degree?
2. Does the construction industry place value on a degree in construction management?
3. What is the value of a master's degree in the construction industry?

Category 1:

Is the construction industry aware of a construction management master's degree?

According to the first question of the survey (it asked how many construction management students the company had hired) no one responded that they were not aware of a master's degree. However, the second question of the survey asked under what circumstances the company would hire a graduate student over an undergraduate. Two respondents replied they were not aware there was a graduate program for construction management. Only 2 in 21 respondents admitted they were not aware of a master's

degree in construction management. A large majority was either aware of the graduate degree, or simply gave an answer they felt appropriate to the question.

Answer to Question 1: (Is the construction industry aware of a construction management master's degree?) Yes, a majority of the construction industry is aware of a master's degree in construction management.

Category 2:

Does the construction industry place value on a degree in construction management?

If universities who offer the CM graduate program are included as part of the construction industry, yes according to the review of literature, they value a bachelor's as well as a master's degree. The review of literature shows there is a large demand for construction management students in general –so much so that demand currently outpaces supply. Not enough construction management students to meet the demand. Information is not kept in any centralized location on the attrition rate for graduate students but there was no information was found regarding graduate students and joblessness. If anything research indicates a demand in upper-level management. For example, Berryman and Nobe (1999) commented: “the recent trends in the competitive global market dictate that construction management students must manage at higher levels of sophistication. This is especially important at the graduate level where the focus of education is on ‘management’.” Colleges and universities see a need to continue to create new construction management programs for graduate students. Universities specifically organize their programs to meet the demand for upper-level construction

management. Arizona State University finds “construction industry acceptance of graduate construction education is increasing (Badger & Segner, 1989).” They see a need to educate the next generation of upper level management as well as provide a professor base for the new programs continually being formed. UNLV’s Master of Science in Construction Management “is designed to improve and enhance the capabilities of those already in the construction industry, as well as those seeking middle- and upper-level management positions in the field (Jones, 1999).”

The survey results paint a slightly different picture. Only 43% of the respondents had ever hired a person with a CM degree, but companies responded that they hired 21 college graduates in 2005 and planned on hiring 26 college graduates in 2006. Over 70% don’t maintain any relationships with any colleges or universities but 2 companies responded that they plan on increasing their relationship-building activities with schools. That leaves a total of 8 companies planning to recruit college students in 2006. As stated above, those eight companies will hire roughly 26 college graduates of various fields in 2006.

The survey suggests that there is not a large demand for new hires with a CM degree (only 8 companies plan on hiring in 2006), but that is over 1/3rd of the respondents. The review of literature finds a seemingly overwhelming lack of CM talent to go around. The reasons for the disparity may be explained by the demographics of the companies surveyed. Most of the companies surveyed were local or regional companies (18/21), had less than 50 people working for them (17/21), did less than 50 units/year (12/21) and did less than \$25MM/year (16/21). Whereas companies like Pulte who completed over 40,000 units in 2004 hired 800 college graduates alone in 2004. Another

possible solution is that academia biases influence their research to prove the value of their programs, although this is unlikely because of the demand from large construction companies like the “Builder 100.”

Answer to Question 2: (Does the construction industry place value on a degree in construction management?) Yes, the industry as a whole (academia included or excluded) does place a value on construction management degrees. This is seen by the large demand for CM graduates throughout the country as viewed in the review of literature. Even smaller local and regional construction companies place a value on CM degrees as seen in the survey.

Category 3:

What is the value of a master’s degree in the construction industry?

This question is really at the heart of the research. In order to answer this question one must define what ‘value’ means. According to the “Compact Oxford English Dictionary” online, value means, “the regard that something is held to deserve; importance or worth” and “the numerical amount denoted by an algebraic term; a magnitude, quantity, or number (Compact Oxford English Dictionary, 2006).” This section will attempt to answer ‘value’ as it relates to this category.

Value:

Only 6 companies responded they do not find CM graduates attractive to hire (survey question 5). The top answers for the rest of the respondents were “the ability to answer to change (5/15),” “ability to think analytically (4/15),” “information-gathering

skills (4/15),” oral communication skills (4/15),” “written communication skills, (4/15),” and “skills in corporate ethical conduct (4/15).” The main reason why companies did not hire graduate students in 2005 was that there were no job openings for them (12/21).

When asked under what circumstances a company would hire a graduate student (survey question 2), one person responded, that they didn’t “foresee [hiring a graduate student] unless the business would grow in the future,” showing this company realized the worth of hiring a person who could help manage a growing company. Another company mentioned they might hire and groom a graduate student as “a replacement,” again showing the importance of management skills a graduate student would bring to a company. One company responded they would hire a graduate student if the company were “looking for a long-term professional experience and have time to train.” This answer suggests the long-term significance and appeal a graduate student might have. One respondent realized that if they “changed the nature or scope of work” a person with graduate management expertise would be beneficial. “If we had a pressing need,” responded another. “If we had the work demand,” said another. There does appear to be a “regard that something is held to deserve; importance or worth,” among a majority of those surveyed –even if all things being equal the fact a person has a graduate degree seems to hold ‘value.’

