Developing a Decision-Making Framework for Market Entry in the Sheet Metal Construction Industry

by

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ABSTRACT

Entering a new market in the construction industry is a complex task. Although many contractors have experienced the benefits of expanding their market offerings, many more have had unsuccessful experiences causing hardship for the entire organization. Standardized decision-making processes can help to increase the likelihood of success, but few specialty contractors have taken the time to develop a formal procedure. According to this research, only 6 percent of survey respondents and 7 percent of case study participants from the sheet metal industry have a formal decision process. Five sources of data (existing literature, industry survey, semi-structured interviews, factor prioritization workshops, and expert panel discussions) are consulted to understand the current market entry decision-making practices and needs of the sheet metal industry. The data help to accomplish three study objectives: (1) determine the current processes and best practices used for market entry decision-making in the sheet metal industry, (2) identify motivations leading to market entry by sheet metal contractors, and (3) develop a standardized decision process that improves market entry decision outcomes. Grounded in a firm understanding of industry practices, a three-phased decision-making framework is created to provide a structured approach to guide contractors to an informed decision. Four industry leaders with over 175 years of experience in construction reviewed and applied every step of the framework to ensure it is practical and easy to use for contractors.

To my family whose love has been unwavering

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1. INTRODUCTION

1.1 Market Entry in the Sheet Metal Industry

Deciding whether or not to enter a new market is a complex task. On the positive side, market entry can improve long-term profitability and relationships with customers, provide an opportunity to challenge and promote key employees, and mitigate the risk of a market downturn. Unfortunately, only one in five entries is successful (Horn et al. 2005), and a failed market entry can result in hardship for the entire company.

The construction industry in particular presents many challenges to successfully growing and diversifying a company. An ever-changing market environment causes uncertainty and has a complex influence on strategic decision-making (Miller 1993). Learning from one organization's own experience is nearly impossible due to the infrequency of market entry decisions and because feedback from each decision is slow and difficult to understand (Betts and Ofori 1992). Also, there is little market etnry guidance available to the construction industry (Price 2003).

Research has shown deliberate, methodical processes improve the likelihood of successful decision outcomes (Brinckmann et al. 2010, Dean and Sharfman 1996, Papadakis and Barwise 1998). Additionally, considering a diverse set of analogous decisions leads to better outcomes than focusing on the few, more familiar, experiences of a single company (Lovallo et al. 2012). However, the extent to which these best practices are used in the construction industry is unknown.

Resources are limited in small to medium sized companies, and according to the U.S. Census Bureau (2013), 99 percent of construction companies employ fewer than 100 people. After managing the day-to-day activities, it can be difficult for these construction

contracting firms to find time for strategic thinking and planning. For this reason, the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), a trade association for union sheet metal contractors, became very interested in investing their time and efforts to help their members with the strategic task of market entry decision-making.

This research reviews market entry decisions made specifically by SMACNA members, union sheet metal contractors working primarily in the U.S. and Canada. With the sponsorship and help from SMACNA's research entity, the New Horizons Foundation, this exploratory study investigates, for the first time, the current methods used in the sheet metal industry during market entry decisions. Then, a unique intervention is created to improve the overall success rate of these decisions and fit the specific needs of SMACNA members. The remainder of this dissertation describes how this novel topic is taken from the exploration phase all the way through application by industry professionals.

1.2 Objectives, Research Questions, and Data Sources

The main objective of this research is to create a practical and easy to use framework for market entry decisions made by union sheet metal contractors in the U.S. and Canada. To effectively meet this objective, three sub-objectives will guide the research design:

1. Determine the current processes and best practices used for market entry decision-making in the sheet metal industry,
2. Identify motivations leading to market entry by sheet metal contractors, and
3. Develop a standardized decision process that improves market entry decision outcomes.

The sub-objectives are further broken down into eight research questions that are directly answerable through either quantitative or qualitative data analysis. To answer the research questions, this study draws on five sources of data: existing literature, industry survey, semi-structured interviews, factor prioritization workshops, and expert panel discussions. The research questions and data sources used to answer each question are shown in Table 1.

Table 1: Research Questions with Data Collection Sources Organized by Objective

Obj	RQ#	Research question	Data source
1	RQ 1	Who is typically involved in making market entry decisions?	Survey, Interview, Literature
	RQ 2	What are the major factors sheet metal contractors consider before entering a new market?	Interview, Workshops, Literature
	RQ 3	What are common timeframes for making market entry decisions?	Interview, Expert panel, Literature
	RQ 4	How do sheet metal contractors typically make a market entry decision? What is the process?	Interview, Expert panel, Literature
2	RQ 5	Why do sheet metal contractors grow through market entry?	Interview, Expert panel, Literature
	RQ 6	What are the most common types of market entry attempted by sheet metal contractors?	Survey, Interview, Literature
3	RQ 7	How often are sheet metal contractors successful in entering a new market?	Interview, Literature
	RQ 8	Does a standard framework improve the market entry decision-making process?	Interview, Expert panel, Literature

Answering each research question using multiple data sources allows for the triangulation of results. Triangulation is the use of multiple methods or data sources to study a single phenomenon (Denzin 1970). Similar findings from multiple data sources increase the credibility of the results. Table 2 shows the five sources of data collection for this research and the type of data from each source, either quantitative, qualitative, or both.

Table 2: Data Sources and the Nature of Data Collected

Data source	Qualitative	Quantitative
Existing literature	X	X
Industry survey	X	X
Semi-structured interviews	X	X
Factor prioritization workshops		X
Expert panel discussions	X	

1.2.1 Research Scope

An adapted version of the Ansoff Matrix (Ansoff 1957), shown in Figure 1, is used to describe the four types of strategic growth: market penetration, market development, product development, and diversification. This research focuses on market development and product development. Market penetration, expanding the type of work a company currently does in its existing customer base, was excluded because this growth type does not involve entry into a new market. Diversification, providing a new product or service to an unfamiliar type of customer, is a risky undertaking. Instead of taking on full diversification, this study recommends a stepwise approach, taking on full market development (offering current services to a new type of customer) or full product development (offering a new service to current customers). Then, when the company has proven to be successful in the first market entry step, it may proceed with the second type of market entry.

To focus the research on the most impactful types of market entry decisions, the literature was reviewed to identify historically detrimental markets in the construction industry. The most cited market entry reasons leading to contractor failure are expanding geographically and taking on a new type of construction, including new market sectors and adding a new trade (see Schleifer 1990; Schaufelberger 2003; Davidson and Maguire 2003; Rice and Heimbach 2014; and Surety Information Office 2007).

		Where we work/ Who we work with	
		Same	**New**
What we do	**Same**	**Market Penetration** (not applicable)	**Market Development** o Geographical expansion o Size of projects o Type of projects o Type of customers
	New	**Product Development** o Add a trade o Add HVAC service o Technology o Process	**Diversification** (not applicable)

Figure 1: Research Scoping Matrix Showing Focus on Market Development and Product Development (Adapted from Ansoff 1957)

These findings were discussed with an expert panel of three construction industry members, each with 35+ years of experience. The experts agreed with the findings. Moreover, they suggested splitting "adding a trade" and "taking on a new market sector" into two decision types because the addition of a new trade requires SMACNA members to develop relationships with a union with whom they have not coordinated with in the past. Experience taught the experts that the new union relationship can have dynamic effects on the market entry. Also, the experts suggested an additional type of market entry be studied, "adding HVAC service", which is specific to sheet metal contractors. Service is considered significantly different from adding a construction trade because the nature of HVAC service is more dynamic than traditional construction trades. With construction trades, contractors can develop a plan while preparing a bid for the project. Service technicians, on the other hand, must be ready to address a customer's request that could come at anytime.

After making these additions suggested by the experts, the research was focused on four specific types of market entry: (1) geographical expansion, (2) new market sector, (3) adding a trade, and (4) adding HVAC service. As the research began, the New Horizons Foundation expressed an interest in also understanding how adding a new process, such as pre-sectioning and prefabrication, could be improved using the decision-making framework, so a fifth decision type was added at that time.

1.2.2 Existing Literature

The literature review involved a keyword search of seven relevant databases (Compendex, EBSCOhost, Google Scholar, Inspec, National Technical Information Service, ProQuest, and Web of Science). The search found eight existing market entry decision aids for the construction industry. The decision factors, decision makers, timeframes, and processes suggested by these aids have been extracted from the literature and used in subsequent data collection and analysis efforts. All eight existing decision aids were developed specifically for international market entry. No aids for domestic market entry were uncovered in the literature.

1.2.3 Industry Survey

An industry survey sent to all SMACNA members was administered as part of the preliminary research effort. The purpose of the five-question survey was to gauge union sheet metal contractors' experience with strategic planning and market entry activities. The survey also collected preliminary information about the types of market entry decisions being made in the industry and the personnel and advisors involved in making these market entry choices. Of the 93 respondents, currently only 6 percent have a formal, written process for making market entry decisions. This was a major motivator

of this research with the goal of creating such a process. More details about the survey can be found in section *4.5.1 Industry Survey*.

1.2.4 Semi-Structured Interviews

A semi-structured interview approach provided both qualitative and quantitative data from 30 market entry decisions by sheet metal contractors. A standard protocol was used to maintain consistency over the interview process. Twenty-two questions were used as a guide to the interviewer to ensure that a consistent set of information is being gathered. Data was gathered from executives of sheet metal contracting firms for thirty different experiences with market entry using this semi-structured interview approach. Details about the interviews and their findings are the topic of **CHAPTER 2**.

1.2.5 Factor Prioritization Workshops

Workshops used expert knowledge to prioritize the decision factors from the literature and semi-structured interviews. The workshops, attended by a total of over 130 industry professionals from the general construction and sheet metal industries, asked participants to consider and rank decision factors for a given scenario. Participants first rank the factors individually, then in small groups. The group rankings were scored and combined into a prioritized list for the entire session. Scores were tallied in real time giving participants the opportunity to review the final list and voice any comments or concerns. As well as a data collection mechanism, workshops served a dual purpose, also providing an analysis method. More about the analysis capability is discussed in the next section,; full details for the workshops can be found in **CHAPTER 3**.

1.2.6 Expert Panel Discussions

Panel discussions were used to collect data on targeted topics. Three types of expert panels were used. The first panel, the local expert sounding board, consisted of three individuals, each with over 35 years of experience in the construction industry. These longtime servants of the industry provided input based on industry knowledge and experience, and reviewed findings from other data collection methods. The second panel, the project coordination team, provided vision and direction. This group of three researchers and three leaders from the New Horizons Foundation, ensured the research effort stayed on track to fit the needs of the Foundation, SMACNA, and the sheet metal industry. The third panel, the New Horizons Foundation board consisting of 15 to 20 executives of sheet metal construction companies, met annually to review the research progress, provide insight from industry experience, and help plan the upcoming work to align with the sheet metal industry's most pressing needs.

1.3 Analysis Methods

Analyses of data are completed in three main phases: a multiple case study method, factor prioritization workshops, and framework development. Factor prioritization workshops appear both as an analysis type and in the previous section as a data collection method because the workshop structure was designed to serve both purposes. Table 3 summarizes the research methods and main findings of each phase, and gives the chapter location for more details. Additionally, the following subsections briefly describe each analysis phase.

Table 3: Research Phases and Methods with Main Findings

Phase	Research Methods	Main Findings	Chapter
Multiple case study method	• Develop case study protocol • Collect semi-structured interviews • Narrative analysis • Cross-case analysis	1. Identification of the key decision factors sheet metal contractors consider in market entry decisions 2. Documentation of current decision-making practices and process alignment 3. Discovery of patterns leading to decision success	2
Factor prioritization workshops	• Collect decision factors from literature and interviews • Conduct individual and group prioritization assessment • Compare results from four workshops	4. Prioritization of decision factors in order of importance to market entry success 5. Identification of the *essential eight* factors deemed to be important regardless of the type of market entry 6. Development of a method for synthesizing industry knowledge	3
Framework development	• Choose high-level framework from literature • Tailor to market entry in the sheet metal industry using research findings • Application through ex-post assessment of market entry decisions	7. Development of a standard decision-making framework for market entry that is grounded in current industry practices and deeply rooted in decision-making theory to ensure common biases are avoided and the most important factors are considered 8. Industry application of the framework to ensure it is practical useful for the intended audience	4

1.3.1 Multiple Case Study Collection

The multiple case study collection phase consists of a review of the literature and semi-structured interviews to collect data from 30 market entry decisions. The content from each interview is developed into a narrative case study and reviewed by the interviewee as a validity check. Once reviewed, each narrative is assessed for internal alignment of the decision process. Next, eight codes are used to identify content from each case

pertaining to: reasons for entry, who were the decision makers, decision factors considered, decision process, characteristics of the leader, measures of success, and lessons learned. Themes within each code are identified and patterns of success revealed. The case study methodology and findings are fully explained in **CHAPTER 2**.

1.3.2 Prioritized Factor Analysis

Factor prioritization workshops served as both a data collection and data analysis exercise. A workshop structure is used to prioritize the decision factors identified in the literature and multiple case study collection phase using experiential knowledge from over 130 SMACNA members. Participants of each workshop are provided a market entry decision scenario and a list of 23 relatively independent factors to consider. First, participants are asked to identify their opinion of the top 10 factors in order of importance to decision success. Next, the participants are organized into small groups of five to eight individuals and are asked to provide a group opinion of the top 10 factors. Group results are scored and combined to generate the workshop's top 10 decision factors list. Four workshops, each with a different decision scenario, are completed and compared. The details of the workshop method and results are the topic of **CHAPTER 3**.

1.3.3 Framework Development

A market entry decision-making framework is developed based on data from all five sources (literature review, industry survey, semi-structured interviews, factor prioritization workshops, and expert panel discussions). The framework consists of three phases: definition, analysis, and planning. Each phase is broken down into a series of steps that are developed specifically for sheet metal contractors. A total of 10 steps make up the framework. Each step is designed to overcome decision-making biases identified

in the literature or issues identified in the case studies. Details of the framework development can be found in **CHAPTER 4**.

1.4 Dissertation Structure

The next three chapters of this dissertation are organized into complete academic journal paper format. Chapters 2, 3, and 4 each represent an independent article and, therefore, include an abstract, introduction, review of the relevant literature, methodology, analysis, discussion of results, conclusion, and references specific to the content of that article.

Chapter 2 describes the multiple case study analysis. The case studies described in this article provide an understanding of how and why sheet metal contractors currently make decisions regarding market entry. This article was submitted for publication in an ASCE peer-reviewed, archival journal.

Chapter 3 presents the consensus-building workshop structure used to prioritize decision factors. The decision factors identified by a review of the literature and in the case studies from Chapter 2 are processed by experienced industry members. A total of four workshops were completed, each for a unique type of market entry decision. This article was submitted for publication in an ASCE peer-reviewed, archival journal.

Chapter 4 outlines the market entry decision-making framework that was created based on the results from Chapter 2 and Chapter 3. The framework contains a 10-step method for sheet metal contractors who are considering entering an unfamiliar market. This article was submitted for publication in an ASCE peer-reviewed, archival journal.

Following the three journal articles in Chapters 2, 3, and 4, the final chapter of this dissertation includes overall conclusions and recommendations for future work. The major findings of each article are summarized and discussed.

2. CURRENT STATE OF MARKET ENTRY DECISION-MAKING IN THE SHEET METAL INDUSTRY: A MULTIPLE CASE STUDY

2.1 Abstract

Small to medium sized specialty contractors have limited time and mental reserve for long-term planning after dealing with day-to-day challenges like resource management, fierce competition and the dynamic nature of employment in the construction industry. Currently, little is known about how contractors use these limited reserves to make decisions about their future. This study uses a multiple case study analysis to expand the understanding of *how* and *why* contractors make the long-term planning decision to enter a new market. Semi-structured interviews with experienced members of the sheet metal construction industry supplemented by collection of relevant documentation allowed an in-depth look into 30 market entry decisions. The study of these cases contribute to the body of knowledge by identifying the current decision-making practices and factors considered by sheet metal contractors when entering a new market. Also, patterns leading to successful and unsuccessful outcomes are uncovered. The cases indicate that strategic fit, clear reasons for entry, and support from top leaders in the company are the three biggest indicators of decision success. Choosing the wrong market champion was the most cited reason for unsuccessful market entry. The identification of decision elements leading to market entry decision success provides a launching pad for improving the outcomes of market entry for sheet metal contractors.

2.2 Market Entry Decisions in the Sheet Metal Industry

Expansion into new construction markets is complex, but, if done effectively, can help to weather a market downturn and increase long-term profitability (Choi and Russell 2005;

Kangari and Riggs 1988). However, challenges associated with these strategic decisions have led to the failure of countless construction firms (Schleifer 1990). Mastering market entry based on only one organization's own experiences is nearly impossible due to the infrequency of these strategic moves and the rate of change in the construction environment (Betts and Ofori 1992). Curiously, little is found in the construction literature to guide contractors toward more successful expansion through entering new markets, especially new domestic markets. More generally, there is a low level of strategic planning and measurement tools for long-term strategic performance in the construction literature compared to other industries (Price 2003).

Ninety-nine percent of construction contractors in the U.S. employ fewer than 100 employees (U.S. Census Bureau 2013). Small to medium sized specialty contractors, such as these, have to balance their limited energies dealing with the resource management, fierce competition and the dynamic nature of employment in the construction industry, leaving limited time and mental reserve for long-term planning (Soetanto and Dainty 2009). For this reason, the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) is interested in understanding the current practice of market entry decision-making and building a streamlined decision-making process for its members, union sheet metal contractors primarily in the U.S. and Canada.

This research explores the existing literature on decision aids as it pertains to specialty contractors. Then, in partnership with SMACNA's research unit, New Horizons Foundation, a multiple case study approach is used to understand current industry practice when considering expansion into new markets. From this understanding and pattern identification, elements of decision success are identified.

2.3 Existing Decision Aids for the Construction Industry

Eight existing market entry decision aids were found during a thorough search of the construction industry literature. All eight aids are intended for use in international market entry with no mention of their applicability to entering a new market domestically or entering a new trade or service in the current geographical region. Although the modeling techniques differ from study to study, each decision aid identifies and analyzes decision factors from either the literature alone, or from a literature review supplemented by input from industry professionals. Upon analysis, a decision is made based on the measures of success determined by the study's authors.

Each of the existing aids uses a modeling method to chart the interaction and impact of decision variables. Han and Diekmann (2001) uses cross-impact analysis to map the interactions between project risk variables. Decisions are then made based primarily on expected profitability, but also on other benefits of market entry. Gunhan and Arditi (2005) combines the tiered organization of the analytical hierarchy process with expert weightings synthesized using the Delphi method. This method allows decision makers to balance a variety of important success metrics. Cheng et al. (2011) uses fuzzy relation analysis to assess the market risk, giving a prospective country a risk score. Then, cumulative prospect theory is used to determine decision maker preferences for projects. Tang et al. (2012) utilizes an entropy approach to weight critical success factors through a questionnaire. Unlike the others, Kim et al. (2013) assessed entry of a new market as an investment decision rather than a risk assessment. Using a real options approach, decisions are made based on investment value.

Interestingly, authors Ozorhon, Dikmen, and Birgonul have studied international market entry decisions of Turkish contractors using a variety of methods. Dikmen and Birgonul (2004) develops a neural network to determine the attractiveness of an international project and a company's competitiveness. An analytical hierarchy process is used rank international projects based on the project's risk and opportunity in Dikmen and Birgonul (2006). Subsequently, Ozorhon et al. (2006) used the same database of projects and decision factors to predict project outcomes using a case-based reasoning model. Many approaches used by the same authors highlights the fact that a variety of methods exist to assess market entry decisions, each from a different perspective.

The literature adequately shows many approaches academic scholars use to assess market entry in the construction industry. However, there is a lack of discussion about the approaches actually used by contractors in practice when making market entry decisions. Additionally, the contractors' motivation for entry into a market does not seem to impact the existing decision methods. This study investigates this gap in the literature by using a qualitative approach to ask contractors "how" and "why" they enter new markets. Thirty real experiences from industry are used to determine which elements of the decision-making experiences have consistently led to success. The current approach also addresses domestic market entry for a variety of decision types –geographical expansion, adding a trade or service, or taking on a new market sector or new process. These decision types are not addressed by the existing decision aids.