Value Continued:

The second definition for ‘value’ is: “the numerical amount denoted by an algebraic term; a magnitude, quantity, or number.” The best way to determine this value is to find out the difference in compensation that a first-year graduate would have over an

undergraduate. Companies were asked for their best estimate of the average expected starting annual salary of any new professional hire (CM or any other field). Eight companies responded from \$38,000 to \$60,000 for an average of \$45,375/year. Four out of 21 companies (question 20) did feel there would be a difference in compensation by “a couple thousand dollars,” “\$2,000,” “depends” and “\$15,000.” Seventeen did not respond or responded with “no.” Eight companies answered the question of what the first-year total compensation would be for a person with a master’s degree (question 21). They responded “40-60k,” “45,” “45,000 including benefits package,” “45k+,” “\$50,000” “\$60,000” “\$75,000” and “\$85,000,” bringing the average first-year compensation to roughly \$56,875. It is impossible to determine if the eight to responded to the “new professional hire” question above with a first-year salary of \$45,375 were the same who answered the “total compensation” question with an average total compensation of \$56,875, but there are a few who put a monetary value on a master’s degree. Perhaps if more national or global companies had been surveyed there would have been a greater demand for graduate students; however, the purpose of this survey was not to survey the top 100 builders in residential or commercial/industrial construction, but to find a general snap shot of the industry’s view of construction management graduates.

Answer to Category 3: Yes in part and no in part. Most companies surveyed perceived a value on a master’s degree in construction management. This is evidenced by the fact that only 5 companies out of 21 did not find a graduate student as an attractive hire. They saw a value in more schooling as evidenced by the upper-level management positions they outlined in their responses.

When asked to quantify the added value of a master's degree, only four companies responded to the question (#20) (and they did so favorably). However, most companies (17/21) responded that there would be no difference in first-year salary between a graduate and undergraduate. Most companies (13/21) did not respond to the question (#22) regarding total compensation for a graduate student either.

Recommendations

For further research:

- Although it cannot be empirically stated because of the way the survey was tabulated, there seems to be a correlation between the dollar volume of a company and the compensation a company is willing to pay for a graduate student.
- As alluded to in the delimitations, other studies could analyze demographics of graduate students,
- Studies could calculate the demand for graduates in the residential, commercial/public and civil/heavy highway construction arenas.
- Perhaps a comparison of graduation rates among project and thesis-based graduate programs, and universities who offer a dual graduate degree in construction management and master of business administration (MBA). This would be helpful for schools that are creating or expanding their programs.
- Other studies could focus on those companies who do hire graduate students and find out the numerical value they place on master's degrees.

For construction management schools:

For further research, it is recommended that universities and colleges start collecting data on their graduate students. Many universities already conduct exit surveys of their undergraduates. Exit surveys are a natural step to gathering the same information for all graduating students, but graduate and undergraduate. Finding information regarding where graduate students are being hired was difficult to come by. In order to study who is hiring graduate students and why, it is recommended that ASC consider gathering additional information from its members regarding their graduate students and those who hire them. The GMAC survey may be used as a standard for demographic information that could be gathered. Bilbo's survey may be used as well. Universities who offer master's degrees could do a better job keeping track of their graduate students once they leave school and compiling statistics in a way that does not breach privacy or confidentiality. A case study that finds where graduate students are being hired and profiles one company would greatly contribute to the literary body of knowledge. Once this information is found this survey could be conducted again by contacting local and global construction companies, and discover the average starting salaries, why companies find graduate students attractive.

Universities and associations such as ASC ought to supply a list of schools that offer master's degrees in construction management. Originally the focus of this study was broader and focused on the universities who have master's degrees as well as those who recruit master's degree students. Several hours were spent contacting all members of ASC to find out who has a graduate program, how many have graduated and where they are currently working. The information was not forthcoming. The current web master of

ASC said that there is currently no monitoring of ASC members who have a graduate program. Of the universities who responded, some of them did not keep track of where graduates went or who hired them. Others responded that the information requested was confidential and could not be divulged.

Implications

Having worked as an executive for a residential construction company for one year while writing this thesis and having hired over a dozen CM interns; I see the value of hiring CM students for my company. We will continue to hire undergraduate interns and most likely hire future superintendents who have experience coupled with a degree in construction management.

Graduate students have a greater value for a company because they have additional technical and analytical skills that undergraduates generally do not possess. We will probably hire graduate students in the future because of the upper-level management skills they possess. However, not all graduate programs are created equal. To our company an MBA or CM degree with an emphasis in management rather than a thesis would be looked upon more favorably. For example, if two graduate students were to inquire about a position with KK Custom Homes (the company I work for), and one came from a school that had a thesis-based curriculum and the other came from a management-based curriculum, the student whose education had focused on management would be the one who was hired. The need is not here for a person with depth and specialty research in one area, the need is for the person who has a breadth of management knowledge.

BYU's MS program naturally fits under the 'management' arm of the university. It needs to be placed there or the graduate program may suffer. After all, the degree is construction *management*, not construction *technology* or *engineering*. If the focus of the curriculum is on management with emphasis in upper-level management, students should be working on MBA and specialty construction emphasis courses, not writing theses. The management courses will be more valuable to the students, companies and the industry.

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APPENDICES

Appendix #1

Research Questions


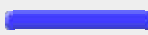

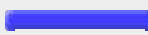
Permission was granted by GMAC to modify their survey questions and slant them towards a construction management graduate degree. Below are the 32 questions that were chosen out of over 100 original questions of the GMAC survey to find the value the construction industry places on master's degrees in construction management and the results from that survey.

Survey Results

Corporate Recruiter's Survey **for Construction Management Graduate Students**

Thank you for participating in this survey. It is being conducted by graduate students and faculty at Brigham Young University to determine the value recruiters have of a master's degree in construction management (CM). Participants are chosen only from the Utah Chapter of the Associated General Contractors of America. The survey is composed of 32 questions and will take 15-20 minutes to complete. There are minimal risks and/or benefits to your participation in this study. A copy of the results will be available at the Utah AGC office when complete for those interested in the study. Involvement in this research is voluntary. You may withdraw at any time without penalty or refuse to participate entirely. Unless otherwise specified, "graduates" refer only to master's degree graduates of CM programs. Please contact Benjamin Davis with any questions regarding this survey at: bkdavis@byu.edu If you have further questions regarding your rights as a research subject, please contact: Renea L Beckstrand Institutional Review Board for Human Subjects Brigham Young University (801) 422.3841

1. How many Construction Management (CM) students have you hired in the past?

0		57.1%	(12)
1-5		38.1%	(8)
6-10			(0)
10+		4.8%	(1)
I didn't know there was a master's degree for CM.			(0)
TOTAL		100.0%	21

2. Under what circumstances would you hire a graduate student over an undergraduate (or a person without formal schooling who has experience)?

#	Response
1	All hiring through Union
1	Based upon potential. The type of person rather than education. Value system -training can be worked on. CM grad w/ field experience is critical.
1	Depend on the individual. Need practical experience- smarts. IF they were all school w/ no common sense, it wouldn't matter.
1	Don't foresee that unless the business would grow in near future
1	Education and training and for a long-term fit as owner get older - for a replacement
1	Experience, undergraduate field of studies applicable to the position
1	If we are looking for long-term professional experience and have time to train.
1	If we changed structure or scope of work
1	If we had a pressing need
1	If we had the work demand. Able to manage their jobs with the people we have. Based on interview and qualifications.
1	In most circumstances, we do not consider Master's degree candidates. If the person had some valuable, related experience and was a good fit with our organization, we would consider them.
1	A lot of work experience
1	Maybe 90% of the work is design/build and repeat business
1	Not aware of a graduate student. Not thought about it.
1	Not aware there was a master's degree. If they were more knowledgeable
1	SCHOOLING FOR CREDITIALS AND EXPERIENCE NECESSARY
1	Sharper than the other guy.
1	Size and scope of the work
1	Son taking over the construction business. Graduate student didn't have enough paperwork here to do. Office workers do field work as well.





1 We are a family company and do not hire any outsiders.

1 Working experience





















3. How does your company establish and maintain relationships with graduate schools where your company regularly seeks new CM graduate hires? Check all that apply.

Host off-campus company-site visits for school groups		(0)
Host company information sessions on campus		(0)
Participate in classroom or extracurricular educational and networking activities (case studies, lectures, career workshops, etc.)	4.8%	(1)
Sponsor employees to serve at their CM alma maters in leadership roles		(0)
Offer corporate goodwill and PR including donations, scholarships, etc.		(0)
Use schools' alumni networks for experienced-direct-from-industry hires	9.5%	(2)
Support company projects for student course credit or experience	4.8%	(1)
Post occasional job openings and/or intern openings on campus	14.3%	(3)
Conduct an interview schedule even though there may be uncertainty about ability to hire	4.8%	(1)
Grant requests for informational interviews at your company	9.5%	(2)
Conduct intern interviews and hire interns	9.5%	(2)
None of the above	71.4%	(15)
Don't know	4.8%	(1)
Other: -	4.8%	(1)
Other: Don't do any of the above, but would like to know which method is most effective and be instructed as to the benefits.	4.8%	(1)
Other: Have done a safety program with BSU	4.8%	(1)
Other: Plan on working with BYU, BSU and ASU in the future, but not graduate students	4.8%	(1)
Other: review annual resume booklets, have not seen one lately	4.8%	(1)
Other: We do not hire any CM graduates and don't see a need in the near future.	4.8%	(1)
Other: Wouldn't be opposed to having some of those relationships.	4.8%	(1)

4. If your company does not hire new CM graduates at a school in a given year, to what extent do your relationship-building activities change?