2.4 Scope and Research Design

The purpose of this study is to understand the current state of market entry decision-making in the sheet metal construction industry. Determining the processes used to make

these decisions, the motivations for taking on market entry risks, and the patterns that lead to successful outcomes will provide a stepping stone for future research to develop a guide to successful market entry. Building on systems and structures already present in the industry increases the likelihood that the tool will be practicable and understandable by sheet metal contractors.

The scope of this research was defined by choosing five types of market entry decision: geographical expansion, adding a trade, adding HVAC service, implementing a new production process, and entering a new market sector. These decision types were chosen based on a review of the literature and expert panel discussions. First, the literature was reviewed for the most common market entry reasons for contractor failure (see Schleifer 1990; Schaufelberger 2003; Davidson and Maguire 2003; Rice and Heimbach 2014; and Surety Information Office 2007 for sources of contractor failure). Geographical expansion and new project type were the most cited of these reasons. A panel of three sheet metal industry experts each with 35+ years of construction experience reviewed this list of decision types for applicability to SMACNA members specifically. The experts suggested "new project type" to be broken up into three more customized categories: new market sector (e.g., commercial, institutional), adding a trade (e.g., electrical, plumbing), and adding HVAC service. Though the literature groups these decisions types into one category, the sheet metal industry experts have experienced significant differences between these types in practice. A new market sector differs from adding a trade because the union contractors that make up SMACNA must develop new relationships with unfamiliar union halls when adding a trade, which can have complex effects on the decision. Adding HVAC service is different because of the nature of the

business: unlike the construction trades that can be planned out in advance, service technicians need to be prepared at all times to respond to a customer's request for service. The resulting list of decision types (geographical expansion, new market sector, adding a trade, and adding HVAC service) provided the initial scope for the research. After presenting this scope to the New Horizons Foundation Board, a group of 15 to 20 executives and leaders of sheet metal contracting firms, "new process" was added to the scope. Processes are particularly important in this field because sheet metal contractors consider their approach to the work to be their main product to customers and new processes such as pre-sectioning and prefabrication are currently revolutionizing the industry.

The unit of analysis for this study was designed to be the market entry decision. Choosing this level of granularity allows for each type of decision to be evaluated separately. For example, geographical expansion decisions can be separated from decisions to add a new trade. Also, this unit of analysis recognizes that a single organization or individual does not always use the same process for every market entry decision. The process is adapted based on the specific circumstances, and the unit of analysis at the decision level allows the adaptations to be considered. One limitation of the decision level unit of analysis is sheet metal contractors do not always keep record of profits, the most ubiquitous measure of market entry success, at the decision level. Although this presented a challenge during the research, it was also seen as an opportunity to understand how, without definitive measurement, company leaders gauge decision success.

Three main research questions guided the analysis. These questions were investigated using the multiple case study approach described in the following sections. The first question is, "How do sheet metal contractors typically make a market entry decision?" The intention of this question is to glean insight into the process company leaders in the sheet metal industry use to determine whether or not to enter a new market. This question is answered by conducting an internal alignment analysis for each case, which is discussed in sections 2.6 and 2.7. The second question is, "Why do sheet metal contractors grow through market entry?" The literature and experiential evidence from experts in the industry suggest that entering a new market is a sizable risk. This second research question was intended to investigate the motivation behind taking on such a risk and was addressed by using "motivation" as a categorical code during cross-case analysis discussed in section 2.8. The third and last question is "Why are some decisions more successful than others?" This last question is aimed at identifying patterns in the data that point to higher levels of decision success, which are discussed in section 2.9.

2.5 Multiple Case Method

A multiple case study approach was chosen to investigate the three *how* and *why* research questions. By definition, a case study explores a contemporary phenomenon in its real-world context when the phenomenon/context boundary is not clear (Yin 2013). The case study approach allowed the market entry decisions to remain linked to their context, maintaining the uniqueness of each situation. Comparing the decision context, process, and outcome from multiple cases allowed decision-making elements impacting success to be detected. This provides an understanding about the current practice of market entry decision-making and a springboard for improving future decisions. While a single case

can give a detailed description of a market entry, a study of multiple cases was chosen to provide evidence of replication and a more robust grounding in the variety of contextual data (Eisenhardt and Graebner 2007). In total, 30 market entry decisions were analyzed as part of this research effort.

2.5.1 Choosing Cases to Study

The cases in this study were sampled from Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) member experiences. SMANCA's membership is comprised of contractor firms "signatory to a collective bargaining agreement that install, fabricate, manufacture or service [heating, ventilation, and air conditioning]; industrial duct systems; architectural sheet metal applications; or sheet metal products" (SMACNA 2016). Choosing to limit the population to SMACNA members provides consistency in some of the contextual elements such as utilization of union labor and performance of sheet metal trades. However, the ability to generalize beyond the union sheet metal population becomes compromised.

Participants were solicited at SMANCA board meetings, annual conventions, chapter meetings, and through the membership email list. Voluntary enrollment in the study meant each of the participants was willing to share the details of a market entry experience with which he or she was closely involved. Because the unit of analysis was 'the decision', participants with experience in multiple market entry decisions were allowed to provide more than one case. In total 15 participants made up of 10 company presidents, two company partners, two senior vice presidents and one senior project manager provided 30 cases for this research.

Participants were encouraged to provide both successful and unsuccessful experiences. Studying a variety of decision outcomes avoids what Taylor et al. (2011) describe as the "missing witness". Likening the collection of evidence in case study research to that in a legal trail, a missing witness raises the presumption that the testimony would have been unfavorable (Taylor et al. 2011). In this research, a missing witness would mean determining characteristics of successful decisions without consulting unsuccessful decisions to ensure the same characteristics are absent. The cases also covered a variety of types of market entry decisions including: geographical expansion, adding a trade, new market sectors, new processes, and adding HVAC service. Consulting all "witnesses" helped formulate a more robust theory of successful market entry decision-making by cross-referencing the context and process used in unsuccessful decisions.

2.5.2 Collecting Case Study Data

Common criticisms of case studies concern reliability, bias, and validity. Thoughtful development and use of a case study protocol increases reliability and reduces bias by providing a consistent guide for data collection and clear direction for anyone wanting to repeat the procedure (Yin 2013). The protocol designed for this research included procedural steps for soliciting participants from the target population, data collection and recording, information storage, and database maintenance. Additionally, the protocol discussed important topics such as the case study background and objectives, target audience, likely sources of information, anticipated issues/biases and strategies to resolve them, and a plan for reporting the findings.

In addition to the case study protocol, researchers regularly reviewed and updated the case study database. The database was set up as a matrix with cross-sectional codes (explained in more detail in the following section), such as decision makers, timelines, leadership characteristics and measures of success, as column headings with cases along the rows. The matrix style database allowed researchers to review (1) the consistency (or lack there of) within the cross-sectional coding structure and (2) the alignment within each decision.

The data were gathered primarily through semi-structured interviews with decision makers and were checked for alignment with field notes, meeting minute documentation, and press releases about the decision to ensure construct validity. Twenty-two questions, shown in Table 4, were used to structure the interviews. The questions were not always directly asked of each participant, but instead were provided to the interviewer as a guide to ensure similar information was gathered during each interview. After the interview, data were formed into a narrative and validity was checked once again by allowing the participant to review the narrative. The participant was instructed to check the document for both factual content and for appropriateness of tone. This ensured that the interpretation of the data represented the intention and understanding of the participant.

Through use of the case study protocol, data was collected from 30 decisions and was organized into the case study database and narratives. The following section discusses the analysis performed using the case study data. First, researchers analyzed alignment within each case. Next, cross-case comparisons identified themes within each of the coded categories. Finally, patterns were identified between coded categories,

especially patterns leading to either successful or unsuccessful outcomes. The narratives from the 30 cases were retained for use in a market entry decision framework intended to help SMACNA members increase their success rate for these types of decisions. The framework is being developed and tested as part of an ongoing research study and will be discussed in detail in Chapter 4.

Table 4: Questions Used to Structure Semi-Structured Interviews

1.	Describe a previous business decision.
2.	When did this decision occur?
3.	What prompted the decision?
4.	Who was involved in making the decision?
5.	When did you first engage each decision-maker?
6.	What were the alternatives that were considered?
7.	What was the process of coming to a decision?
8.	Did the company have a formal decision process at the time? Does it now?
9.	Was this a routine decision (part of an annual planning meeting) or a unique decision based on new market opportunities, for example?
10.	What were the key pieces of information needed to make the decision?
11.	What risk factors were considered? What opportunities offset the risks?
12.	Was a financial analysis completed? What accounting data was used?
13.	How was the need of the new market determined?
14.	Who was the leader of the new effort? What was this person's previous experience? What made them especially qualified to take on the responsibilities?
15.	How did the new market opportunity fit into the vision of the company at the time of this decision? Do you have a strategic plan? If yes, was it consulted in this decision?
16.	Who did you consider to be your competition? How did you assess your competitive advantage?
17.	What was the condition of major resources at the time of this decision (investment capital, labor availability, labor acceptance, etc.)?
18.	When was the plan implemented? How long was the entire decision-making process?
19.	On a scale of 1 to 5 how successful would you rate this decision (l being 'fell far short of goals' and 5 being 'far exceeded goals')? On what terms (metrics), rank each from 1 to 5?
20.	In your opinion, what were the key reasons for success or failure?
21.	Was a baseline for success determined before implementing the decision? Was there an exit strategy?
22.	How would you improve your decision-making process if you were to make that decision again today?

2.6 Within-Case Alignment Evaluation Method

Five types of market entry were considered by the 30 reviewed cases. Two of the market entry types target an unfamiliar customer: geographical expansion and new market sector. Three market entry types involve adding a new product or service: adding a trade, providing a new process, and adding HVAC service. Table 5 shows the number of cases for each category.

Table 5: Number of Cases Collected per Category

Category	Number of cases
Geographical expansion	8
New market sector	4
Adding a trade	11
Providing a new process	4
Adding HVAC service	3
TOTAL	**30**

Alignment analysis entailed creation of a flowchart for each case between four of the database column codes: motivation, decision process, factors considered, and measures of success. The purpose was to assess the logic between the initial motivating factors for market entry, the steps taken to come to a market entry decision, and the basis on which participants measure success after the decision. Figure 2 shows a schematic followed by each of the 30 flowcharts. Alignment analysis helped the research in two profound ways: 1) by providing a visual, contiguous process for each case that can be compared and analyzed, and 2) by requiring the researcher to deeply understand each case by empathetic processing of the logic used in each situation.

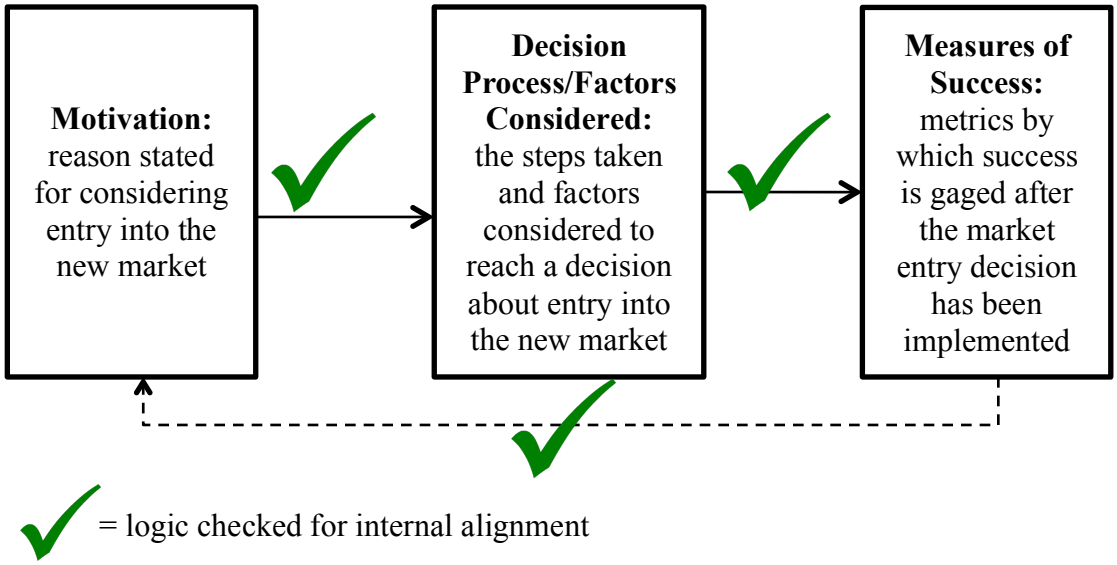

Figure 2: Generic Decision Flowchart Showing Logical Connections Checked for Internal Alignment

2.7 Within-Case Alignment Findings

All thirty decisions were evaluated for alignment from the initial motivation through implementation. It is important to note, successfulness of the decision was not taken into consideration when assessing alignment. A completely aligned decision might ultimately be unsuccessful, and an unaligned decision might end up being highly successful.

Half (15) of the decisions were found to be in alignment throughout the entire process. The decisions that were not in alignment fell into two categories: 1) measures of success were not related to the initial goals, and 2) motivations and reasons for entry were not well defined before making the market entry decision.

2.7.1 Category 1 Misalignment: Measures of Success Not Related to Goals

Measures of success in eight decisions did not logically align with the initial goals of entering the market. In these cases, the intention for entering the market was clearly articulated. However, when the decision makers were later asked about how they evaluate

the success of the decision, the criteria did not measure the original objectives. For example, one participant discussed the decision to add plumbing to the company's list of services. Plumbing was being considered for two reasons: (1) to increase cash flow by elevating the company to a second tier subcontractor versus a third tier subcontractor, and (2) to give the participant more control over the construction schedule and coordination of crew members. During the interview, the participant described the decision as being successful because the company was still pursuing plumbing contracts and increasing their overall sales volume. The company did, in fact, increase their cash flow rate, but when asked about their control over project schedule, unexpected issues surfaced. The participant struggled to motivate the plumbing crews to work quickly, which was a cultural difference from the sheet metal crews. Increased management had to be sent to the plumbing projects to keep crews moving, and there were still issues with meeting milestone dates. Conflicts between trades actually increased, rather than decreased, and schedule control was not improved. Although this was one of the original motivations for entering the market, the schedule issues were ignored when evaluating the successfulness of the decision. This example and the other cases misaligned in their goals and success measures suggest there is a tendency toward optimism and justification when retroactively evaluating the performance of the market entry decision in the sheet metal industry.

2.7.2 Category 2 Misalignment: Unclear Motivations and Reasons for Entry

A second alignment issue was found in seven of the studied decisions. These participants never established clear intentions and goals. Assessment of success in these cases considered the ability of the company to make a profit in the new market and the ability

of the company to continue pursuing work in the new market. These measures were only established after implementing the market entry decision. Interestingly, none of the participants hesitated when asked if his or her decision was successful. Although the goals of the effort were never articulated, the decision maker had an idea of what it meant to be successful. These seven decisions that did not establish clear goals did have two characteristics in common. First, zero cases in this group had strong support from the top leader(s) of the company. For context, 66 percent of all of the decisions studied had strong support from the top company leader. This may mean that without strong leadership guiding the effort, the goals are less clear or are not as well known throughout the entire organization. A second pattern emerged when participants were asked to rate the success of their decision on a 1 to 5 scale. The decisions in this group ranked at a level 3 or below (average 2.5). The average of all 30 decisions that were studied is 3.7. A lower average for this group of decisions without defined goals can mean two things: (1) it is hard to be successful without a defined target, and/or (2) participants are less confident in rating their effort as successful when they are unsure of the initial intention for the market entry. These differences in scores were tested statistically: the Mann-Whitney U-test showed statistically significant differences in median success scores for decisions with strong support versus those without strong support (p-value = 0.00005).

Assessing internal alignment helped gain an in-depth understanding of each case on an individual basis and patterns started to emerge. For more pattern identification, the cases were also compared to one another in a cross case evaluation, which is fully discussed in the next section.

2.8 Cross-Case Evaluation Methods

2.8.1 Developing Categorical Coding

Coding qualitative data is a method of breaking apart case study data and rearranging it into categories used for comparison to other cases or theory building (Maxwell 2013). Initially, the research team developed four high-level categories for data analysis: the decision process, decision makers, factors considered, and timeframes. These categories provided the facts to be gathered for each case. After discussion with a panel of three construction industry experts, each with 35+ years of experience, the category "characteristics of the champion" was added. The experts had learned through experience that the person chosen to champion the new market could have a significant impact on the outcome of the market entry.

During the collection of case study data, three more categories were developed: motivation, measures of success, and lessons learned. Motivation was meant to capture the reasons why the market entry decisions were being considered in the first place. After just a few interviews, there was a range of initial motivations for considering market entry from "requested by a client" to "industry association seminar" to "idea from the company president". Measures of success became important when, in two different cases, the company decided to exit the market after five years of actively pursuing work. One participant saw their market entry experience as a failure because of their exit while the other saw it as a success. For this reason, the study tracked decision makers' reasons for considering their decision successful or unsuccessful. The last category to be added was "lessons learned". This category was created because the participants each had words of wisdom that he or she gained from each decision. There was a strong desire from

participants to pass along their hard taught lessons to improve the future experiences of other contractors.

2.8.2 Themes from Case Study Data

The eight category codes (decision process, decision makers, factors considered, timeframes, characteristics of the champion, motivation, measures of success, and lessons learned) became the column headers for the case study database. Each of the 30 collected cases represented one row of the database. The matrix created by setting up the database columns in this fashion was analyzed in two different ways: (1) themes were developed within each coding category and (2) patterns, or relationships between themes, were detected.

Cross-case themes were identified by reading the data for all cases within a particular column. For example, all of the data pertaining to characteristics of the champion were reviewed. Three leadership themes were identified: (1) a top leader (i.e. company president) within the company took on the role of the champion, (2) an external champion, someone not currently employed at the company, was chosen to lead the new market, or (3) an internal champion, someone who is currently employed at the company, was chosen to lead the new market. Within these themes, subthemes surfaced. When top leaders become the champion, the leader's characteristics were not considered as factors in the market entry decision. Internal champions impacted the decision based on their technical abilities and experiences. The impact of external champions was evaluated based on, both, their technical prowess and personality factors, likeability, customer service skill, etc. Identification of themes highlights similarities and differences amongst the 30 cases.

Next, patterns among codes were analyzed by reviewing which themes appeared together in multiple cases. Researchers were most interested in patterns that lead to more successful outcomes or patterns that resulted in unsuccessful outcomes. From these patterns, testable correlations begin to form about what makes a successful market entry decision.

2.9 Cross-Case Patterns

Identification of themes and patterns was completed for each of the eight code categories. The following subsections describe the findings for each category.

2.9.1 Decision Process

Most of the case study decisions did not use a structured decision-making process. Only two of the interviewees described formal processes: cost/benefit analysis and business plan development. In the cost/benefit process, the company president and three vice presidents brainstorm the potential costs and benefits (including financial and non-financial measures) of the market entry. The business plan approach required the company's top leaders to formally present a market assessment, with financial projections and competitive outlook, to the board of directors, who ultimately made the decision.

Although not formalized, three process-related themes were identified from the 30 total cases: (1) assess strategic fit first, (2) start slow and grow conservatively, and (3) adapt and learn from experience. Of thirty total cases, five stressed the importance of assessing the strategic fit of the decision before any other factors. Ten cases considered their slow start and controlled, conservative growth to be an advantage citing ease of learning on smaller projects and limited losses as key reasons. Six cases mentioned the importance of adapting to and learning from challenges in the new market.

A significant pattern was identified when reviewing the decision processes. All five decision cases specifically emphasizing the importance of strategic fit received average or above average ratings of success.