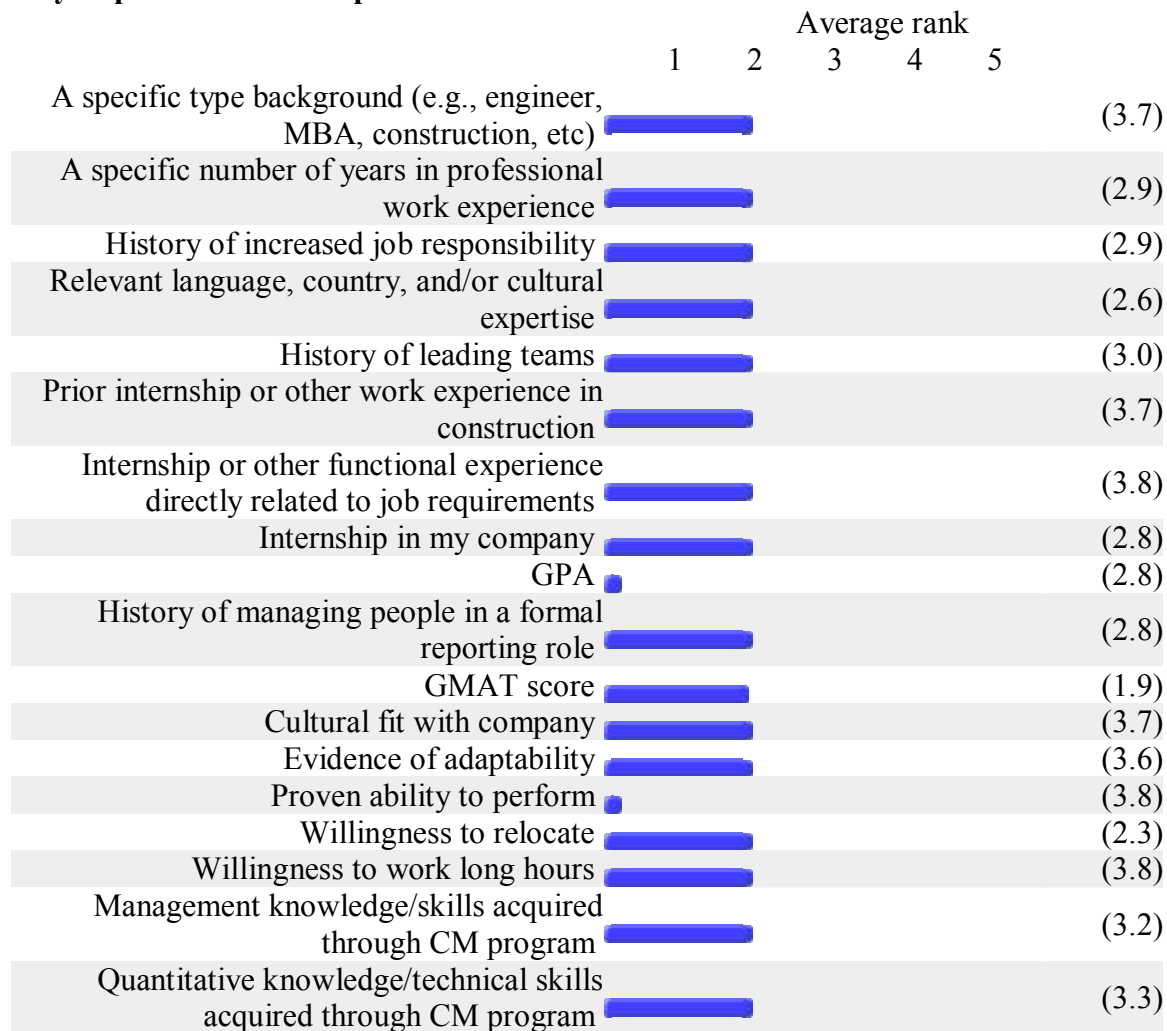
Increases	 4.8%	(1)
Decreases	 9.5%	(2)
Remain about the same	 76.2%	(16)
Not Applicable	 14.3%	(5)

5. Please tell us why CM graduates may be attractive to your company versus undergraduates. Check all that apply. Is it their...






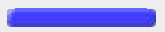


Ability to adapt/change to new situations	 23.8%	(5)
Ability to integrate information from a wide variety of sources	 14.3%	(3)
Ability to think analytically	 19.0%	(4)
Ability to think strategically	 14.3%	(3)
Ability to make decisions with imperfect information	 9.5%	(2)
Information-gathering skills	 19.0%	(4)
Quantitative skills	 9.5%	(2)
Technological skills	 14.3%	(3)
Initiative/risk-taking ability	 9.5%	(2)
Interpersonal skills	 9.5%	(2)
Oral communication skills	 19.0%	(4)
Written communication skills	 19.0%	(4)
Creative problem-solving skills	 9.5%	(2)
Leadership skills	 19.0%	(4)
Ability to delegate	 4.8%	(1)
Implementation skills	 4.8%	(1)
Cultural sensitivity and awareness	 9.5%	(2)
Skills in corporate ethical conduct	 19.0%	(4)
Work ethic	 14.3%	(3)
None of the above – My company does not find CMs attractive	 28.6%	(6)

Other -		(5)
Other All Hires through Union		(1)
Other Construction Tech Degrees- those who have a more hands-on experience are what we are looking for		(1)
Other Depends on the individual		(1)
Other Depends upon the person and the skills they have		(1)
Other Small company with no reason to hire at this time.		(1)
Other We don't do more projects than we can handle		(1)











6. In your opinion, how important is each of the following in new CM graduate hires? 5=Extremely Important 4=Very Important 3=Somewhat Important 2=Not very important 1=Not important at all






7. Which of the following assessment methods does your company use with CM candidates? Check all that apply.

















Personality testing/inventories (e.g., MMPI, Hogan, Myers-Briggs)	 4.8%	(1)
Interactive assessments (role plays and simulations)		(0)
Career interest and job fit assessments (e.g., Career Leader, Career Anchors, Strong)		(0)
Performance/work sampling	 4.8%	(1)
Mathematical problem solving		(0)
Case or situational interviews (candidates respond to a hypothetical or real situation)	 9.5%	(2)
Computer-assisted interviews (a computer screens candidates based on their responses)		(0)
Behavior-based interviews (candidates describe specific examples of their skills)	 9.5%	(2)
Knowledge, ability or experience evaluations (measures of job specific knowledge, experience, or abilities such as mental, physical or technical.)	 9.5%	(2)
None of the above – Do not use formal assessment methods	 61.9%	(13)
Don't know	 14.3%	(3)
Other: -	 14.3%	(3)

8. What barriers are there to effective recruiting and selection of new CM candidates? Check all that apply.



Limited supply of CM candidates with relevant industry-specific experience	 9.5%	(2)
Limited supply of CM candidates with relevant functional experience	 4.8%	(1)
Limited supply of minorities (ethnicity, gender, or nationality) in CM candidate pool	 4.8%	(1)
Other organizations aggressively competing for the same CM candidates	 14.3%	(3)
Poor interviewing preparation and/or performance of CM candidates	 4.8%	(1)
Difficulty in finding and identifying CM candidates	 4.8%	(1)
Limited recruitment staff and/or budget at your company	 9.5%	(2)
Unrealistic job role/level expectations of CM candidates	 4.8%	(1)
Unrealistic salary expectations of CM candidates	 14.3%	(3)
Unrealistic view of advancement opportunities of CM candidates	 4.8%	(1)





















None of the above – I do not feel there are any barriers	 19.0%	(4)
Don't know	 42.9%	(9)
Other: -	 19.0%	(4)

**9. Which of the following does your company do to obtain CM graduate talent?
Check all that apply.**



Sustain a formal or centralized CM recruiting program		(0)
Recruit new CM graduates on an informal or decentralized basis	 4.8%	(1)
Recruit new CM graduates on an as-needed basis	 4.8%	(1)
Recruit new CM graduates on a planned periodic basis		(0)
Consider CM graduate students, but do not actively recruit them	 9.5%	(2)
Obtain CM talent through CM intern pool	 9.5%	(2)
Develop CM talent by sponsoring current employees to attend CM programs	 4.8%	(1)
Recruit experienced direct-from-industry hires that have graduate degrees.	 9.5%	(2)
Don't know	 14.3%	(3)
Other: All hires are family	 4.8%	(1)
Other: Civil Engineering Students @ ISU	 4.8%	(1)
Other: Give Rudy Pusey a call @ BYUI	 4.8%	(1)
Other: Look more for engineers than CMs	 4.8%	(1)
Other: None	 4.8%	(1)
Other: None specifically, if one applies, then we will look at him	 4.8%	(1)
Other: We don't	 4.8%	(1)
Other: We don't recruit graduate students.	 4.8%	(1)
Other: We would hire internally	 4.8%	(1)

**10. What channels does your company use to recruit new CM graduate hires?
Check all that apply.**

On-campus CM interview schedules and supporting activities		(0)
Internet search engines and job-posting boards		(0)
Local and/or national newspapers	 9.5%	(2)
School newspapers	 4.8%	(1)
Trade publications and magazines		(0)

Government employment services	 4.8%	(1)
Job fairs/consortiums	 14.3%	(3)
Off-campus company-site visits by school groups	 4.8%	(1)
CM internship program and/or company project support by CM students	 4.8%	(1)
Targeted minority recruiting (e.g., NAACP, minority colleges/organizations)		(0)
Partnerships with community organizations		(0)
Professional (industry- or function-specific) organizations/conferences	 4.8%	(1)
Company's Web site and job postings	 4.8%	(1)
School Web sites and their Web posting services	 19.0%	(4)
In-house employee referral/alumni referrals	 14.3%	(3)
Professional recruiting/ employment agencies	 4.8%	(1)
Don't know	 19.0%	(4)
Other: -	 23.8%	(5)
Other: @ISU	 4.8%	(1)
Other: All Union	 4.8%	(1)
Other: BYU Boise state paper	 4.8%	(1)
Other: Internally	 4.8%	(1)
Other: Recruit on a couple campuses in WY/MT, but it is for engineers	 4.8%	(1)
Other: Still working on that	 4.8%	(1)
Other: We don't	 4.8%	(1)
Other: We don't recruit graduate students.	 4.8%	(1)
Other: We haven't looked at it in the past	 4.8%	(1)