2.9.2 Decision Makers

The top company leaders, including the company owner, president, or partners, were included in every studied case. Vice presidents served as decision makers in five cases. Additionally, an external board of directors, chief financial officer, future market partner or champion, project manager and staff took on a decision-making role in two or fewer cases.

No patterns of success were identified based on the decision maker. However, when interviewees were asked to rate the decisions success from one to five, decisions with heavy support and commitment from the top leader in the company received an average rating of 4.4. Decisions with weak or inconsistent company leader support averaged 2.5 out of five.

2.9.3 Factors Considered

The category code 'factors considered' identified each instance an interviewee described a decision factor during their market entry decision-making process. The 45 decision factors that were collected are shown in Table 6. The importance of each factor in the ultimate decision was not recorded during the interviews. Factors were simply noted and gathered together for further analysis using a consensus building workshop activity. This list of factors provided a significant contribution to future work. Four workshops were conducted using a list of 23 independent and relevant decision factors collected from both the academic literature and this cross-case analysis. The workshops determined the most

important factors to decision success are: market need, experience and abilities of the champion, competition in market, competitive advantage, investment capital, startup costs, profit projections and strategic fit. See Chapter 3 for a detailed article on the methods and results from the workshops.

Table 6: List of Decision Factors Considered in 30 Case Decisions

Acceptance by subcontractors	Existing relationships	Overhead savings
Availability of financial resources	Fabrication efficiency	Potential profits
Bonding agency acceptance	Five year income projection	Reputation
Budget/initial scope	Global economic situation	Safety
Champion capabilities	Growth of potential market	Staff availability
Competitive advantage	Growth timeframe	Staff experience
Contract requirements	Industry acceptance	Standards and regulations
Core competencies	Industry trends	Strategic fit
Cultural fit	Job timeframes	Support from organization
Customer acceptance	Knowledge of market	Targeted growth
Delivery system	Labor commitment	Time savings for employees
Direct cost savings	Labor productivity	Training and learning curve
Direct startup costs	Market need	Willingness of leader to adapt
Distance	Market perception	Yearly budget
Existing competitiveness	Overhead costs	Yearly target earnings

2.9.4 Timeframes

Eighteen cases provided the timeframe used to make the decision. The amount of time spent considering each decision ranged from one day to 24 months. Decisions taking longer than six months were three times more likely to be considered successful than decisions evaluated for fewer than six months. In light of this finding, a Mann-Whitney-Wilcoxon test was conducted to compare the median success rating on a scale of 1 to 5 for decision taking less than six months compared to those taking longer than six months. The one-tailed test returned a p-value of 0.075, which indicates statistical significance at alpha=0.1.

2.9.5 Characteristics of the Champion

For this analysis, the champion is considered to be the person most responsible for leading the efforts in the new market. Twenty-four cases stated important characteristics of the champion. The champions of these 24 decisions originated from three different places: external champions, internal champions, and company leaders. Twelve champions were considered external champions, meaning at the time of the decision this person was not employed with the company. In these cases, the champion was chosen based on both technical experience and personality traits. Four champions were considered internal champions, meaning at the time of the decision, this person was employed at the company in a middle management role. In these cases, the champion was chosen based only on technical abilities; personality traits were not mentioned as a factor. Eight champions were considered company leader champions. In these cases, the company leader (president, owner, etc.) took on the role of champion.

The type of champion (external, internal or top leader) did not influence the success rating of the decision. However, choosing the wrong market champion was the most cited reason for unsuccessful market entry. As noted in the *Decision Makers* subsection, heavy support and commitment from the top leader had a significant positive influence on the decision's success. Interestingly, some cases with company leader champions did not have good top leader support and commitment. In these cases, the leader decided to enter a new market even though he or she had concerns involving the effect of the new market entry on the company's existing markets.

2.9.6 Motivation

Motivations for entering a new market varied greatly based on the circumstances. Although there were no patterns identified linking the motivation to decision success or failure, the alignment analysis discussed previously found the lack of a clear motivation is a strong indicator of an unsuccessful decision outcome. Some of the motivations for entering a new market include:

1. There is a constant need for a service our company does not currently provide,
2. To gain control of staffing, schedule or product warranty,
3. A thoughtful idea came from a trade seminar/report, peer group, or employee,
4. To better provide for the customer,
5. To improve cash flow,
6. To reduce market risk by diversifying services or customer base, and
7. To make profit.

2.9.7 Measures of Success

All of the interviews included a discussion about the measures each decision maker used to retroactively evaluate successfulness of the market entry decision. The responses varied depending on the situation, and included:

1. Enhancement of company's core values,
2. Improvement in relationships,
3. Profitability,
4. Number of employees supported,
5. Length of time in market,
6. Competitive advantage,
7. Feels right,
8. Control over project,
9. Mitigation of market risk,
10. Sales volume,
11. Learn valuable lessons,
12. Market becomes ingrained in the company,
13. Speed of work, and
14. Growth.

There were no patterns identified between measures of success and any of the other identified themes.

2.9.8 Lessons Learned

The category of *Lessons Learned* was added during the interview process because there was a desire from participants to contribute to the industry by passing along their learning

experiences. These lessons were collected and will be featured in a Market Entry Decision-Making Framework that is detailed in Chapter 4. These lessons are provided in Table 7.

Table 7: Lessons Learned from Case Studies of 30 Market Entry Decisions in the Sheet Metal Industry

accounting: Many had difficulty found trouble accounting for their new market. Be sure you can separate the new market from your other areas of work so you can clearly identify sales, costs, and overhead to ensure your forecasts are accurate. Will your new customers have different invoicing expectations? Can your accounting system invoice fast enough and in enough detail for the customers in the new market?
conservative start: those who were highly successful in entering a new market noted starting small (low dollar contracts and one project at a time) lessened the inevitable early learning pangs. However, dipping a toe into a new market can cause customers to question your commitment. Consider both sides and try to find the right balance for your situation. Start as small as possible to minimize early mistakes or mishaps, but not too small to limit your ability to capture loyal clients.
ability to plan: Some markets are more stable and easier to plan for than others. Recognize the uncertainty in the new market and the accuracy of your profit projections. An appropriate contingency budget is critical to cope with unexpected challenges.
other markets: Entry into a new market always impacts your existing markets. Anticipating the impacts the new market has on the company as a whole can help you to recognize ways to, not only gain a revenue stream from the new market, but also, enhance sales in your current markets.
labor issues: When expanding geographically or adding a trade, it is important to get a feel for how the new local treats unfamiliar faces. If you are worried you are not getting honest feedback from competitors in the area, this risk that should be identified in the decision process.
cultural differences: Combining groups of people can cause anxiety and sometimes pushback. Uncertainty, especially when their livelihood is concerned, can impact people in unforeseeable ways. Getting through cultural differences takes a strong commitment from company leaders.
learn from experiences and adapt: Expect changes and be flexible. The commitment to learn from challenges helped many contractors enhance their new market offerings and gain a competitive advantage after initial struggles.
commitment is key: Commitment to your decision to enter or not to enter a market is the biggest indicator of success. If you are wavering for whatever reason, this market probably isn't right for you. On the other hand, if you have earnestly consider this framework and decide to enter the market, move forward with confidence and dedication.
barriers to entry: The barriers you are overcoming to enter this new market will not hold forever. There are likely lessons you can learn today that will help you extend your competitive advantage in this market or successfully enter a new market in the future.
have clear objectives: Knowing your motivation for entry is a proven key to success. Aligning your reasons for entering the market with how you are measuring success helps everyone to clearly see whether goals are being met. When everyone understands the goals, they can adjust their actions to enhance success.

2.10 Success in Market Entry: Conclusions

To summarize the contributions from the multiple case study, clear reasons for entering the market, strong support from the company leader, and analysis of strategic

fit are strongly related with decision success. Choosing the wrong market champion was the most cited reason for unsuccessful market entry. Additionally, sheet metal contractors who spent more than six months deliberating on their market entry decision were three times more likely to rate their decision as successful than contractors who spent less time.

Eight decision aids for market entry in construction were uncovered during a thorough review of the literature. In alignment with the findings of this research, the literature suggests analysis of strategic fit and characteristics of the champion are significant factors in the decision to enter a new market. Dikmen and Birgonul (2004); Gunhan and Arditi (2005); and Tang et al. (2002) use SWOT analysis, a method to understand strategic position and alignment, to make construction market entry decisions. Champion characteristics were included in a variety of factors including managerial capabilities and experience with same project participants (Dikmen and Birgonul 2004); management expertise and specialist expertise (Gunhan and Arditi 2005); and managerial factors (Tang et al. 2012). In addition to these findings, the multiple case study research approach found a clear reason for entry and support from the company leader to be highly important factors, but the construction literature is silent on these points. The absence of these factors in existing decision aids is likely due to the use of prescribed modeling techniques as opposed to the generation of elements of success through study of a variety of decision-making experiences. The qualitative case study approach allowed contractors to generate additional factors pertaining to how the decision-making was carried out and why the decisions were considered in the first place.

In addition to the patterns of success, the case studies provide a list of factors considered by sheet metal contractors when entering a new market. These factors

combined with those identified in the literature produced a list of 23 relevant and independent factors. Diagramming each case allowed the researchers to identify patters of misalignment.

Ongoing research is using the findings from these 30 case studies to develop an intervention. The decision-making framework being developed encourages contractors to learn from these experiences by reviewing the narratives of the cases, creating an aligned process with strong leadership support and a clear vision, considering the decision factors found to be most important in the past, and taking plenty of time to deliberate before action. The impact of the decision-making framework will be based on the testable findings from this multiple case study.

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3. IDENTIFICATION AND PRIORITIZATION OF KEY FACTORS IN MARKET ENTRY DECISION-MAKING THROUGH CONSENSUS-BUILDING WORKSHOPS WITH SHEET METAL INDUSTRY PROFESSIONALS

3.1 Abstract

The decision to enter a new market, be it through a new market sector, adding a trade or service, or expanding geographically, is a complex task. The existing construction literature provides little guidance for construction subcontractors as they navigate these arduous decisions. This research collects market entry decision factors from the literature and combines them with experiential knowledge gathered through semi-structured interviews. Using consensus-building workshops designed specifically for this study, industry professionals prioritize the decision factors based on the factor's importance to a successful outcome. The industry consensus results provide an ordered list of decision factors for each of four market entry scenarios. Comparing the lists contributes to the body of knowledge by revealing the *essential eight* factors (competition in the market, competitive advantage, strategic fit, experience and abilities of the champion, investment capital, market need, profit projections, startup costs) are important regardless of the decision type. Additionally, the workshop method developed for this study was found to effectively synthesize the knowledge of several industry professionals. The combined knowledge of 130+ participants found strategic fit and experience and abilities of the champion to be the most important factors for market entry success. However, when asked individually at the beginning of the workshops, more than half of the participants failed to rank these two factors in their top ten most important considerations. Only two of 108 individual participants appropriately ranked strategic fit, and experience and abilities of the champion as the top two considerations. These findings contribute to the

body of knowledge by incorporating knowledge and experience from many individuals into an industry opinion of the most important factors to consider when entering a new market.

3.2 Market Entry Decisions in the Sheet Metal Industry

Market entry is paradoxical in that it is both a risk mitigation method while being itself a large risk. Many organizations successfully diversify their market participation and are consequently better equipped to weather a market downturn and increase their long-term profitability (Choi and Russell 2005; Kangari and Riggs 1988). However, market entry decision-making is a highly risky behavior that ultimately causes many organizations to fail (Schleifer 1990).

Determining how to successfully grow an organization in the construction industry is not a trivial task. Strategic growth decisions are not straight forward, but rather, are complicated by the uncertainty of an ever-changing industry (Miller 1993). Learning from a single organization's experience is nearly impossible because, by definition, strategic decisions are made relatively infrequently, and feedback from each decision is slow and difficult to understand (Betts and Ofori 1992). Additionally, consideration of a diverse, although less defined, set of experiences leads to better predictions than focusing on the few, more familiar, experiences of a single company (Lovallo et al. 2012), but it is unclear if current decision-making practices consider several analogous experiences.

The purpose of this research is to combine the knowledge and experience of many construction industry professionals to identify and prioritize market entry decision

factors. The resulting prioritized list of critical market entry factors incorporates a greater spectrum of lessons learned than can be gleaned by an individual person or organization.

3.3 Existing Decision Aids for the Construction Industry

Some aids already exist to help contractors who are considering entry into a new geographical market to examine key decision factors. In fact, eight existing market entry decision aids were found during a thorough search of the construction industry literature. All eight aids were intended for use in international market entry with no mention of their applicability to entering a new market domestically. Although the modeling techniques differed from study to study, the methods used to identify decision factors were similar among the eight studies. Each decision aid analyzed factors by either reviewing the literature alone, or a through literature review supplemented by discussion with industry professionals.

Han and Diekmann (2001) analyzed the complex decision of entering a new international market using the cross impact analysis technique. Thirty-two decision factors were identified through a review of the literature and input from experts in international construction procurement. The authors mapped the factors based on their interdependencies and experts estimated the influence between factors. With a few project inputs, the network of influences can determine a go/no-go decision based on profitability and "other benefits" (client relationship, future work, and market share benefits). The model provided improved results and confidence when compared to intuition and the use of the influence diagram technique, but the formulation of the model is resource intensive and is not easily adaptable to different situations or additional factors.

Authors Dikmen, Birgonul and Ozorhon studied the internationalization of Turkish contractors using three different techniques: neural networks, analytical hierarchy process, and case-based reasoning. Initially, decision factors were gathered from the literature and enhanced using "light" input from experts, similar to the method used by Han and Diekmann (2001). With a portion of these factors, Dikmen and Birgonul (2004) developed a neural network to determine the attractiveness of an international project and a company's competitiveness using decision factor information (i.e. project size) from past experiences. An analytical hierarchy process used additional factors to rank international projects based on the project's risk and opportunity (Dikmen and Birgonul 2006). Subsequently, Ozorhon et al. (2006) used the same database of projects and decision factors to predict project outcomes using a case-based reasoning model that retrieves similar cases from a company log of past experiences.

Gunhan and Arditi (2005) combined analytical hierarchy process and the Delphi method to produce a two-step decision-making process. The decision factors used to create the hierarchy were found through a review of the literature. Then, the Delphi technique synthesized expert opinion to assign weights to the factors. Based on the factor weights, the model first assesses company readiness for international market entry. Then, a specific country is analyzed and an entry mode suggested.

Cheng et al. (2011) gathered factors from the literature and from discussions with project managers experienced with international projects. Each factor was categorized as a "country factor" or "project factor". Fuzzy preference relation weighted and analyzed the country factors based on the decision maker's preferences and determined the level of risk associated with entering a specific country. If the country risk is found to be

acceptable, preference information is again solicited from the decision maker. Cumulative prospect theory uses the resulting preference profiles to determine whether a contractor should bid a specific project.

Tang et al. (2012) used questionnaires with Likert scale assessments to rank decision factors found from the literature. The results from the questionnaire were then used to weight factors for further analysis using entropy calculations, which rank each factor relative to the others.

In the most recently published aid, Kim et al. (2013) approached international market entry as an investment decision rather than a risk assessment, like the previous studies. Traditional factors used for real-options assessment are used to determine the investment outlook of entering an international market.

These eight decision aids provide a variety of approaches to making international market entry decisions in the construction industry. Within each aid, a number of decision factors found from a review of the literature or input from industry professionals are analyzed in a structured manner designed to increase the likelihood of a successful outcome. However, there were no studies found that apply to domestic market entry by a construction firm. Also, the studies gathered their factors from the construction literature, which traditionally focuses on larger, general contracting firms. No aids could be found that provide guidance for specialty contractors or smaller firms. Additionally, these aids address market entry through geographical expansion, but do not mention other methods of market entry such as adding a trade or service, or branching out into a new market sector.

The current research addresses this gap in literature by identifying and prioritizing decision factors for market entry, specifically for domestic market entry in the sheet metal industry. The research approach utilizes the knowledge and experiences found in the existing literature and from several seasoned professionals and investigates a variety of market entry decision types including: adding a trade, adding a service department, working in a new market sector, and expanding geographically.

A three-phased approach was used to develop the prioritized list of decision factors. First, decision factors are gathered from the current literature. Then, the factors from literature are combined with decision factors from semi-structured interviews with experienced members of the sheet metal industry. Next, workshops designed to harness the collective knowledge of the industry are used to prioritize the decision factors. The general approach is shown visually by the flowchart in Figure 3. The following sections describe, in detail, the methods used to identify and prioritize the key decision factors for domestic market entry in the construction industry.

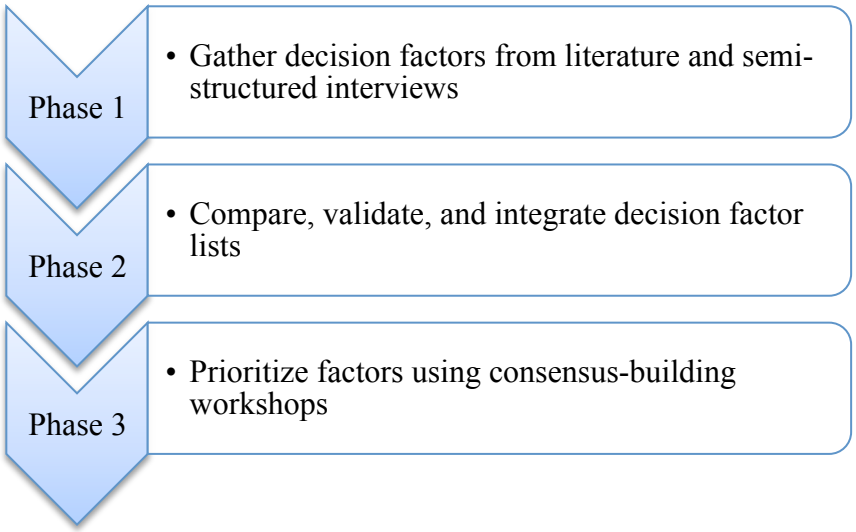

Figure 3: Three-Phased Approach to Prioritization of Key Market Entry Decision Factors

3.4 Identifying Key Decision Factors

Key decision factors for market entry were identified from a combination of sources. First, an initial list of important factors to market entry in the construction industry was compiled from the existing decision aids found in the literature. Then, sheet metal industry professionals were interviewed about their previous market entry experiences for two reasons: (1) to validate the findings from the literature search by corroborating the results, and (2) to uncover any decision factors that are specific to the sheet metal industry. Finally, the lists from the literature and industry interviews were combined into one comprehensive set of independent factors that are regularly considered during market entry in the sheet metal construction industry.

3.4.1 Collection of Decision Factors

A literature search for market entry decision aids in the construction industry yielded eight results. All eight decisions aids were specifically designed for international market entry. Table 8 provides a list of decision factors used in each of the eight decision aids. After removing duplicates, the number of decision factors collected from the literature search totaled 53. Seven decision factors were removed because they were specifically intended to address international market entry decisions only. The seven removed factors include: relations with host government, government subsidy, relationship with government, inflation, taxation, security risks, and interest rate stability. The remaining 46 factors were validated through triangulation with the results from semi-structured interviews.