11. Of the recruiting channels used, which is your companies main source for new CM hires?

On-campus CM interview schedules and supporting activities		(0)
Internet search engines and job-posting boards	 4.8%	(1)
Local and/or national newspapers	 4.8%	(1)
School newspapers		(0)
Trade publications and magazines		(0)
Government employment services		(0)
Job fairs/consortiums	 4.8%	(1)




Off-campus company-site visits by school groups		(0)
CM internship program and/or company project support by CM students	4.8%	(1)
Targeted minority recruiting (e.g., NAACP, minority colleges/organizations)		(0)
Partnerships with community organizations	4.8%	(1)
Professional (industry- or function-specific) organizations/conferences	9.5%	(2)
Company's Web site and job postings	4.8%	(1)
School Web sites and their Web posting services	9.5%	(2)
In-house employee referral/alumni referrals	9.5%	(2)
Professional recruiting/ employment agencies	4.8%	(1)
Don't know	14.3%	(3)
Other: -	38.1%	(8)
Other: @ISU	4.8%	(1)
Other: Call Rudy Pusey	4.8%	(1)
Other: Internally	4.8%	(1)
Other: We don't recruit graduate students.	4.8%	(1)

12. Which of the following BEST describes your company's actual timing in 2005 for campus interviews of CM master's degree graduates?





No interviews on Campus	81%	(17)
Interview six or more months prior to graduation/availability		(0)
Interview three or more months prior to graduation/availability		(0)
Interview within weeks of graduation/availability		(0)
Interview on an as-needed basis year-round	4.8%	(1)
Don't Know	9.5%	(2)
Other: -	9.5%	(2)

13. Which of the following BEST describes your company's expected timing in 2006 for campus interviews of CM master's graduates?

No interviews on Campus	71.4%	(15)
Interview six or more months prior to graduation/availability		(0)
Interview three or more months prior to graduation/availability		(0)
Interview within weeks of graduation/availability		(0)

Interview on an as-needed basis year-round	 9.5%	(2)
Don't Know	 14.3%	(3)
Other:	 4.8%	(1)

14. Which of the following best describes your opinion of current economic conditions and their effects on your company's plans for recruiting new professional hires? "New professional hires" includes all categories of new employees in the hiring mix for which a college degree is a minimum requirement. This may include campus hires at undergraduate and graduate/MBA level, as well as experienced, direct from industry hires, some of whom might also have CM or MBA degrees. This does not include company transfers.

The current economy is weak, and this is constraining my company's recruiting plans.	 4.8%	(1)
The current economy is weak, but this is not constraining my company's recruiting plans	 4.8%	(1)
The economy is not weak and my company's recruiting plans are not strained.	 85.7%	(18)
The economy is not weak, but we are still constraining my company's recruiting plans	 4.8%	(1)

15. Please tell us the number of new professional hires your company had in 2005. If your company did not hire or does not expect to hire candidates please indicate "-".

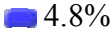

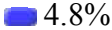
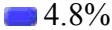
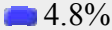
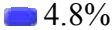
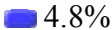


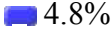
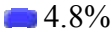
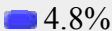
#	Response
10	-
2	1
1	2
1	3
3	4
1	5
1	Don't know not a criteria that is used
1	Interest rates will slow housing down some.
1	~ 5

16. Please estimate of professional hires in 2005. If your company did not hire or does not expect to hire candidates please indicate "-." "New professional hires" includes all categories of new employees in the hiring mix for which a college degree is a minimum requirement. This may include campus hires at undergraduate and graduate/MBA level, as well as experienced, direct from industry hires, some of

whom might also have CM or MBA degrees. This does not include company transfers.

#	Response
14	-
1	1-2
1	3
1	4
1	6
1	7
1	Depends on market
1	~ 5

17. If you did not hire any CM graduate students in 2005, what are the main reasons your company did not hire new CM graduates in 2005? Check all that apply.

CM graduate skills/resources are not critical in my company	 4.8%	(1)
No job openings	 57.1%	(12)
CM entry-level salary demands are too high		(0)
Hiring freeze in our organization		(0)
Company in process of reducing headcount		(0)
Recruiting resources were allocated to experienced hires direct from industry		(0)
Recruiting resources were allocated to new undergraduate hires	 4.8%	(1)
Limited company growth anticipated		(0)
Availability of candidates does not match my timing needs for hires	 4.8%	(1)
Offers made to CM grads were not accepted	 4.8%	(1)
Obtained CM talent by sponsoring current employees in CM programs	 4.8%	(1)
Restricted recruiting budget		(0)
Difficulty in finding and identifying candidates	 4.8%	(1)
Available CM candidates weren't qualified (no yield on interviews or resume screens)		(0)
All positions were filled by CM undergraduates.	 9.5%	(2)
Don't know	 14.3%	(3)
Other: All Union	 4.8%	(1)
Other: did hire	 4.8%	(1)
Other: Looking for engineers, not CM graduates	 4.8%	(1)

Other: We are looking more for field workers rather than office people.	4.8%	(1)
Other: We have all the office people we need. It is pretty lean at the top. Manager has a CM degree	4.8%	(1)
Other: We only hire family	4.8%	(1)

18. When making an offer of employment, which of the following factors are stressed with CM candidates to influence them to accept your job offer? Check all that apply.