Table 8: Decision Factors in Existing Construction Market Entry Aids

Source	Factors
Han & Diekmann (2001)	Expropriation; War; Government control; Repudiation; Government subsidy; Relationship with government; Government act and regulation; Currency exchange; Currency restriction; Inflation; Burden of financing; Tax discrimination; Cultural differences; Language barrier; Different applicable law; Different dispute resolution; Force majeure; Protection of proprietary information; Difference in geography; Labor issues; Material availability; Subcontractor availability; Different standard; Different measurement system; Domestic requirement; Lack of management skill; Lack of experience; Warranty issue; Import/export regulation; Technology transfer; Lack of infrastructure; Public resistance; Environmental issues; Profits
Dikmen & Birgonul (2004)	Economic prosperity of host country; Host country risk; Cultural/religious similarities; Distance to host country; Attitude of host government; Construction demand in host country; Size of project; Type of project; Technical complexity of project; Type of client; Availability of funds for project; Contract type; Experience of company with similar works; Existence of strict time limitations; Existence of strict quality requirements; Intensity of competition
Gunhan & Arditi (2005)	Company management expertise; Company financial strength; Specialist expertise; International network; Track record; Equipment; material; labor availability; Inflation and currency inflation; Interest rate increase; Shortage of financial resources; Bribery in host country; Foreign competitors in the host country; Cultural differences; Loss of key employees; Technological advancement; Globalization and openness of markets; Availability of new service areas; Increased long-term profitability; Privatization in emerging economies; Beneficiary international agreements; Maintain shareholders' return; Competitive use of resources; Competitive advantage; Economic risk; Political risk; Financial risk; Operational risk-entry barriers; Taxation; Legal environment of host country; Security risks
Dikmen & Birgonul (2006)	Experience in same country; Experience in similar projects; Experience with same project participants; Availability of staff; Availability of financial resources; Availability of equipment; Managerial capabilities; Technical capabilities; Organizational capabilities; Relations with client; Relations with host government; Relations with suppliers; Competitive strategy; Type of project; Size of project; Project duration; Contract type; Payment type; Specific contract clauses; Economic prosperity of host country; Political conditions; Social conditions; Legal framework; Project location; Language; Religion; Culture; Climate/geography; Government
Ozorhon et al. (2006)	Country; Economic prosperity of host country; Host country risk; Cultural-religious similarities; Distance to host country; Attitude of host government; Construction demand of host country; Size of project; Type of project; Technical complexity of project; Type of client; Availability of funds for project; Contract type; Experience of company in similar works; Existence of strict time limitations; Intensity of competition; Potential profitability; Level of competitiveness
Cheng et al. (2011)	Monetary inflation; Bureaucratic delays; Type of partnership; Actual laws versus practices for repatriation of capital; Future market volume in core competency; Societal conflicts; Attitude toward foreign investors and profit; Competitive/negotiated bidding; Professional services other than construction; Tax and nontax incentives; Management abilities of local contractors; Availability and quality of local contractors; Availability of skilled and unskilled workers; Weather conditions and other natural causes of delay; Availability of basic construction equipment; Enforceability of construction contract; Penalty for duration delay; Change order; Insurance; Contract duration; Experiences of similar contracts; Potential profit
Tang et al. (2012)	Political factors; Legal factors; Cultural factors; Technical factors; Managerial/organizational factors; Economic factors; Environmental factors; Physical factors; Social factors; Corruption factors; "Other"
Kim et al. (2013)	Initial cost; Fixed cost; Variable cost; Capital structure of firm

To validate and augment the list of decision factors from the literature, the authors conducted 15 semi-structured interviews with sheet metal industry professionals about their previous market entry experiences. The interviewees included 10 company presidents, two company partners, two senior vice presidents and one senior project manager. Each interviewee was asked to describe the decision factors considered during one or more specific instances in which their company considered entering a new market. The question was open-ended allowing interviewees to name as many factors as could be recalled. No examples were given by the interviewer to avoid biasing the results. The interviews resulted in a combined list of 45 decision factors from a total of 30 market entry experiences.

Forty factors appeared on both the list of decision factors from the semi-structured interviews and the list of decision factors found from the literature. This duplication rate of 89 percent indicates that the two decision factor lists are highly similar. Combining the lists and removing duplicates resulted in 51 market entry decision factors. This combined list of decision factors alone can be helpful to sheet metal professionals who are contemplating market entry by representing lessons learned from a diverse group of experiences that are otherwise unavailable to contractors. However, this research goes on to enhance this list by prioritizing the factors in order of their impact on the success of the market entry decision. Knowing which factors are highest priority helps decision makers appropriately allocate their time and effort.

3.4.2 Reshaping the Decision Factors List

Before prioritization, the existing list of decision factors required modification to ensure each factor is relevant to the problem and independent from other factors. Some of

the decision factors on the 51-factor list are specific to one type of market entry decision. For example, the factor "distance" is specific to geographical expansion and would not apply to a company adding a trade or trying a new type of construction. To ensure the decision factor list is applicable to several types of market entry decisions each factor was reviewed for its relevance within a broad definition of market entry decisions. Decision factors were also reviewed for independence. In prioritization or ranking exercises, the less dependence there is among factors, the less complex and more refined the result (Keeney 1981).

A collaborative discussion method was used to define relevant and independent decision factors for prioritization. This method follows the approach outlined in Smagorinsky (2008) as an alternative to independent corroboration in qualitative research. Independent corroboration is a process traditionally used in qualitative research to validate the coding of data. A second researcher is trained in the coding methods that were used; then, he or she codes 15 percent of the data. The codes are considered reliable if there is at least an 80 percent agreement rate with the initial coding. The second researcher's strict adherence to the coding systems prescribed by the first researcher is a major limitation of independent corroboration because the second researcher does not provide any additional expertise or perspective in designing the code structure. Collaborative discussion similarly enlists a second researcher to corroborate, but allows both researchers to contribute to the analysis and coding of the results through thoughtful discussion and negotiation. For this study, collaborative discussion was used to capitalize on the experience of multiple researchers by developing the variable definitions together through negotiation.

Decision factors were analyzed first for relevance then for independence. Relevance was determined based on the applicability of the factor to a variety of market entry decisions. Multiple perspectives and definitions for each factor were discussed. After lengthy negotiation, six decision factors were removed based on relevance: distance, fabrication efficiency, labor productivity, lack of infrastructure, security risk, and time savings for employees. Next, collaborative discussion was used again to combine and define the remaining factors such that the factors are independent. Absolute independence is impractical because interrelation between factors can change based on an individual's perspective and assessing the perspective of each participant would be unreasonably time consuming. For this reason, the researchers aimed for relatively independent definitions as perceived by most participants. The collaborative discussion resulted in a final list of 23 relatively independent decision factors, shown in Table 9 along with the original factors that were combined to create each factor. Additionally, feedback on the participants' perception of independence was solicited at the conclusion of each factor prioritization workshop. The participants felt the factors were clear and they could differentiate between them. No changes were necessary based on the feedback.

Table 9: Representative and Independent Decision Factors with Original Factors

Final Factors	Original Factors
Bonding agency acceptance	Bonding agency acceptance
Competition in market	Existing competitiveness
Competitive advantage	Competitive advantage
Contract requirements	Contract requirements, Different dispute resolution, Liquidated damage policy
Customer acceptance	Existing relationships, Customer acceptance, Market perception
Delivery system/Contract type	Delivery system, Payment type
Experience and Abilities of Champion	Champion capabilities, Willingness of leader to adapt
Global economy	Global economic situation
Industry acceptance	Acceptance by subs, Industry acceptance
Investment capital	Availability of financial resources
Job timeframes	Job timeframes
Knowledge of market	Knowledge of market
Labor commitment	Labor commitment
Market need	Market need
Market trends	Growth of potential market, Environmental issues, Industry trends
Profit projections	Potential profits, Overhead costs, Overhead savings, Targeted growth, Yearly budget, Five year income projection, Yearly target earnings, Direct cost savings
Reputation	Reputation
Staff availability	Staff availability
Standards and regulations	Standards and regulations
Startup costs	Equipment availability, Budget/initial scope, Direct start up costs
Strategic fit	Core competencies, Cultural fit, Strategic fit
Support from organization	Support from organization
Training and learning curve	Staff experience, Training and learning curve

3.5 Factor Prioritization Workshop Method

A three-step workshop approach utilizing current sheet metal contractors was developed to prioritize the previously identified decision factors. First, participant contractors from the sheet metal industry were given a real scenario about a market entry opportunity and were asked to individually order the top ten decision factors based on importance to the decision's success, by choosing factors from the given list. Next, the participants were split into groups of five to eight individuals and asked to repeat the prioritization exercise, this time coming to a group consensus on the top ten decision factors. Finally, the factors were given a score based on each groups' rankings and a top-ten list of factors was created for the overall session by summing the scores.

Gathering a group of experts through a workshops in a collaborative and structured atmosphere allows for the collection of data using several strategies during a single session and creating "buy-in" from participants (Gibson and Whittington 2010). Each workshop was held as a breakout session in or around an existing event. By combining with an existing event, participants were more willing to attend because they had already planned on taking time away from their everyday responsibilities for the larger event. Two trade association conventions, one professional development course, and a chapter meeting for a trade association were chosen to be the event hosts for these workshops.

The workshop approach was conducted using four different real scenarios that were drawn from the aforementioned structured interviews. Each scenario involved a different type of market entry decision: adding HVAC service, adding a trade, expanding geographically, and taking on a new type of project. Different types of market entry

decisions were used to understand whether different factors appear depending on the type of decisions.

Figure 4 shows an example presentation slide with the scenario for adding HVAC service. The choice was made to base each scenario on a small company with 12 employees and $10 million per year. This choice was made based on input from an expert sounding board, three individuals, each with 35+ years of industry experience.

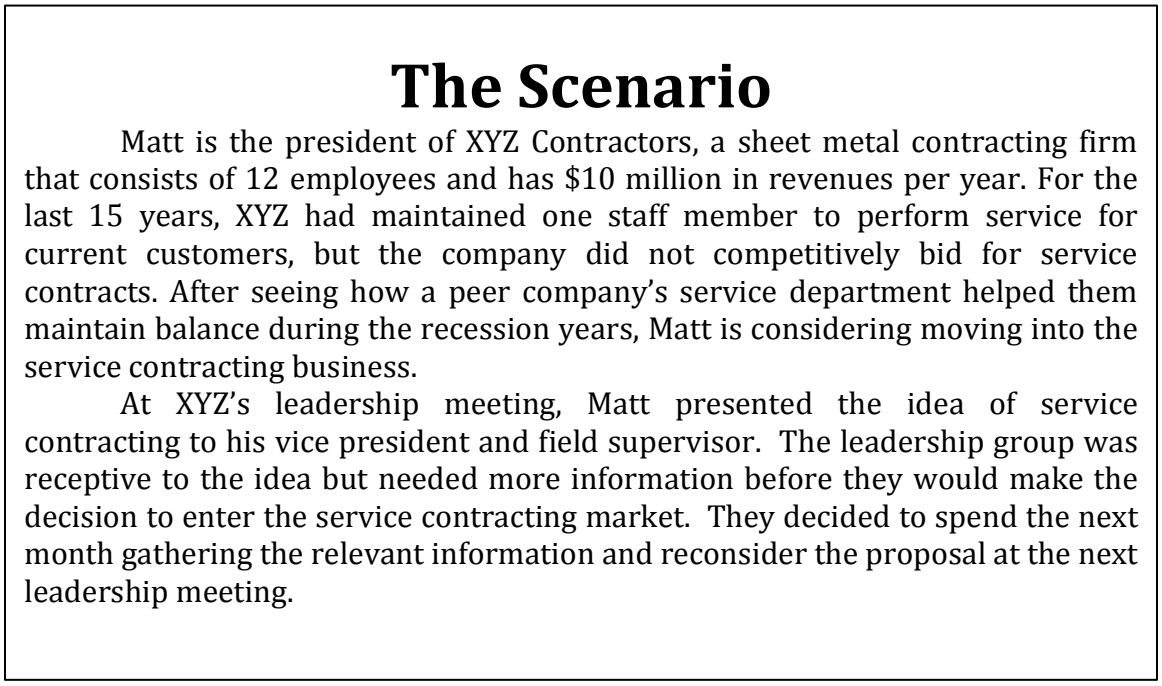

Figure 4: Hypothetical "Adding HVAC Service" Scenario Presented for Consideration as Part of One of Four Workshops to Prioritize Decision Factors

The list of 23 final decision factors, shown in Table 9, was presented to participants along with short definitions of each term and the decision scenario. First, each individual was tasked with determining, in order, the top ten factors they felt would contribute to the success of the decision being made in the hypothetical scenario. After completing the individual task, participants were partitioned into small groups of five to eight individuals and again asked to provide an ordered top ten list of factors. An

additional stipulation in the group round stated the resulting prioritized list must be a group consensus, but no further guidance was given about how to form a consensus.

According to Bottger and Yetton (1988), small groups perform better than the average individual in evaluative problems similar to this activity. Depending on the overlap of knowledge by individuals in the group, the group often outperforms the most knowledgeable individual of that group. The reason for holding an individual prioritization round before splitting into small groups is to ensure that each participant has time to process all of the information and form a personal choice before deliberating with others.

After the groups finished their deliberations, decision factors were scored based on the rankings in the small group assessment. Ten points were given to every factor ranked first, nine points to factors ranked second, and so on until one point was given for every factor ranked 10. Unranked factors received no score. The scores from the group rankings were summed, arranged from highest to lowest score, and immediately reported to all of the industry participants during the workshop session. The prioritized list was presented in real-time during the session to give participants the opportunity to examine the list and voice any comments.

3.6 Results from Four Workshops

In total, over 130 industry professionals participated in the four workshops, and 108 provided their individual scoring sheets for further analysis. Forty-five percent of the participants were considered company leaders (owner, president, partner, CEO), 34 percent were considered upper management (executive vice president, divisional manager, COO, CFO), 14 percent were senior project managers, and 8 percent were

project managers, shown in Figure 5. All participants have experience working the construction industry and most come from the sheet metal specialty.

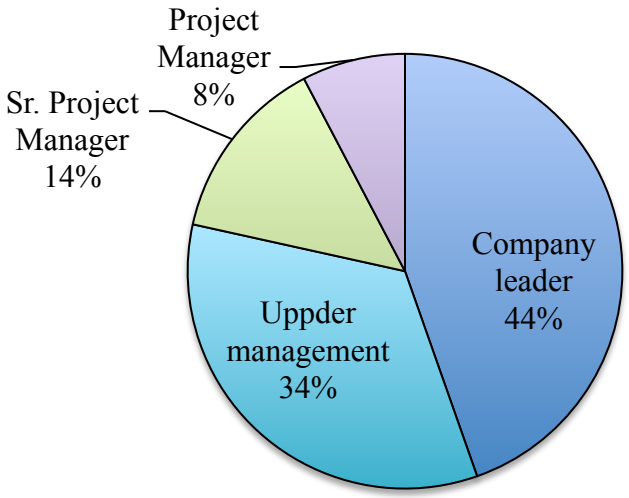

Figure 5: Demographics of workshop participants

Table 10 shows both the individual and group average scores and standard deviations (SD) for each factor prioritization workshop. An asterisk in the "Group SD" column marks the situation when the standard deviation for the group scores is less than that for the individual scores. This situation is unexpected given the sample size of the groups is smaller than the sample size of individuals. Note, the denominator, N-1, in the standard deviation (SD) formula:

$$SD = \sqrt{\frac{\sum_{i=1}^{N}(x_i - \mu)^2}{N-1}}$$

where x_i is the score, μ is the average score, and N is the number of scores. Given the number of individuals scoring each decision factor was larger than the number of groups, it would be expected that the individual standard deviation would be smaller than the group standard deviation, given the same deviation from the mean. However,

82.6 percent of the time, the individual standard deviation was found to be larger than the group standard deviation. This narrowing of the score distribution indicates convergence toward a common opinion. In other words, combining the experiences of several individuals during small group discussions creates a more defined, less variable, ranking than by simply polling individuals without providing the opportunity for discussion with others. This finding adds certainty to the final rankings.

Summing the group scores provides the overall session rankings. The top-ten decision factors from each of the four factor prioritization workshops are shown together in Figure 6. The factors are color-coded from darkest (4) to lightest (0) based on the number of times each factor appears on a top ten list. Of the 23 decision factors, four appear on all of the top-ten lists: strategic fit, experience and abilities of champion, market need, and investment capital. Another four decision factors appear on three of the four top-ten lists: profit projections, start up costs, competition in market, and competitive advantage. Seven decision factors did not reach any of the top-ten lists.

Different market entry decision scenarios were used to test whether or not the decision types require specific decision factors to be analyzed. The scenarios were chosen through a review of the literature finding geographical expansion and new type of project to be the most cited market entry causes of failure for construction organizations (Schleifer 1990; Schaufelberger 2003; Davidson and Maguire 2003; Surety Information Office 2007; Rice and Heimbach 2014). Three industry experts, each with over 35 years of construction expanded new types of projects into three categories: new market sector, adding a trade and adding HVAC service based on the importance of each category for union sheet metal contractors. Though these decision types were evaluated individually,

Table 10: Results of Four Prioritization Workshops

	New Type				Add a trade				Expand geographically				Add HVAC service			
Factor	Ave. Indiv. Score	Ave. Group Score	Indiv. SD	Group SD	Ave. Indiv. Score	Ave. Group Score	Indiv. SD	Group SD	Ave. Indiv. Score	Ave. Group Score	Indiv. SD	Group SD	Ave. Indiv. Score	Ave. Group Score	Indiv. SD	Group SD
Bonding agency acceptance	2.50	3.75	3.97	1.73*	0.95	0.63	3.06	*	1.59	0.57	2.85	1.41*	0.18	0.13	0.00	*
Competition in market	2.64	0.00	3.06	*	3.97	5.13	2.44	2.79	4.68	3.86	3.17	3.20	6.09	4.38	2.48	0.96*
Competitive advantage	3.21	0.50	2.44	*	2.54	3.25	2.90	1.92*	2.15	3.57	2.97	3.50	2.68	3.88	3.14	1.71*
Contract requirements	2.50	3.25	2.22	2.12*	0.00	0.00		*	1.18	0.14	2.63	*	0.27	0.75	2.83	2.83*
Customer acceptance	1.64	3.00	2.87	2.83*	3.68	2.88	2.51	3.65	2.62	0.29	3.25	*	2.95	2.25	2.83	2.10*
Delivery system/contract type	0.21	0.25	0.71	*	0.18	0.00	2.31	*	0.68	0.86	1.96	0.00*	0.45	0.00	2.52	*
Experience and abilities of champion	3.57	6.00	2.48	1.00*	3.15	4.38	2.67	2.23*	5.82	8.71	2.62	1.11*	5.86	6.13	2.40	1.29*
Global economy	0.00	0.00		*	0.21	0.00		*	0.09	0.14		*	0.18	0.00		*
Industry acceptance	0.21	0.00	0.71	*	1.96	1.75	2.64	1.15*	0.82	0.00	3.14	*	0.27	0.00	1.00	*
Investment capital	4.21	6.25	2.19	0.96*	4.68	6.00	2.88	2.39*	2.57	3.29	2.51	2.06*	4.05	3.13	2.15	3.10
Job timeframes	1.57	1.00	1.51	1.41*	0.08	0.00		*	0.62	0.14	2.39	*	0.00	0.00		*
Knowledge of market	2.79	1.25	2.42	*	3.08	0.75	2.40	1.73*	3.97	5.71	2.93	2.55*	3.50	1.25	1.89	2.08
Labor commitment	1.57	1.50	3.44	1.41*	2.26	1.63	2.28	3.30	2.06	2.57	2.50	2.08*	2.27	3.13	2.38	2.83
Market need	2.00	2.50	1.15	*	3.92	2.63	3.33	3.46	3.76	6.29	2.74	2.16*	5.73	6.63	2.06	1.47*
Market trends	2.00	2.50	1.15	*	1.28	1.75	2.83	2.83*	1.35	0.86	2.37	*	0.45	0.38	1.41	0.71*
Profit projections	3.64	3.25	3.15	4.16	4.51	5.88	3.14	2.56*	2.22	1.71	3.18	2.65*	4.09	5.50	2.25	1.51*
Reputation	0.43	0.00	2.83	*	0.55	0.00	1.92	*	0.53	0.00	4.36	*	0.86	0.25	3.03	*
Staff availability	2.43	2.00	2.28	0.00*	3.03	2.75	2.37	1.07*	5.57	5.57	2.24	1.72*	2.86	2.13	2.11	0.96*
Standards and regulations	1.93	2.25	2.81	*	0.82	0.00	2.94	*	1.79	2.43	2.21	1.52*	0.41	0.38	2.12	*
Start up costs	3.07	2.75	2.83	3.79	5.27	5.63	2.54	2.35*	4.26	2.29	2.57	1.41*	3.68	4.38	2.44	2.83
Strategic fit	6.57	9.25	3.15	1.50*	5.14	7.38	2.86	3.25	3.15	4.29	3.62	3.15*	3.59	5.88	3.12	2.56*
Support from organization	0.86	0.00	1.73	*	2.18	1.88	3.12	2.12*	1.79	0.00	2.79	*	3.23	2.88	2.78	3.06
Training and learning curve	2.29	0.75	2.30	*	1.26	0.75	2.24	0.58*	1.69	1.71	1.91	3.00	1.05	1.50	1.96	2.65

*Individual standard deviation greater than group standard deviation

the overlap of decision factors onto multiple workshop lists indicates that market entry decisions require the assessment of the same key factors regardless of the specific type of market entry.

Rank	New market sector	Add a trade	Expand geographically	Add HVAC service
1	Strategic fit	Strategic fit	Experience and abilities of champion	Market need
2	Investment capital	Investment capital	Market need	Experience and abilities of champion
3	Experience and abilities of champion	Profit projections	Knowledge of market	Strategic fit
4	Cash flow	Start up costs	Staff availability	Profit projections
5	Bonding company acceptance	Competition in market	Strategic fit	Competition in market
6	Contract requirements	Experience and abilities of champion	Competition in market	Start up costs
7	Profit projections	Competitive Advantage	Competitive Advantage	Competitive Advantage
8	Customer acceptance	Customer acceptance	Investment capital	Investment capital
9	Start up costs	Staff availability	Labor commitment	Labor commitment
10	Market need	Market need	Standards and regulations	Support from organization

Number of workshops ranking this factor: 1 2 3 4

Figure 6: Overall Session Top-Ten Decision Factors for Success in Market Entry Decision-Making

By combining the knowledge and experience of many professionals in the sheet metal industry, the few areas to focus on have revealed themselves. Strategic fit, and experience and abilities of the champion have appeared on every prioritization workshop's top-ten factors list and have never fallen below the number six position. The consensus results show these two factors stand out above the rest in importance when entering a new market. However, only two out of 108 individuals identified strategic fit, and experience and abilities of the champion as the top two most important factors to market entry success. A total of 20 individuals had both of these factors ranked in their top six most important, and fewer than half, 52 of 108, had both in their top ten. Without sharing knowledge and discussing their opinions with other industry professionals, more than half of the participating individuals would have likely overlooked one of the two most critical factors to their success in market entry. Only 13 percent of the priority lists created by individuals included all four of the factors that appear on every session's top-ten list (strategic fit, experience and abilities of the champion, investment capital, and market need). These results show the importance of seeking out knowledge and experience from others when making market entry decisions. Without discussion with peers and integrating the knowledge gained from many diverse experiences, individuals struggle to pick out the factors most important to their future success in a new market.

The following list of eight factors has appeared on at least three of the four workshops' top ten lists:

- Strategic fit
- Experience and abilities of the champion
- Investment capital
- Market need
- Competition in the market
- Competitive advantage
- Profit projections
- Startup costs

Experienced sheet metal professionals consider these *essential eight* factors as highly important to the success of many types of market entry decisions. This knowledge, based on the collective knowledge and experience of the workshop participants, can help sheet metal contractors identify the factors that can have significant impact to their success in a new market.

3.7 Conclusion

Combining the knowledge and experience of 108 industry professionals through four factor prioritization workshops contributes to the body of knowledge a list of the top ten most important decision factors for four types of market entry decisions: new market sector, add a trade, expand geographically, and add HVAC service. The *essential eight* factors consistently appeared as important to the decision's success, regardless of the decision type.

Variation of scores, measured by standard deviation, was reduced from the individual to group assessment within a session 83 percent of the time. The reduction in standard deviation is persuasive, given the sample for the individual assessments is larger than that of the group assessments. This reduced variation provides evidence that group assessment is narrowing in on a consensus of the priority for decision factors. Further evidence of professional consensus is overlap of factors on the top-ten lists of multiple sessions. Four of the 23 provided decision factors appeared on the final top-ten priority list for all of the completed workshops. Four additional factors appear on three of the four final top-ten lists. Seven of the provided decision factors failed to appear on the final list at any of the workshop sessions.

Utilizing the collective knowledge and experience of 108 industry professionals, the two decision factors, strategic fit, and experience and abilities of the champion, consistently ranked in the top six most important factors. Only two of 108 individuals recognized these two factors as the top two most important, 20 ranked the two factors in their individual top six list, and fewer than half of the individuals ranked both factors in their top-ten priority list. Had the individual participants taken on a market entry decision on their own, more than half would have missed at least one of the two decision factors most critical to their success. The factor prioritization workshops provided a method to effectively integrate knowledge from many professionals. This synthesis of knowledge highlighted important factors often missed by individuals.

In future work, the prioritized decision factors will be incorporated into a market entry decision-making framework. The framework will be designed to assist sheet metal contractors with fully examining these critical decision factors when they consider

entering a new market. Although this research specifically targets the sheet metal industry, the framework and prioritized factors may have applications for other construction trades. Future research can investigate the effectiveness and applicability of the prioritized factors list for trades outside of the sheet metal industry.

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4. DECISION-MAKING FRAMEWORK FOR MARKET ENTRY IN THE SHEET METAL CONSTRUCTION INDUSTRY

4.1 Abstract

Entering a new market in the construction industry is a complex task. Although many contractors have experienced the benefits of expanding their market offerings, many more have had unsuccessful experiences causing hardship for the entire organization. Standardized decision-making processes can help to increase the likelihood of success, but few specialty contractors have taken the time to develop a formal procedure. According to this research, a mere 6 percent of survey respondents indicate sheet metal contractors have a formal decision process. This finding was strongly corroborated by 30 case studies where 7 percent of decisions used a formal process. To address this need, an iterative research method triangulates five sources of data (existing literature, industry survey, semi-structured interviews, factor prioritization workshops, and expert panel discussions) to understand the current market entry decision-making practices and needs of the sheet metal industry. Grounded in a firm understanding of industry practices, a decision-making framework contributes to the body of knowledge by providing a structured approach to guide contractors to an informed decision. Four industry leaders, each with over 35 years of experience in construction, reviewed and applied every step of the framework to ensure it is practical and easy to use for contractors.

4.2 Market Entry Decision-Making in Construction Organizations

Determining how to successfully grow or diversify a firm in the construction industry is not a trivial task. Strategic growth decisions are complicated by the uncertainty of an ever-changing construction market environment (Miller 1993). In addition, learning from

a single organization's experience is nearly impossible because, by definition, strategic decisions are made relatively infrequently, and feedback from each decision is slow and difficult to understand (Betts and Ofori 1992). Contractors who successfully navigate entry into a new market can benefit by expanding their brand, creating growth opportunities for employees, mitigating market risk and increasing long term profitability. Unfortunately, only one in five market entries is successful (Horn et al. 2005).

Although standardized frameworks have been shown to improve decision outcomes (Brinckmann et al. 2010, Dean and Sharfman 1996, Papadakis and Barwise 1998), few aids for market entry decisions have been found in the construction literature. After attending to the day-to-day tasks of the company, construction organizations have limited time and energy available for developing formal processes for strategic decision-making in-house. For this reason, the trade association, Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), is interested in building a market entry decision-making framework to improve the decision process for its members.

The purpose of this research study is to create a decision-making framework specifically for union sheet metal contractors to increase their likelihood of success in market entry. With the help of the New Horizons Foundation (a sheet metal industry research group) and participation from SMACNA members, the current state of practice is investigated, decision factors are prioritized, and a step-by-step framework is developed. Then, four industry leaders apply the framework to real world decisions by retroactively considering the steps to previous market entry decisions.

4.3 Existing Decision Aids for the Construction Industry

A thorough review of the construction literature revealed eight existing market entry decision aids for construction contractors. All eight aids are specifically designed to help contractors enter a new international market (Han and Diekmann 2001;Dikmen and Birgonul 2004; Dikmen and Birgonul 2006; Ozorhon et al. 2006; Gunhan and Arditi 2005; Cheng et al. 2011; Tang et al. 2012; Kim et al. 2013). Each of these studies provides a very useful, formal structure from which to base international market entry decisions, though none specifically address expansion into new domestic markets or different types of market opportunities like adding a trade, service, or new market sector. These sources also rely on mathematical models to take in inputs and provide decision outputs, many times hiding the logic mechanisms from the decision maker.

The construction literature was again consulted to address the gap of specific application to only international market entry decisions. This time, a review was conducted for the more generic discussion of strategic decision-making, which includes market entry and many other strategic level initiatives. Four relevant sources were found. Warszawski (1996) provides and extensive summary of the strategic planning activities of 13 large construction companies and maps these practices onto current organizational theory. Similarly, using an industry survey, Chinowsky and Meredith (2000) provide a list of strategic best practices. These sources are helpful to understand industry practices, but it is not made apparently obvious how contractors should use this information in their own decision-making efforts. Venegas and Alarcon (1997) shows the application of a conceptual and mathematical model, and Price (2003) creates a strategic framework based on nine case studies of highly successful contractors and consultants. Though the

sources provide useful guidance for construction firms, the methods can be complex for smaller, specialty firms.

This research addresses a gap in knowledge by developing a framework specifically for specialty contractors, who are traditionally small to medium sized organizations. The framework is flexible enough to apply to several types of market entry decisions while remaining practical and easy to use. Grounded in current practices by sheet metal contractors, this framework addresses the elements of decision-making most important to successful outcomes by enhancing the processes that industry members use today.

4.4 Objective, Research Questions, and Iterative Approach

The objective of this research is to create a standard process for domestic market entry decisions specific to the needs of union sheet metal contractors. Three sub-objectives help to focus the study:

1. Determine the current processes and best practices used for market entry decision-making in the sheet metal industry,
2. Identify motivations leading to market entry by sheet metal contractors, and
3. Develop a standardized decision process that improves market entry decision outcomes.

The sub-objectives are further broken down into eight corresponding research questions, shown in Table 11.

Table 11: Objectives with Corresponding Research Questions

Obj	Research question
1	Who is typically involved in making market entry decisions?
	What are the major factors sheet metal contractors consider before entering a new market?
	What are common timeframes for making market entry decisions?
	How do sheet metal contractors typically make a market entry decision? What is the process?
2	Why do sheet metal contractors grow through market entry?
	What are the most common types of market entry attempted by sheet metal contractors?
3	How often are sheet metal contractors successful in entering a new market?
	Does a standard framework improve the market entry decision-making process?

Both qualitative and quantitative data are collected from five data sources to answer the eight research questions. Table 12 lists the sources of data and the type of data collected from each source. One of the data sources, existing literature, was described in the previous section. The next section briefly describes the methods and results from the other sources: industry survey, semi-structured interviews, factor prioritization workshops and expert panel discussions.

Table 12: Type(s) of Data Collected from Each Data Source

Source	Qualitative	Quantitative
Existing literature	X	X
Industry survey		X
Semi-structured interviews	X	X
Factor prioritization workshops	X	X
Expert panel discussion	X	

Although the data sources are presented individually, the data collection and analysis approach was an iterative one with data collection and analysis from each source occurring in parallel with the others, as shown in Figure 7. Using this parallel data collection and analysis approach, findings from each source are able to inform and improve the others. For example, the literature was reviewed at the onset of the research

study for the purpose of understanding the problem, gaps in knowledge and defining the scope of the research. Then, experts in the sheet metal construction industry were engaged to provide experiential knowledge specific to these specialty contractors. With the basic understanding gained from the literature and experts, an industry survey was conducted. The literature was then reviewed for the second time to determine whether or not the survey results are consistent with previous findings and to understand if existing studies address the sheet metal specific needs uncovered by the survey. The initial literature review and then the more targeted reexamination of the literature were both used to inform the subsequent semi-structured interviews and factor prioritization workshops. Continuing this iterative interaction of data sources, the research path in Figure 7 can be thought of as a mountain with a series of switchbacks, allowing the research to continue to build up evidence. Once elevated, the evidence from all five data sources supports the market entry decision-making framework that is developed in section 4.7.

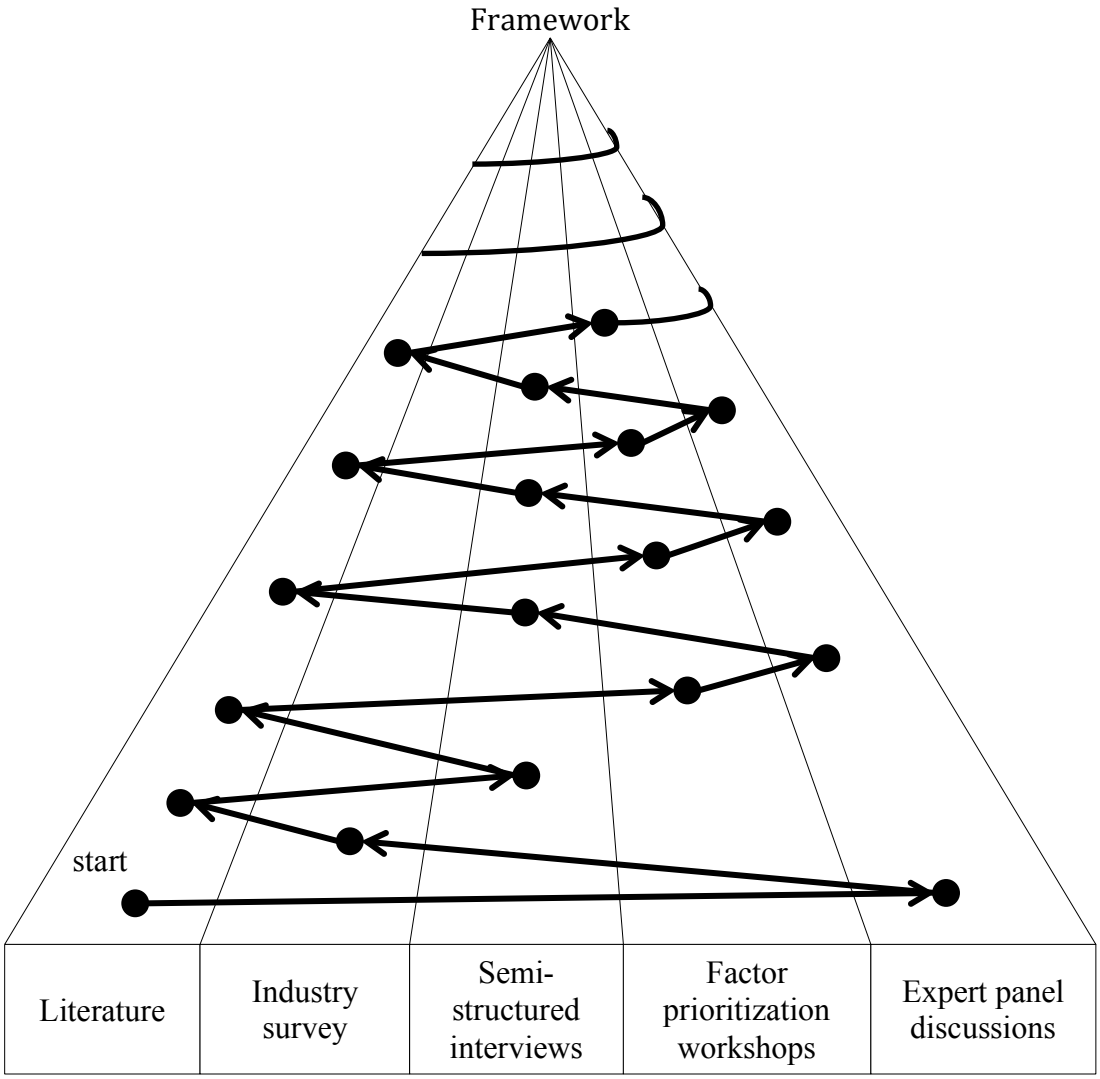


Figure 7: Iterative Research Method

4.5 Data Collection

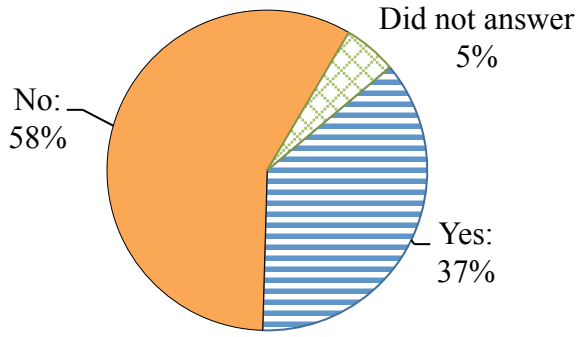
The following subsections describe the data collected from each of the four remaining data sources: industry survey, semi-structured interviews, factor prioritization workshops, and expert panel discussion. These subsections are meant to give the context of the study and describe previous learning from this effort. Analyses of the semi-structured interviews and prioritization workshops are discussed in full detail in Chapter 2 and Chapter 3.

4.5.1 Industry Survey

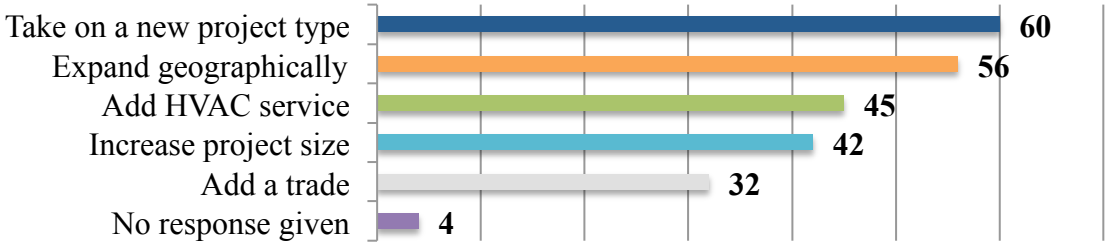
A five-question industry survey was sent to the SMACNA email list to understand some of the current practices in market entry decision-making. The email list included 3,784 individuals at the time of the survey. Ninety-three responses represents 2.5 percent of the individuals surveyed, and 6 percent of the companies surveyed. Seventy-three percent of the responders are company leaders (owner, president, CEO), 19 percent are upper management (vice president, divisional leader, COO, CFO), and 8 percent are project managers. Due to the low response rate, it is difficult to make generalizations to the larger population of SMACNA members with the survey alone. However, the survey results provide motivation to continue the study and a starting point for developing interview questions. Also, similar results were found during semi-structured interviews, strengthening the findings.

Survey responses for the first four questions are found in Figure 8. Fewer than forty percent of respondents have a written strategic plan at their company, which may indicate either a lack of guidance in how to prepare a plan or that contractors do not prioritize such activities. Although fewer than half have a strategic plan, 89 of the 93 respondents (96%) have made a strategic market entry decision in the past 10 years. Taking on a new project type and expanding geographically were the most common types of market entry tackled. A significant motivation for continuing the study was finding that, although most respondents are making market entry decisions, only 6 percent have formal written decision process to follow. The decision makers in most cases include the top leaders (owner, president, CEO) and upper management (vice president, divisional leader, COO, CFO) making them the target participant for future interviews.

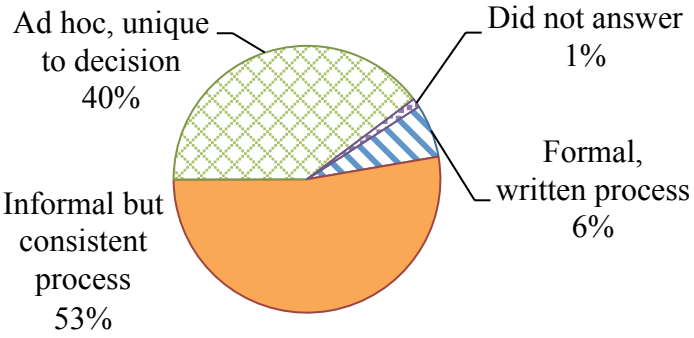
Question 1: Does your company have a written strategic plan?



Question 2: Check all of the market decisions for which you have been involved as a leader in the past 10 years:



Question 3: How does your company make decisions about entering a new market?