Ability to impact results or bottom line	19.0%	(4)
Achieving something that they can personally value	19.0%	(4)
Challenging and/or interesting work	19.0%	(4)
Company image and reputation	23.8%	(5)
Company stability	19.0%	(4)
Having primary responsibility for a project, budget, or people	14.3%	(3)
High ethical standards of the company	33.3%	(7)
Job autonomy	4.8%	(1)
Job security		(0)
Location	14.3%	(3)
Work/life balance	9.5%	(2)
Opportunity for advancement	9.5%	(2)
Opportunity to learn new things	14.3%	(3)
Positive organizational climate	9.5%	(2)
Working with a diverse group of people (culturally, racially, ethnically)	9.5%	(2)
Don't know	23.8%	(5)
Other: -	14.3%	(3)
Other: All Union	4.8%	(1)
Other: Don't hire CM graduates	4.8%	(1)
Other: not really anything just review overall attitude and knowledge	4.8%	(1)

Other: Will be hiring daughter in a couple of years when she graduates with a CM degree. Starting salary around 30K. Insurance, truck, 401k and bonuses	4.8%	(1)
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19. What is your best estimate of the average expected starting annual salary (not including benefits) for new professional hires in 2004 (in \$US). If you didn't hire anyone enter a -

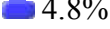
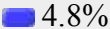


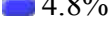
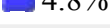

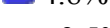

#	Response
13	-
1	38,000
1	40
1	40,000
1	40k
1	55,000
1	60000
1	Depends on schooling and experience 35-45K
1	~ \$50,000

20. Is there a difference in expected starting salary (or benefits) for an undergraduate versus a graduate student in CM? If NO enter NO. If yes, enter the average difference?

#	Response
10	-
1	15000
1	Depends
1	Graduate more by a couple thousand dollars
7	No
1	With equal background experience, possibly 2,000

21. In addition to base salary, which of the following kinds of compensation benefits do you typically extend in a job offer to a new CM graduate hire? Check all that apply.



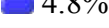

Commissions		(0)
Benefits package	33.3%	(7)
Truck or truck allowance	33.3%	(7)
First-year bonus		(0)
Housing allowance or reimbursements		(0)
Moving allowance	4.8%	(1)
Performance-based bonus	19.0%	(4)
Profit sharing	23.8%	(5)

Signing bonus	 4.8%	(1)
Starting bonus		(0)
Stock options		(0)
Tuition reimbursement	 4.8%	(1)
Year-end bonus	 23.8%	(5)
Other: -	 28.6%	(6)
Other: 401k, Insurance	 4.8%	(1)
Other: Don't Know	 4.8%	(1)
Other: Health insurance	 4.8%	(1)
Other: insurance	 4.8%	(1)
Other: None	 9.5%	(2)

22. What is your best estimate of average first-year TOTAL (Base salary plus other compensation) annual compensation for new CM graduate hires in 2005 (in \$US) If you hired no graduates in 2005, please specify "undergraduate" and give amount. If you didn't hire anyone enter -



#	Response
12	-
1	40-60K
1	45
1	45,000 including benefits package
1	45k+
1	50k
2	60,000
1	85000
1	~ \$75,000

23. From how many schools does your company recruit CM graduates? Please give us your actual for the end of your 2005-recruiting season.






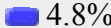
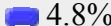


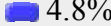
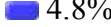
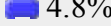
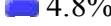
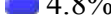
0	 71.4%	(15)
1-5	 23.8%	(5)
6-10	 4.8%	(1)
11-20		(0)
21+		(0)
TOTAL	 100.0%	21

24. From how many schools does your company recruit CM graduates in 2006? (Expected number)

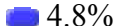




0	 61.9%	(13)
1-5	 33.3%	(7)

6-10	 4.8%	(1)
11-20		(0)
21+		(0)
TOTAL	 100.0%	23

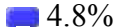
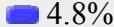
25. For which general job area(s) does your company recruit? Check all that apply.