Question 4: Who is typically involved in advising your company's market entry decisions? (Check all that apply)

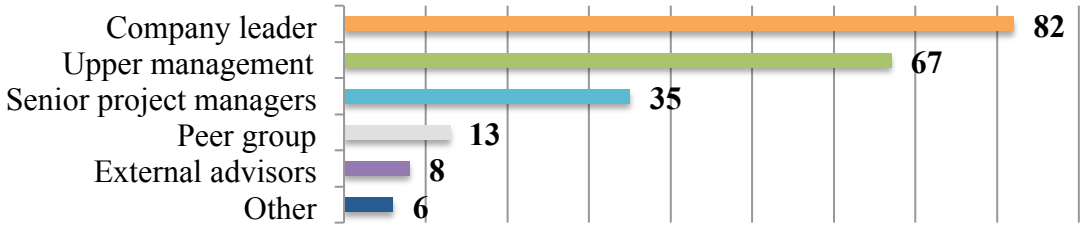


Figure 8: Results of First Four Questions on Industry Survey, N=93

The fifth survey question (not pictured in Figure 8) asked for contact information from participants. Figure 9 maps the respondents by state.

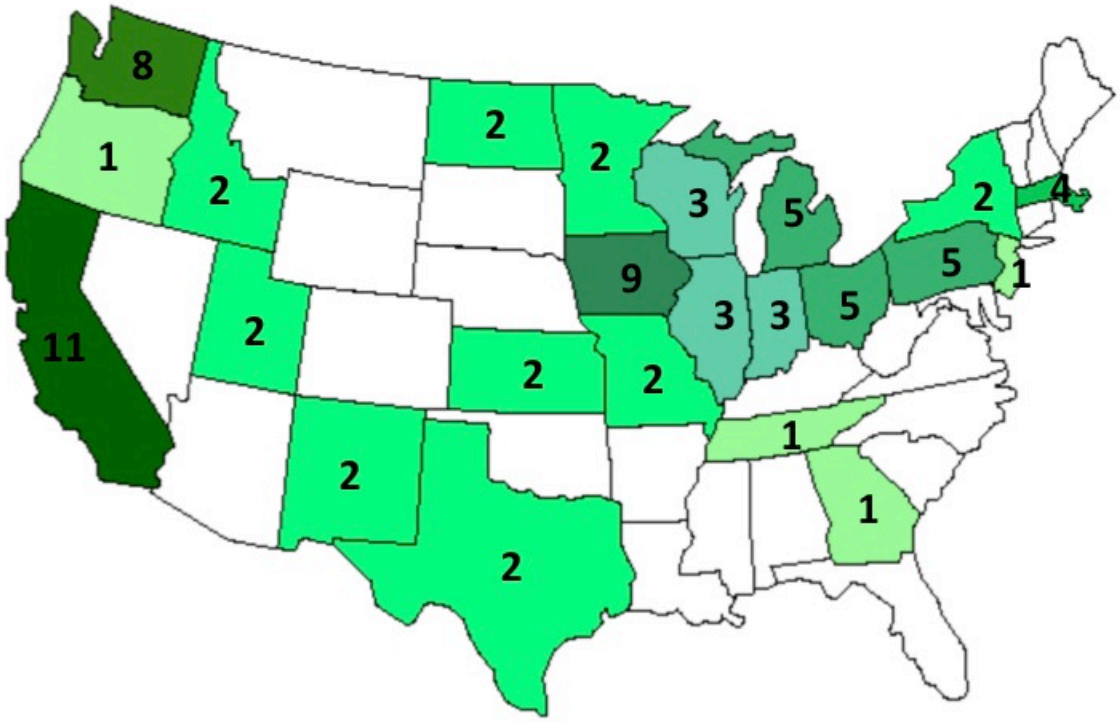


Figure 9: Distribution of Survey Respondents by State, N=93

4.5.2 Semi-Structured Interviews

A multiple case study method was used to analyze data collected primarily using semi-structured interviews. Data were collected for 30 market entry decisions by interviewing company leaders involved as decision makers. Each decision was compiled into a narrative and sent back to the interviewee for review.

After confirming the facts and tone of the narrative, each case was analyzed for alignment between the reasons for entry, decision process used, factors considered, and measures of success used to describe the outcome of the decision. Half of the decisions were aligned, meaning the entire decision process followed logically from the

decision maker's initial intention. The other decisions suffered from two types of misalignment: (1) measures of success were not related to the initial goals, and (2) motivations and reasons for entry were not well defined before making the market entry decision. The first type of misalignment, measure of success not related to initial goals, did not affect how participants rated their decision's success. The second type of misalignment, in which clear motivations and reasons for entry were not defined, correlated to a much lower average success rating (2.3 out of 5) than the 3.7 average assessed by the interviewees. In fact, none of these decisions with unclear reasons for entry were rated higher than a 3 out of 5. Statistical testing shows these findings are substantial: a Mann-Whitney U-test found a statistically significant difference between the median success ranking of decisions with clear motivations versus those without clear motivation (p-value = 0.002).

In addition to within case alignment, cross-case themes and patterns were identified. High level topic areas from each case were partitioned using eight category codes: decision process, decision makers, factors considered, timeframes, characteristics of the champion, motivation to enter the market, measures of success, and lessons learned. The major themes and patterns affecting decision success are: (1) decisions that assess strategic fit of the market early are regularly successful, (2) strong support from a top leader in the company increases likelihood of success, and (3) having the wrong person champion the market was the most cited reason for unsuccessful entry. More details about the patterns of success and multiple case study analysis can be found in Chapter 2.

4.5.3 Factor Prioritization Workshops

Key decision factors were collected from both the literature review and semi-structured interviews. Twenty-three factors remained after combining the initial factors list into definitions that could be independently evaluated. Once the factors were compiled, industry members prioritized the factors based on their importance to success in market entry.

Four prioritization workshops ranked the 23 identified factors. Participants were given a market entry decision-making scenario, which was changed for each workshop, and, first, individually ranked the top ten factors from the list that are most important to making a successful decision. After individually ranking the factors, participants were organized into small groups of five to eight individuals and again asked to rank the top ten factors as a group. Group assessments were scored (10 points for a first place ranking, 9 points for second, and so on) and summed to rank the factors for the session.

Eight factors ranked in the top ten in three or four workshops: strategic fit; experience and abilities of the champion; market need; investment capital; profit projections; startup costs; competition in market; and competitive advantage. Because they continually appear as a top ten factors regardless of the scenario, these *essential eight* factors are considered important during the evaluation of all market entry decisions. Details about the factor prioritization workshops and their results were described fully in Chapter 3.

4.5.4 Expert Panel Discussions

Three types of expert panels were used to provide open discussion about the findings from each data collection method. The first panel, the local expert sounding board,

consisted of three individuals, each with over 35 years of experience in the construction industry. These experts reviewed findings from other data collection methods and provided elaboration based on experience. The second panel, the project coordination team, ensured the research effort stayed on track to fit the needs of the New Horizons Foundation, SMACNA, and the sheet metal industry. This panel consisted of three representatives from the New Horizons Foundation and SMACNA. The third panel, the New Horizons Foundation board, reviewed the research progress annually. This panel was made up of approximately 15 leaders from the sheet metal industry who were willing to provide feedback on the research approach.

4.6 Summary of Data Collection Results

Findings from the five total data sources provide answers to the first seven of the eight research questions posed by this study. Each research question was examined using multiple data sources allowing for triangulation. Triangulation is the use of multiple methods or data sources to study a single phenomenon (Denzin 1970). Similar findings from multiple data sources increase the credibility of the results.

The first research question, "Who is typically involved in making market entry decisions?", was explored through the industry survey, semi-structured interviews, and literature. Eighty-eight percent of survey respondents and 100 percent of the semi-structured interviews declared the company leader (owner, president and/or CEO) was involved in making market entry decisions for the company. Other members of upper management (division leader, vice president, COO, and/or CFO) were cited as decision makers by 72 percent of survey respondents and 73 percent of semi-structured interviews. Other decision makers include senior project managers (34% survey, 10% interview),

peer group (14% survey, 13% interview), and other external advisors (9% survey, 7% interview). The literature cited senior level managers and company executives as market entry decision makers. The industry survey, semi-structured interviews, and literature each point to the company leader and upper level management as the most likely decision makers for market entry decisions in the sheet metal industry.

The second research question, "What are the major factors sheet metal contractors consider before entering a new market?", was explored through a review of the literature and semi-structured interviews. Forty-six factors were found in the literature and 45 factors were named during semi-structured interviews. Forty factors (89%) overlapped, appearing on both lists. The factors were further analyzed through factor prioritization workshops that involved 130+ industry members. The workshops are described in full detail in Chapter 3, and resulted in the *essential eight* decision factors (strategic fit, experience and abilities of the champion, market need, competition in the market, competitive advantage, startup costs, profit projections, and investment capital), which appear consistently as top priority factors.

The third research question, "What are common timeframes for making market entry decisions?" was explored through semi-structured interviews and expert panel discussion. Majority of the interviews (65%) indicate market entry decisions take longer than six months of deliberation. Two expert panels agreed that the six month timeframe is reasonable based on their industry experience. However, the experts felt prescribing a timeframe in which contractors *should* deliberate does not make sense in many situations because often the contractor cannot control how much time is allotted. For example, an opportunity to acquire a company may only be on the table for a month or two.

The fourth question, "How do sheet metal contractors grow through market entry?" was addressed in the literature, industry survey, semi-structured interviews, and expert panels. Price (2003) provides a four-phased approach to strategic decision-making developed through case study analysis of large construction companies and consultants. The survey and interviews indicate that few sheet metal contractors have such a formal approach. Only 6 percent of survey respondents and 7 percent of interviews indicate written, formal decision processes are used by sheet metal contractors making market entry decisions. Experts agree stating the strengths of specialty contractors typically lie in construction operations and not as much in strategic business management making decisions like market entry somewhat intimidating and unstructured.

The fifth research question, "Why do sheet metal contractors grow through market entry?", was addressed in both semi-structured interviews and panel discussions. The findings from both sources varied greatly and were specific to each decision's circumstances.

The sixth and seventh research questions, "What are the most common types of market entry attempted by sheet metal contractors?" and "How often are sheet metal contractors successful in entering a new market?", did not have consistent findings among the data sources. The most commonly cited type of market entry in the interviews, adding a trade, was the least common type of market entry according to the survey. Interviews also claimed decision success in 16 of 30 cases, but the literature suggests only 1 in 5 market entries end successfully. Both of these contradictions are likely the result of contractors' bias to focus on and voluntarily report on successful decisions rather than unsuccessful ones.

The findings from each of the first seven research questions are summarized in Table 13. The next section describes how these findings were applied to the development of a market entry decision-making framework.

Table 13: Results of First Seven Research Questions

Obj	Research question	Results
1	Who is typically involved in making market entry decisions?	The company leader (88% survey, 100% interview) and upper management (72% survey, 73% interview).
	What are the major factors sheet metal contractors consider before entering a new market?	A total of 51 factors were identified by the literature review and interviews with 89% overlap. The workshops identified eight consistently important factors.
	What are common timeframes for making market entry decisions?	Most interviews (65%) report their decision took six months or more, which correlated with a higher success rate. Experts added say the timeframe is likely circumstantial.
	How do sheet metal contractors typically make a market entry decision? What is the process?	Only 6% of survey respondents and 7% of interviews indicate written, formal decision processes are used by sheet metal contractors making market entry decisions.
2	Why do sheet metal contractors grow through market entry?	Reasons vary based on the specific decision.
	What are the most common types of market entry attempted by sheet metal contractors?	The research methods identified the common types of market entry: expand geographically, add a trade, new market sector, and add HVAC service.
3	How often are sheet metal contractors successful in entering a new market?	The literature cites a 20% success rate.

4.7 Framework Development

Data collection and analysis, as described in the previous section, address the first two sub-objectives of this research: (1) determine the current processes and best practices used for market entry decision-making in the sheet metal industry, and (2) identify motivations leading to market entry by sheet metal contractors. This section describes

how the previous findings are combined to meet the third sub-objective: develop a decision-making framework to meet the needs of contractors. The goal of framework development is to use as many elements of current practice as possible to create a tool that feels natural and useful for sheet metal contractors. Experts in the industry were engaged in an iterative process of tool development, feedback from experts and modification. Details of the iterations and experts are provided in the next section on applicability of the framework.

4.7.1 Target Audience and Tone

The industry survey found the company leader and upper management to be the most common decision makers in market entry decisions. In agreement with the survey, semi-structured interviews found the company leader was present in all market entry decisions studied and other members of upper management took a decision-making role 73 percent of the time. For this reason, the framework was designed for company leaders and upper managers of specialty contracting organizations. This means the framework assumes the user has a working knowledge of the overall strategic direction of the company; relationships with bankers, insurers, accountants, etc.; access to company financial information; and influence to motivate employees to follow the decision.

4.7.2 Introductory Material

The introductory section of the framework first describes the intended use: to serve both a regular planning cycle and an impromptu decision-making opportunity. This intention was set because the case studies and survey found market entry decisions in the sheet metal industry rarely occur as part of an organized planning program and are most often handled in an ad hoc fashion. Twenty-eight of the thirty case study decisions (93%)

came about from an unexpected opportunity rather than a planned strategic effort. Only 37 percent of survey respondents and 23 percent of the case studies answered "yes" to having a company strategic plan.

Next, the introduction uses the research to motivate use of the framework. The motivation is grounded in the literature and data analysis. Literature suggests a standard decision process leads to better outcomes (Brinckmann et al. 2010, Dean and Sharfman 1996, Papadakis and Barwise 1998). However, only 6 percent of survey respondents and 7 percent of the case study decisions use a formalized, written decision process.

Finally, the introduction describes the scope of the framework using a significantly modified version of the Product-Market Strategy Matrix (the Ansoff Matrix) from Ansoff (1957). The matrix used for the framework is presented in Figure 10. The framework was intended to serve those making a decision in the top-right or bottom-left quadrants. Growing market share (top-left) was not considered by this study to qualify as "market entry" because these contractors do not change the type of products or services nor the customer base served. Fully diversifying by offering a new product to an unfamiliar customer base has been shown to be very risky in the construction industry, so the framework encourages contractors to consider a less risky approach.

		Where we work/ Who we work with	
		Same	**New**
What we do	**Same**	 Not considered market entry (not applicable)	○ Geographical expansion ○ Size of projects ○ Type of projects ○ Type of customers
	New	○ Add a new trade ○ Add HVAC service ○ New technology ○ New process	 Too much risk (not applicable)

Figure 10: Research Scoping Matrix Shows a Focus on Market Entry Decisions in the Top-Right and Bottom-Left Quadrants (Adapted from Ansoff 1957)

4.7.3 Decision Phases

After the introductory material, the framework follows a three-phased process, shown along the left side of Figure 11. The phases are based loosely on the findings from Price (2003), which describes a four-phased strategic management framework developed from nine case studies of large construction companies. Expert advisors from the sheet metal industry were presented with the four phases from Price (2003) –strategic review, data collection and analysis, strategic planning, and implement strategy. After modifying the language to fit that of the specialty contracting industry and combining the last two phases, definition (Phase 1), analysis (Phase 2), and planning (Phase 3) were chosen to represent the current best practice in the industry. These phases were compared to the processes sheet metal contractors used in the case study decisions and were found to be inclusive of the current industry methods.

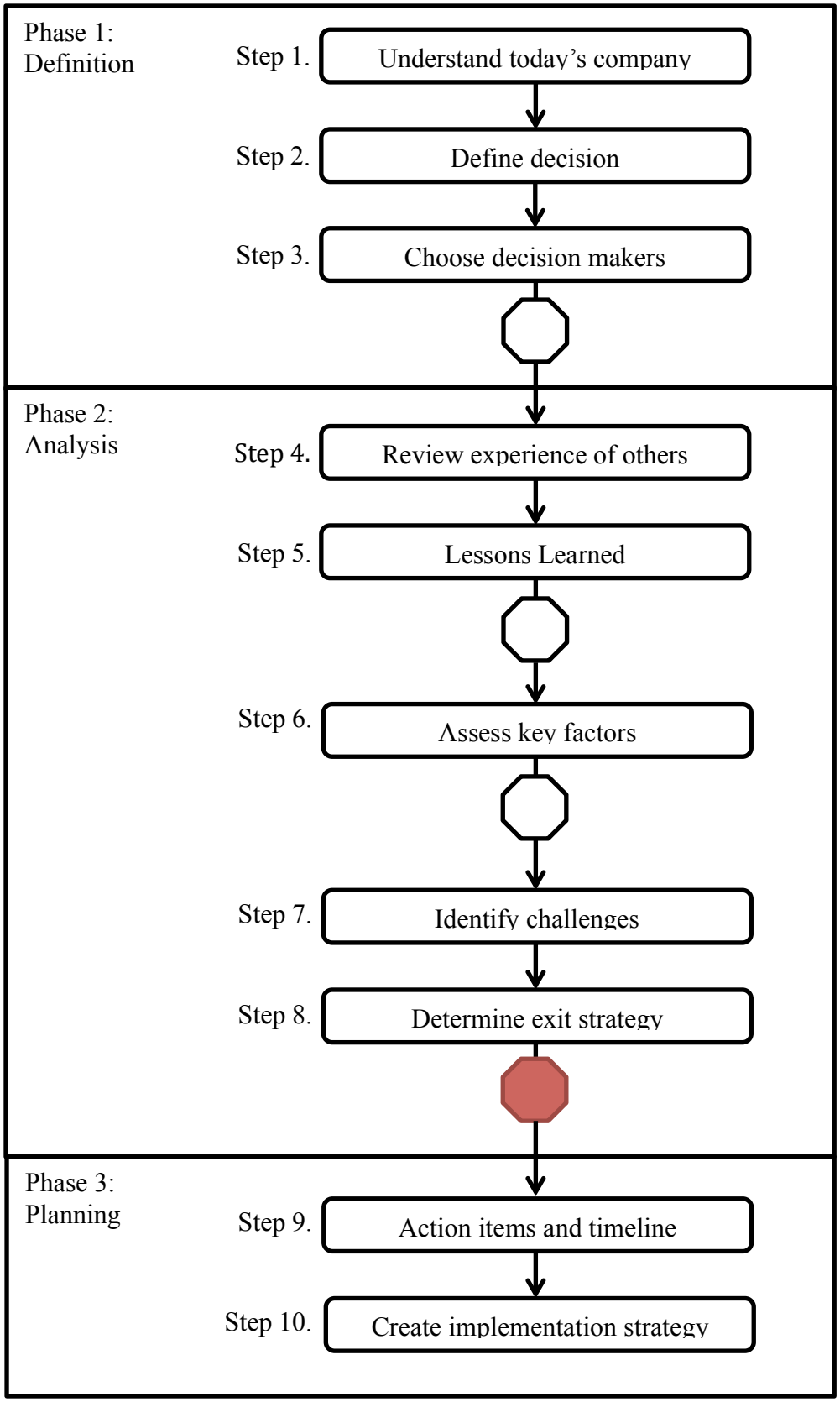

Phase 1:
Definition
Step 1.
Understand today's company
Step 2.
Define decision
Step 3.
Choose decision makers
Phase 2:
Analysis
Step 4.
Review experience of others
Step 5.
Lessons Learned
Step 6.
Assess key factors
Step 7.
Identify challenges
Step 8.
Determine exit strategy
Phase 3:
Planning
Step 9.
Action items and timeline
Step 10.
Create implementation strategy

Figure 11: Market Entry Decision-Making Flowchart for the Sheet Metal Industry

4.7.4 Decision Steps

While developing the steps that define each decision phase, the advice from Price (2003) was noted, "Given that there are many different approaches to strategic development, care must be taken to ensure that any recommended frameworks or processes are not over prescriptive but permit a degree of flexibility that ensures the characteristics and needs of individual [organizations] are taken into account." The current framework was designed as a thinking guide to ensure contractors consider the often-overlooked elements that impact market entry success and not as an overly prescribed, rigid process. To maintain this intention, steps and the tools provided to accomplish each step are basic and allow flexibility to be modified.

The ten steps imbedded in the three-phased approach come from common market entry issues identified during the data collection and analysis phases of this research study. Phase 1, Definition, is made up of three steps: (1) Understand Today's Company, (2) Define Decision, and (3) Choose Decision Makers and Advisors. These steps come directly from patterns in the multiple case study analysis. Decisions that started with an assessment of strategic fit, had clearly defined decisions, and clear intentions were more likely to be rated as successful than those that did not. No effect on success could be traced to the identity of the decision makers or advisors, so Step 3 simply provides lists of people who have historically made up decision maker and advisor groups.

Phase 2, Analysis, contains steps 4 through 8: (4) Review Experiences of Others, (5) Lessons Learned, (6) Assess Key Factors, (7) Identify Challenges, and (8) Determine Exit Strategy. Steps 4 and 5 address the learning from Lovallo et al. (2012), considering a

larger number of analogous decisions can improve forecasting and creativity in developing alternatives. Step 4 directs contractors to think of examples from their own experience and the experience of others to broaden their perspective. The case study narratives for each of the 30 decisions in this research are provided as an appendix to the framework to aid in this step. Step 5 summarized the lessons learned from several case study decisions to reiterate the most common challenges. Steps 6 through 8 focus on the details of the decision at hand. The assessment of decision factors in Step 6 provides tools to assess the *essential eight* factors as determined through the prioritization workshops. Steps 7 and 8 were included to address specific issues experienced time and again by industry experts. These steps are designed to combat "groupthink", a group decision-making bias to seek concurrence over rationality (Janis 1973), while brainstorming potential challenges and strategically planning ways to tackle the challenges that are identified.

Phase three concludes the process with Steps 9 and 10: (9) Action Items and Timeline, and (10) Create Implementation Strategy. These items were not present in the case studies, but are regularly cited as best practices in the literature.

Also included in the process flowchart (Figure 11) are four "go/no go" decision points, sometimes called phase gates, which are represented by octagons. At these points, contractors are encouraged to reflect on the assessment process. Choosing "go" means the contractor believes it is worthwhile to continue analyzing the market. Choosing "no-go" means critical issues have come up making it impractical to continue. Pausing periodically to reflect at logical points in the process is intended to encourage a thoughtful approach to making a market entry decision.

The steps and go/no-go points provide a practical approach to market entry decision-making that is grounded in current practice. Few sheet metal contractors have a standard decision process within their organizations. This framework provides the structured approach for contractors who have limited resources and energies to create their own.

4.8 Applicability of the Framework

Four experienced industry professionals reviewed the framework during two sessions. This section discusses the details of each session and the changes made based on the feedback received.

Two experienced industry members and two researchers attended the first review session. The industry members have held a variety of position in the construction industry including positions as company owners. Each has experience making both successful and unsuccessful market entry decisions.

Several days before the session, all attendees were sent a copy of the decision-making framework for review. At the session, industry members were asked to provide their initial impression of the tool and its usefulness. Both industry members were aware of the research study but had never before seen a draft of the framework. Initial impressions were positive stating "the framework looks much like I expected and hoped for" and "[the exit strategy step] alone would have helped my company stay away from some bad decisions". After initial thoughts were recorded, the group walked page-by-page through the framework document. Suggestions about aesthetics, terminology common to contractors, and document navigation were provided. One industry member

provided an additional tool to help contractors understand when a market exit is necessary. The other industry member requested an appendix with elaboration on development of the *essential eight* decision factors. All of the suggested changes were incorporated into the framework before the second review and application session.

Attendees of the second session included one researcher and two business leaders in the sheet metal industry. The business leaders that attended the second session were not present at the first review session. These leaders were sent the revised framework several days before the session and were asked to reflect on a market entry decision they had made in the past and retroactively apply the steps and phases. During the session, the group walked through the framework page-by-page and the business leaders were asked to talk through their application of the framework to a past market entry decision.

The first business leader currently serves as president of a sheet metal contracting firm employing over 100 people to do approximately $20 million worth of revenue annually. This leader applied the framework to the decision to expand service through the application of a new software package with advanced 3D modeling capabilities. This business leader found the framework easy to use and helpful with organizing thoughts and information through the decision-making process. Although it was already present in the framework, a stronger emphasis on seeking outside advisement was requested. This was based on many successful experiences in soliciting the perspective of people outside of the company. Additionally, the business leader requested more attention on accounts receivable. This is a significant issue in the construction industry because of the lag in payment for services, especially for those working as subcontractors. Sheet metal

contractors entering a new market should be reminded of the cash flow issues from payment lag, and they should be advised to have a plan in place to address this issue.

The second business leader is currently the president of a large full-service mechanical, electrical, and sheet metal contracting firm. This leader applied the framework to the decision to add electrical contracting to the company through an acquisition. The framework was found to be applicable to the situation and the information requested by the imbedded tools was reasonable. This business leader suggested several steps in the process be rearranged and presented in an order that follows the typical financial planning process used by contractors on an annual basis. This leader also suggested an implementation strategy successfully used in his company, which provides a disciplined approach to implementing change.

Both business leaders provided feedback about the usefulness, applicability and ability of contractors to complete each page. Generally, the business leaders found the framework informative and useful in highlighting the most important considerations in market entry. Based on the feedback, tools used to assess investment capital and develop an implementation strategy were simplified to serve a wider variety of organizational structures. Otherwise, the content was considered appropriate and beneficial. By applying decisions retro-actively, the business leaders noticed opportunities to rearrange the order of the decision steps and tools to provide a more logical flow of information. For example, the framework originally presented the *essential eight* decision factors in order of their importance, as ranked in the prioritization workshops. With the help of the two business leaders, these factors were reordered to logically follow a contractor's annual financial planning process: (1) estimate costs, (2) estimate profits, and (3) determine

sources of capital to cover any deficit. Reordering the steps and tools as suggested produced the framework flowchart as it is presented in this article.

After changes were made based on the second session, all four industry members were provided the framework for a final review. The reviewers found the resulting framework to be practical, easy to use, and helpful based on their many years of experience in construction.

4.9 Discussion

The framework outlined by the flowchart in Figure 10 provides sheet metal contractors with a structured approach to tackling the complexities of market entry. The framework is grounded in the current practices in the industry. The 93 survey respondents survey and 30 case studies provided valuable knowledge of processes specific to sheet metal contractors. Over 130, industry professionals were engaged in workshops to prioritize factors, and three panels of expert leaders reviewed the methods and results throughout the entire process. By engaging industry professionals in as many forms as possible, the framework reflects a process that aligns with industry norms. In addition to designing the processes and tools with industry input, leaders in sheet metal construction with market entry experience provided feedback and applicability verification for the framework based on many years of construction industry experience.

The decision-making framework from this literature was targeted specifically for sheet metal contractors because of an interest from the industry and willingness to participate in the research. Upon reviewing the result, many sheet metal contractors have noted, the process could apply to many parts of their business, even other trades such as electrical, piping, or mechanical divisions. This gives reason to believe there is

applicability in other specialty contracting organizations, beyond the union sheet metal industry, although the extent to which the materials are generalizable are unknown based on the scope of this research. Future studies might discover additional uses or adaptations of this framework to fit other specialty trades or general contractors.

4.10 Conclusion

Although the literature states a standardized decision process leads to improved outcomes (Brinckmann et al. 2010, Dean and Sharfman 1996, Papadakis and Barwise 1998), only 6 percent of survey respondents and 7 percent of the case study decisions from the sheet metal industry used a written decision process. Specialty contractors such as sheet metal professionals have limited resources to commit to strategic planning efforts such as developing a methodical market entry process. This research, informed by SMACNA members, has developed and applied a framework to be used for both regularly planned strategic efforts and market entry opportunities that appear unexpectedly. To ensure the framework is practical and easy to use, five data sources (existing literature, industry survey, semi-structure interviews, factor prioritization workshops, and expert panel discussion) were triangulated to (1) determine the current processes and best practices used for market entry decision-making in the sheet metal industry, and (2) identify motivations leading to market entry by sheet metal contractors. Grounded in a firm understanding of the industry, the framework contributes to the body of knowledge by enhancing the existing processes used by sheet metal contractors to ensure the elements of market entry most critical to success are considered in a disciplined fashion.

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5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Research Methods

This research provides the sheet metal construction industry with a practical and easy to use decision-making framework for market entry decisions. Five data collection sources were used to compile the insights from over 250 experienced industry members: existing literature, industry survey, semi-structured interviews, factor prioritization workshops, and expert panel discussions.

Three sub-objectives were created to focus the study:

1. Determine the current processes and best practices used for market entry decision-making in the sheet metal industry,
2. Identify motivations leading to market entry by sheet metal contractors, and
3. Develop a standardized decision process that improves market entry decision outcomes.

The first two sub-objectives were addressed by the analysis in Chapter 2 and Chapter 3. Chapter 4 developed a structured decision-making framework to address the third sub-objective.

The major findings from the multiple case study of Chapter 2 include a list of decision factors, an understanding of current practice, and identification of patterns correlated with success. The factors considered by sheet metal contractors when making market entry decisions informed the research about the specific concerns of the sheet metal industry. These factors overlapped findings from current aids in the literature, 89 percent of the time. Building on the factors considered, an alignment analysis of the entire decision process for each case provided an understanding of current decision-

making practices. From the alignment analysis, the research found unclear motivations for entering the new market lead to lower success ratings by interviewees. Additional patterns were identified through a cross-case analysis. Early assessment of strategic fit and support from the top company leader led to successful outcomes; meanwhile the wrong market champion was the most cited reason for an unsuccessful market entry.

The factor prioritization workshops described in Chapter 3 provide the top factors contributing to decision success for four different types of market entry decisions. These lists are based on the synthesis of knowledge from 130+ industry professionals. Comparing the top ten decision factors lists from four different workshops allowed the *essential eight* to be identified. Competition in the market, Competitive advantage, experience and abilities of the champion, investment capital, market need, profit projections, startup costs, and strategic fit consistently ranked in the top ten most important factors to market entry success. Although strategic fit and experience and abilities of the champion ranked in the top 6 for every type of market entry scenario, individuals failed to recognize these factors as the most important without the structure of the prioritization workshops. This indicates that the workshops, as designed for this study, are effective in focusing results toward the industry consensus.

Based on the analyses from Chapter 2 and Chapter 3, Chapter 4 develops a decision-making framework for market entry decision-making specifically tailored to the sheet metal industry. Participation from industry at several points during the research grounded the framework in current industry practices. The resulting three-phased, ten-step process helps contractors to focus on the elements of the decision that will likely make the biggest impact on the outcome and also helps to avoid common decision-

making issues and biases. Four experienced industry members reviewed the framework for practicality and ease of use, basing input on their many years working in many roles in the construction industry.

5.3 Recommendations for Future Work

This research provides sheet metal contractors with a structured framework for making market entry decisions. Although the three-phased framework was tailored specifically to the needs of sheet metal contractors, there may be applications to other construction trades. Future research could test the ability of the current framework for other specialty trades, general contractors, or engineering organizations. The methods developed for this study could also be used to develop more frameworks customized to the needs of the users.

In addition to research on other users within the construction industry, future analysis may also study market entry at a different level of granularity. This research chose the unit of analysis to be 'a decision'. This choice was made to allow the flexibility for several decision-making techniques to be used within a single company. However, outcomes such as profits are not consistently tracked at the decision level. Also, existing markets might benefit from a new market entry adding a complexity that is hard to track. A unit of analysis at the company level might yield interesting results about market entry's effect on the company as a whole.

Through broadening the scope of this research, either through application to more trades or additional levels of granularity, future analyses could help contractors significantly improve their strategic initiatives creating healthier organizations. Due to

the interconnected nature of the industry, saving even a single contractor from company failure can have a huge impact on many organizations.

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APPENDIX A

DECISION-MAKING FRAMEWORK

Decision-Making Framework for

New Market Opportunities

Welcome to the Decision-Making Framework for New Market Opportunities!

Market opportunities can present themselves in a variety of ways, a customer could ask your company to expand, an employee might offer up specific skills, or a market in need of service can impose a strong pull. If you are currently considering a new market, whether you systematically plan for growth or an opportunity has recently shown up on your doorstep, this framework is designed to help.

Growth through market entry provides the opportunity to develop and motivate personnel, expand the brand, better serve the customer, and mitigate market risks. Unfortunately, statistics show only *one out of five* market entry decisions are successful.

Although a standardized decision-making process greatly improves the likelihood of a successful market entry, our survey of SMACNA members indicates only *6 percent* of contractors have a formal process in place. This framework provides that decision process for you, based on input from over 200 SMACNA members.

Your Decision

Take a look at the table below. Where does your opportunity fall? Are you considering expanding the work that you do or are you adding a new type of customer? Are you planning to do both at the same time?

		Where we work/ Who we work with	
		Same	**New**
What we do	**Same**	 Not considered market entry	○ Geographical expansion ○ Size of projects ○ Type of projects ○ Type of customers
	New	○ Add a new trade ○ Add HVAC service ○ New technology ○ New process	 Too much risk

This framework was created for decisions in the top-right and bottom-left quadrants. If you are looking to increase your market share (top-left), other marketing tools are probably a better fit. If you are considering providing a new service to an unfamiliar customer (bottom-right), we encourage you to break your market entry into steps, making just one change at a time.

Decision Phases

There are three key phases of market entry decision-making: (1) definition, (2) analysis, and (3) planning. We suggest moving through the phases in order to get the best results.

Phase 1, Definition, is made up of three steps: *understand today's company*, *define decision*, and *choose decision makers*. This phase directs your attention toward how the new market fits into the bigger picture of your company's future.

Phase 2, Analysis, is a five-step process. The first two steps, *review experiences of others* and *lessons learned*, help you broaden your perspective by learning from other SMACNA contractors. The following steps, *assess key factors*, *identify challenges*, and *determine exit strategy*, dig into the details of your current decision.

Phase 3, Planning, consists of the final two steps: *define goals and timeline*, and *create implementation strategy*. These steps will help you focus on what is most important to you and to put a system into place to continually evaluate your success in the market.

Instructions

Document Navigation

The framework was designed to start at page one and continue, in order, to the end. However, if you are stuck on one step, don't let it bog you down! Skip ahead to the next step, and return later, after you have had time to gather the necessary information, people, or resources.

Flowchart

A complete flowchart including the three decision phases is provided on the following page. If you are viewing the framework electronically, clicking on a phase or step will take you directly to that point in the document. Within the chart you will also see "stop signs" which represent go/no-go decision points.

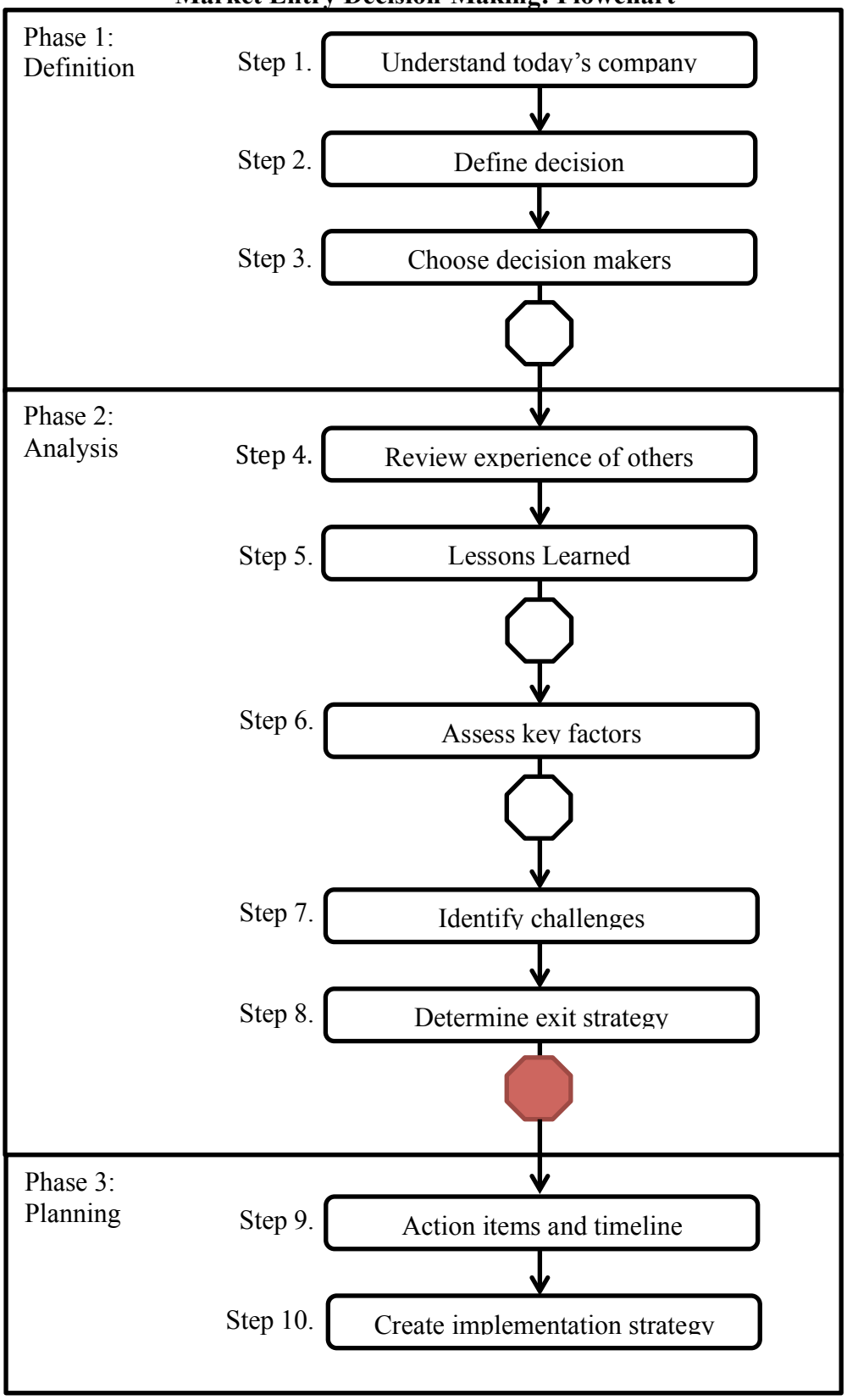
Go/No-go Decisions

You will be asked to make a go/no-go decision at several points during the decision-making process. At these points, reflect on your assessment to that point. Choosing "go" means it is worthwhile to continue analyzing the market. Choosing "no-go" means critical issues have come up making it impractical to continue.

Time of Engagement

The time required to enter a new market will vary based on the circumstances. You may have the luxury of time or there may be reasons to act quickly. Regardless, a commitment to this approach and a disciplined review will ensure you have considered the most important factors and are making an informed decision. Research has found SMACNA members who spend more time considering their entry are significantly more likely to succeed. Decisions are similar to projects; more upfront consideration and understanding improves performance.

Market Entry Decision-Making: Flowchart



Step 1: Understand today's company

"If you don't know where you are going, any road will get you there."

–Lewis Carroll, Alice's Adventures in Wonderland

How do you know which market opportunities are right for *your* company? To answer this question, you need a clear idea of how you got to this decision in the first place. Understanding your current position develops alignment among decision makers and at the end of the day, provides explanation and justification for the decision.

Consider the following questions:

- How is your customer's life better because of your business?
- What do your employees expect from your company?
- What do the owners envision the company becoming?
- What matters more than money?

These questions help by taking a step back and looking at the bigger picture. Does the new market you are considering fit into the larger purpose of the company?

Another question to ask:

- Are we all in this together?

Interviews with SMACNA members show the biggest predictor of market entry success is unwavering commitment from the top company leader(s). There will be challenges in any new market. An influential leader will be necessary during these road bumps to keep the group in alignment and moving forward.

Step 2: Define decision

We asked SMACNA members to describe a market entry decision experience. Then, they rated the success of their decision on a scale of 1 to 5. Members with clear statements about why they considered the market in the first place gave an average success **rating of 4.1**. Members who could not clearly state their original motivation gave an average success **rating of 2.3**.