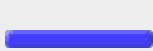

Accounting	 9.5%	(2)
Consulting		(0)
Entrepreneurship	 4.8%	(1)
Finance	 4.8%	(1)
HR/ Organization Mgmt		(0)
Information Technology/MIS	 4.8%	(1)
Management (Superintendents, Project Managers)	 57.1%	(12)
Marketing	 4.8%	(1)
Operations & Logistics		(0)
Don't know	 4.8%	(1)
Other: -	 14.3%	(3)
Other: All Union	 4.8%	(1)
Other: Engineers	 4.8%	(1)
Other: field operations	 4.8%	(1)
Other: laborers, usually promote and train within	 4.8%	(1)
Other: N/A	 4.8%	(1)
Other: we fill them when there is a need	 4.8%	(1)

26. Is your company a global, national, regional, or local (intrastate) business?


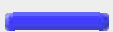
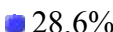




Global	 4.8%	(1)
National	 9.5%	(2)
Regional	 28.6%	(6)
Local	 57.1%	(12)
TOTAL	 100.0%	21

27. In which US region is your company headquartered?



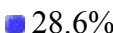



Northeast (CT, MA, ME, NH, NJ, NY, RI, VT)	 4.8%	(1)
Middle Atlantic (DC, DE, MD, PA, VA, WV)	 4.8%	(1)
Midwest (IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI)		(0)
South (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN)		(0)

Southwest (AZ, CO, NM, OK, TX)		(0)
West (AK, CA, HI, ID, MT, NV, OR, UT, WA, WY)	 90.4%	(19)
TOTAL	 100.0%	21

28. Please indicate the approximate gross annual revenues for 2005 of your parent company (including all plants, branches, divisions, and subsidiaries).

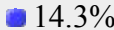



Under \$1 million		(0)
\$1-\$3 million		(0)
\$3-\$5 million	 23.8%	(5)
\$5-\$9.9 million	 23.8%	(5)
\$10-\$24.9 million	 28.6%	(6)
\$25-\$49.9 million	 9.5%	(2)
\$50-\$99.9 million	 9.5%	(2)
\$50-\$99.9 million		(0)
\$500-\$999.9 million		(0)
\$1-\$4.9 billion	 4.8%	(1)
\$5-\$9.9 billion		(0)
\$10 billion or more		(0)
TOTAL	 100.0%	21

29. Please indicate the approximate number of units completed in 2005 of your parent company (including all plants, branches, divisions, and subsidiaries).

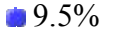
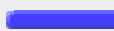
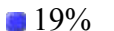


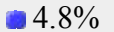

1-11	 33.3%	(7)
12-25	 19.0%	(4)
26-50	 28.6%	(6)
51-100	 14.3%	(3)
101-250		(0)
251-500		(0)
500-1,000	 4.8%	(1)
1,001-2,000		(0)
2,001-5,000		(0)
5,000-10,000		(0)
10,000-24,999		(0)
25,000-50,000		(0)
51,000-100,000		(0)
100,000+		(0)
TOTAL	 100.0%	21

30. Is your primary business commercial, residential, industrial or civil/heavy highway?

Commercial	 42.9%	(9)
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Residential	 14.3%	(3)
Industrial	 19.0%	(4)
Civil/heavy highway	 23.8%	(5)
TOTAL	 100.0%	21

31. How many employees are employed in the parent company for which you work?

1-11	 9.5%	(2)
12-25	 28.6%	(6)
26-50	 19%	(4)
51-100	 14.3%	(3)
101-250	 23.8%	(5)
251-500		(0)
500-1,000		(0)
1,001-2,000		(0)
2,001-5,000		(0)
5,001-10,000	 4.8%	(1)
10,001-24,999		(0)
25,000-50,000		(0)
51,000-100,000		(0)
100,000+		(0)
TOTAL	 100.0%	21

32. Please use the space below to share any additional comments that you believe would be valuable to CM schools, to other recruiters, or other graduate students when we design next year's survey.

#	Response
1 -	
1	A four-year degree will help a person become more of a project manager than a superintendent. A super will be more hands-on while a manager is more office and business work.
1	Beta test the survey, it has a few glitches. We value hands on construction experience far more than leadership experience in other fields, such as retail sales, manufacturing, waiting tables etc. Even if the pay is not as good, we look for people who worked their way through college in the construction industry so they already have a practical foundation and know they can handle the pressures common to the industry.
1	Common sense and practicality, if they've got a "horse sense" about them, I lean towards that. Being raised on a farm makes a huge difference. Honesty and integrity is part of what we look at.
1	Estimating/project management/budget control/Scheduling
1	Hiring is based upon an individual's desire to achieve and accomplish personal and professional goals and be flexible in doing so.

- 1 Include childhood development classes for the guys out in the field (Ha Ha)
- 1 No one has ever contacted us from any school to recruit, placement or to support.
- 1 Schools- if they could start gearing up for field efforts-field operations. Curriculum that would spark interest for a superintendent rather than project managers.
- 1 They need hands-on experience 1-year part time ON THE FIELD, to understand the projects.
- 1 We don't recruit CM graduate students, however, we do recruit CM undergraduate students quite heavily. More emphasis on heavy civil construction would be helpful so that students are aware of the opportunities in this area. Also, resume writing and interviewing skills would help all of the students as well as the companies that come to campus to recruit. Finally, let me say thank you for allowing me to participate in the survey. I hope that my answers were helpful.