Take some time now to articulate your reason for considering market entry and raise *your* success rating. Examples can be found on the following page.

Examples from SMACNA members' experience include:

- We are in constant need of a service that our company does not currently provide.
- To gain control of staffing, schedule, warranty, etc.
- A thoughtful idea came from a trade seminar/report, peer group, or internally.
- To better provide for our customer.
- A client or employee requested it.
- To improve cash flow.
- To reduce market risk by diversifying services or customer base.
- To make more money.
- *Any other reason! There are no right answers.*

Your turn. Circle above or write your own:

_____

_____

_____

Step 3: Choose decision makers and advisors

Who ultimately makes the decision may be different for each market entry situation. However, the biggest determinant of success is the commitment and support from the top leader(s) of the company.

Ask yourself:

- Who will ultimately make the market entry decision? Is it more than one individual?
- Can company leaders stand behind this decision maker with unwavering support?
- Who will serve as advisors to the decision-making process? This list might include:
    - ❑ Knowledgeable employees
    - ❑ Past/present/potential customers
    - ❑ Vendors and suppliers
    - ❑ Banker
    - ❑ Lawyer
    - ❑ Insurer
    - ❑ Accountant
    - ❑ Expert in labor market (union representative, internal staff, external network)
    - ❑ Expert business consultants (market analyst, acquisition specialist, etc.)

Go/No-go

After consideration, does it make sense to continue pursuing the market entry decision?

NO-GO, document your thoughts to this point and **stop here**.	GO, continue on to Step 4.

Step 4: Review experience of others

Strategic decisions are often made using analogies. In order to make the decision at hand, we think about a similar situation, either from our own experience or stories we have heard.

Expanding the number of analogies we use improves our ability to predict outcomes and our creativity in generating decision options.

So, how do you expand your perspective? There are two things that you can do right now.

1. Think of ten market entry decisions you or someone you know has experienced.
2. Read the stories of fellow SMACNA members included in Appendix A.

Based on at least six of the most similar decisions to yours, consider realistic expectations. For example, what can you expect for profits, startup costs, labor availability, etc.

Step 5: Lessons Learned

Implementing market entry can be full of challenges. Consider this list of lessons SMACNA members have learned while entering new markets.

- *accounting:* Many had difficulty found trouble accounting for their new market. Be sure you can separate the new market from your other areas of work so you can clearly identify sales, costs, and overhead to ensure your forecasts are accurate. Will your new customers have different invoicing expectations? Can your accounting system invoice fast enough and in enough detail for the customers in the new market?

- *conservative start:* those who were highly successful in entering a new market noted starting small (low dollar contracts and one project at a time) lessened the inevitable early learning pangs. However, dipping a toe into a new market can cause customers to question your commitment. Consider both sides and try to find the right balance for your situation. Start as small as possible to minimize early mistakes or mishaps, but not too small to limit your ability to capture loyal clients.

- *ability to plan:* Some markets are more stable and easier to plan for than others. Recognize the uncertainty in the new market and the accuracy of your profit projections. An appropriate contingency budget is critical to cope with unexpected challenges.

- *other markets:* Entry into a new market always impacts your existing markets. Anticipating the impacts the new market has on the company as a whole can help you to recognize ways to, not only gain a revenue stream from the new market, but also, enhance sales in your current markets.

- *labor issues:* When expanding geographically or adding a trade, it is important to get a feel for how the new local treats unfamiliar faces. If you are worried you are not getting honest feedback from competitors in the area, this risk that should be identified in the decision process.

- *cultural differences:* Combining groups of people can cause anxiety and sometimes pushback. Uncertainty, especially when their livelihood is concerned, can impact people in unforeseeable ways. Getting through cultural differences takes a strong commitment from company leaders.

- *learn from experiences and adapt:* Expect changes and be flexible. The commitment to learn from challenges helped many contractors enhance their new market offerings and gain a competitive advantage after initial struggles.

- *commitment is key:* Commitment to your decision to enter or not to enter a market is the biggest indicator of success. If you are wavering for whatever reason, this market probably isn't right for you. On the other hand, if you have earnestly consider this framework and decide to enter the market, move forward with confidence and dedication.

- *barriers to entry:* The barriers you are overcoming to enter this new market will not hold forever. There are likely lessons you can learn today that will help you extend your competitive advantage in this market or successfully enter a new market in the future.

- *have clear objectives:* Knowing your motivation for entry is a proven key to success. Aligning your reasons for entering the market with how you are measuring success helps everyone to clearly see whether goals are being met. When everyone understands the goals, they can adjust their actions to enhance success.

Go/No-go

Based on the realistic expectations developed in Steps 4 & 5, is this decision worth pursuing?

NO-GO, document your thoughts to this point and **stop here**.	GO, continue on to Step 6.

Step 6: Assess key factors

Through 150 individual assessments and 27 group assessments, the following eight factors were determined to be highly important in ensuring a successful market entry experience. These *essential eight* factors were consistently important for all types of market entry decision in many geographical locations.

Basic tools to assess each factor are provided on the following pages and are linked to the checklist below. Use the checklist below to ensure you have fully considered each of the *essential eight* decision factors.

Essential Eight:

- ❑ Strategic/cultural fit, (p.10)
- ❑ Experience and abilities of the champion, (p.10)
- ❑ Market need, (p.11)
- ❑ Competition in the market, (p.12)
- ❑ Competitive advantage, (p.13)
- ❑ Startup costs, (p.15)
- ❑ Profit projections, (p.16)
- ❑ Investment capital, (p.17)

Another eight factors received very high importance rankings in certain situations. Take a look at the list and consider whether these factors will be important for your market entry decision.

Others to consider:

- Bonding company acceptance
- Contract requirements
- Customer acceptance
- Knowledge of market
- Labor commitment
- Staff availability
- Standards and regulations
- Support from organization

Strategic/cultural fit:

Definition: fit of the new market with the company's overarching strategies, competencies and culture.

Assessment of strategic and cultural fit is so important that it was completed in Step 1, *Understanding Today's Company*. For more guidance, see the Strategic Primer in Appendix B.

One SMACNA member's experience:

After using pre-sectioning and prefabrication for years, this SMACNA member made the decision to build a state of the art facility to enhance these processes. Upgrading the facilities was an expensive undertaking, so to ensure that the effort was worthwhile, the company made a cultural commitment to pre-sectioning and prefab. Now, instead of having to convince managers to use prefabrication, it became the default. A project leader today has to prove why prefab is NOT the right choice for the job. What seems like a small change, changing the default process, can have huge effects on the acceptance of a new process or market.

Experience and abilities of the champion:

Definition: capabilities and drive of the person who will champion the new market.

Choosing the right person to champion your new market is more of an art than a science. The case studies collected from SMACNA members show a mix of external parties, internal project managers, and company leaders stepping in to take on the champion role. A successful champion can come from any of these groups.

Below are some criteria used by SMACNA members to evaluate a champion's capability and fit:

- technical qualifications/certifications
- gets along with customers
- fits in well with our company (leaders, staff, etc.)
- trustworthy
- hard-working
- understanding of the market
- commitment to vision of new market
- willing to accept some of the market risk

Market need:

Definition: current size, and potential growth or shrinking of the new market.

Conducting your own market research:

- Consult your lead and proposal list (even if it is not a formal list):
    - How much of the work is new construction work?
    - How much is renovation/repair/remedial work?
    - Can you detect any geographic trends?
    - Which clients produce the most projects?
- Ask your decision makers/advisors. This may include:
    - Knowledgeable employees
    - Past/present/potential customers
    - Vendors and suppliers
    - Banker
    - Lawyer
    - Insurer
    - Accountant
    - Expert in labor market (union representative, internal staff, external network)
    - Expert business consultants (market analyst, acquisition specialist, etc.)
- Helpful resources:
    - SMACNA market share report
    - http://www.construction.com/your-field/subcontractor-smb.asp
    - https://www.smacna.org/business-management
    - https://www.agc.org/learn/construction-data
    - http://www.census.gov

Competition in the market:

Definition: the existing competitive nature of the market.

Use your resources, (owners, vendors, trusted industry peers, union leaders, existing employees, your SMACNA chapter, the phonebook, Google) to identify potential competitors in the new market. Note the services each competitor provides and the strengths and weaknesses of each competitor. Identifying strengths and weaknesses can help your team address weakness in the market or emulate strengths.

(1)	(2)	(3)	(4)
Competitor:	Services provided:	Strengths:	Weaknesses:

Another important factor is your position along the supply chain. Will you have adequate access to the resources and customers?

Access to resources-

Estimate the following about the resources for your intended market:

- Acceptance from vendors
- Ability to secure quality labor
- Hiring pool (project managers, support staff, etc.)

Access to customer-

Estimate the following about the customers in your intended market:

- Customers willingness to change (especially at the Project Manager level)
- Type of purchase (bid, negotiated, etc.)

One SMACNA member's experience:

As the company leaders were assessing different geographical markets, they determined the target market to have little competition. What they did not know was that the multiple labor unions in the area exercised a lot of power. Additionally, the locals were slow to trust a contractor they have never worked with in the past. Had the leaders assessed this risk before entering the market, they would have spent more time gaining the trust of the labor unions before bidding for projects in the area.

Competitive advantage:

Definition: edge or niche the company may possess over others in the new market.

SWOT analysis stands for strengths, weaknesses, opportunities, and threats. It is a tool to bring awareness to all parts of your new market environment, internal and external, positive and negative.

SWOT rules:

- Strengths and weaknesses are internal to the company (for example, state of the art sectioning abilities or less disciplined project planning)
- Opportunities and threats are external, outside the company's control (for example, underserved niche market or unexpected increase in competition)
- Everything is measured in relation to the competition
- Must be specific (for example, everyone thinks they have good foreman, it is not specific; "having the only foreman in the market with megaproject experience" is specific)
- All ideas are welcome
- Items may be moved, deleted or combined after all ideas are heard

Use the table below to get started. How you might draw on your strengths to take advantage of opportunities or minimize threats? How might you improve areas of weakness to expand opportunities or protect against threats?

Internal		External	
Strengths	Weaknesses	Opportunities	Threats

Now that you have a good understanding of your new market environment, consider the three generic business strategies. The generic strategies describe ways you can carve out an advantage in your new market.

Cost Leadership: minimizing costs to the organization to either 1) increase profits by charging market average or 2) increasing market share by offering lower price than competitors.	**Differentiation:** develop products or services that are more attractive to customers because of an added value.
Focus: concentrate attention on a specific market niche by understanding the customer needs in the niche extremely well. Focus generally is not enough alone. If choosing this strategy, also choose either cost leadership or differentiation within the niche	

Once you make a choice, stick with it and make all other decisions in line with your generic strategy. Taking on multiple strategies is not advised because competing goals will keep you from excelling in any area.

One SMACNA member's experience:

A contractor developed a web-based technology that revolutionized the way orders from the field were communicated to the shop. Company leaders decided to open a new business to sell this technology to other sheet metal contractors. They saw a huge advantage in the fact that this technology was designed by a sheet metal contractor, for a sheet metal contractors. Existing competitors were software developers by trade who do not understand the day-to-day problems of construction. The technology sales company was built around this advantage. Marketing messages help, but even the software itself was designed to showcase this advantage.

Startup costs:

Definition: cost of all new system, equipment, training, hiring, etc. needed to start the new market.

The following were considered by SMACNA members when determining their startup costs:

Item	**Estimate**
Equipment	[1]
New facility/facility updates	[2]
Administrative	[3]
Inventory	[4]
Accounts receivable	[5]
Subtotal	[6]
Adequate Contingency (%)	[7]
TOTAL	[8]

Profit projections:

Definition: year-to-year projections of revenues versus costs.

A good way to manage projections is by using an income statement:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Expected Market Revenue	$0					
Expected Market Costs	$0					
Gross profit	$0					
General and Admin. Expenses	$0					
Interest Expense	$0					
Expected earnings	(pg. 15, line 8)					
Expected cumulative earnings						

You may have noticed an additional line at the bottom of the (projected) income statement above. This highlights the payback period, when to expect that your investment will pay for itself.

One SMACNA member's experience:

Continual tracking of profit projections not only helped this SMACNA member effectively grow a branch office, but it also helped them foresee problems and know when it was time to get out of the area. Following a customer to the neighboring

state was fruitful until the recession took its toll in 2009. Using profit projections helped company leaders foresee future issues and get out of the market without losing money, and for a while being highly profitable.

Investment capital:

Definition: all capital readily available to commit to the new market.

Consider the most negative cumulative year from the previous page. Also remember, the projected profits are estimates and are therefore uncertain.

Identify sources of capital that will allow you to enter the market:

Sources	Estimate
Existing cash	
Equity	
Outside capital	

- ❑ review with accountant, bank, or other financial institution

Step 7: Identify challenges

Human nature is to prefer harmony over conflict and conformity over isolation, which are beneficial for social norms such as driving on the same side of the street. However, fear of isolation and conflict in the board room causes many legitimate concerns to go unheard until it is too late. A premortem is one tool, designed by psychologist Gary Klein, for drawing out those concerns in a constructive way by creating a safe space to honestly voice any reservations about the current decision.

Here is how it works.

Invite all decision makers and decision advisors into a meeting. Tell everyone to close their eyes and let themselves relax.

Describe for the group, "I am looking into a crystal ball, and it seems as though everything in our new market has gone wrong. Really wrong. It was so bad that we are embarrassed to even bring it up in conversation and we avoid eye contact when we see each other again. No question, this was a big failure."

Allow two minutes of silent time to individually write down all the reasons the market entry went poorly. Then, go around the room and allow each person to read one of their causes that has not already been mentioned. Keep going until there are no new reasons for failure.

How this helps

By assuming the project has already failed, you have changed the group dynamics. Now, conforming means to brainstorm problems and the attendees are challenged to use their intellect to foresee issues. Why is this good? Many times, leaders are appeased when what they really need is the truth. This activity encourages staff and advisors to speak their mind before it is too late. Now, everyone's concerns are "on the table" and steps can be taken to protect against them.

Step 8: Determine exit strategy

In Step 7, you identified the foreseeable issues with entering this new market. After taking time to minimize the risks as much as possible, some uncertainty will remain. Unfortunately, there are no guarantees in market entry.

If things do take a turn for the worse, it is important to be able to recognize that *market exit* rarely comes without a cost. The table below lists some of the most common barriers (costs) to exit.

Use Columns (2) and (3) to guide your thinking exit costs.

(1)	(2)	(3)
Barrier to exit:	**How it applies:**	**How to address:**
Specialized equipment		
Specialized inventory		
Excess facility space (internal, lease)		
Labor and management employment agreements		
Impacts of customer relationship (especially when impacting your other markets)		
Lag in financial information (you sometimes sense a loss before it hits the books)		
Uncertainty of future profits (are we being realistic or hoping for the best?)		
Fulfilling existing commitments		
Loss of key personnel		
Other:		
Other:		
Other:		

Worst-Case Assessment

Reconsider your cumulative earnings line on page 16. The amount in the line now is what is expected. Use the table below to document what you believe to be the 'worst-case-scenario'. When you consider this 'worst-case' loss and the additional cost to exit, how much of a loss are you able to finance or willing to accept. That will tell you the year you need to revisit this decision and consider an exit.

	20__	20__	20__	20__	20__
Worst-case earnings					
Estimated cost to exit					
Total					

Go/No-go

Based on the identified challenges and exit strategy, do you wish to enter the new market?

NO-GO, document your thoughts to this point and **stop here**.	GO, continue on to Step 10.

Step 9: Action items and timeline

From Step 2, review your intentions for entering the market. What actions need to be taken to reach those initial goals?

List those actions in Column (1) on the following page.

In Column (2), identify the person who will be accountable for reporting back on the action. This doesn't need to be the person doing the work, but it should be someone who can provide updates and manage any issues that come up.

Use Column (3) to set a target date for completion.

In Column (4), set a time to check in on the progress.

(1)	(2)	(3)	(4)
Action:	**Responsible person:**	**Target to complete:**	**Check-in date:**

Step 10: Create Implementation Strategy

Now it is time to put your plan into action. As you move forward, make a commitment to check in with each of your action items. The actions should continually align with your intentions for entering the market (Step 2). At the designated check in time, questions to consider include:

- Will the target date be met?
- Is the action helping achieve the initial goals and intention for entering the market?
- What adjustments need to be made?
- When will I check in a next?

For more reading, here are some resources that discuss effective implementation:

- *The Balanced Scorecard: Translating Strategy into Action* by Robert S. Kaplan and David P. Norton
- *The 4 Disciplines of Execution: Achieving Your Wildly Important Goals* by Chris McChesney and Sean Covey
- The Hoshin Planning System, basics found at: https://www.mindtools.com/pages/article/newSTR_77.htm

Congratulations! You have done your part in creating an environment for success. Remember, there will be bumps along the way and commitment to your goals is a major determinant of your decisions outcome. Stick with it and learn what you can from the challenge!

APPENDIX B

CASE STUDY NARRATIVES

B.1 Add HVAC Service

B.1.1 The Service Advantage

Leaders at Accredited Mechanical, a full mechanical contracting firm, began to wonder how the company could gain an advantage by offering HVAC service capabilities. Service appealed to the leaders because it would mean they could take more control of their own system start-ups, warranty equipment, and prioritization of staff. The family leadership team does not have a formal plan for adding markets such as HVAC service, but they try to do what makes the most sense for the company at the time. The benefits of having more control by adding service along with the higher margins, availability of work, and reputation with their current customer network, service made sense for Accredited.

To get started, Accredited needed to invest in a service vehicle, new equipment and the hiring of a service manager. Scheduling the first service offerings was done very carefully to ensure that the key personnel were available to take on the work. As the demand for Accredited's service technicians grew, hiring was ramped up. Though the leadership team took the time to interview each technician, there was still quite a bit of turnover in the beginning trying to find the people who best fit to new department.

Service differed from Accredited's traditional work because the demand was less predictable due to weather and the invoices for service fell under a high level of scrutiny that required more follow up and support. However, Accredited quickly learned to adapt to these market differences to develop a successful service offering to its customers.

B.1.2 Handing the Baton

Even in the most aligned companies, individuals in leadership roles have a slightly, or sometimes significantly, different vision for the company's future. Times of ownership transition are many times accompanied by strategic decisions that shift the company's focus toward the vision of the new owner. When done in a thoughtful way, these shifts can benefit the company by expanding its reach in new directions, as Sheet Commander Inc. found.

Sheet Commander was traditionally a sheet metal contractor, but the new company owner believed offering HVAC service would greatly enhance the outlook of the business. Seizing the ownership transition opportunity, when changes are expected, Sheet Commander added a service division.

Leadership recognized that not providing service meant allowing a competitor to Sheet Commander sheet metal business come in to do this work, and at the same time, form a relationship with their customer. The recognition of adding service came from within the company, but when it came time to working out the specifics, Sheet Commander consulted with their peer group of about 12 contractors. The peer group is spread out geographically and meets twice each year. The group also communicates between meeting times through email. Using this email list, Sheet Commander was able to gather knowledge from experienced service providers about market growth, staff needs, and a variety of other details.

The service division at Sheet Commander started small, with one technician. Over the past seven years, the department has added six more technicians, a service manager, and service dispatcher and sales volumes now account for 10-20% of the

company revenues. However, this growth did not come without complication. Service requires a different mindset than Sheet Commander's traditional sheet metal work when it comes to invoicing, accounting and job cost tracking. Even today, the accounting system at Sheet Commander is set up to more efficiently track large projects that invoice monthly. Sheet Commander continues to work out solutions to these accounting differences to reduce their invoice time as much as possible and deal with the large number of low dollar tickets that a service department produces. Planning is also a challenge for a service department. Unlike larger construction projects that can be planned for in advance, service staff need to be more reactive to whenever the phone happens to ring. This uncertainty is a challenge at times for a company that is used to more structure.

Though there are challenges to adding an HVAC service department, Sheet Commander has found the benefits to be well worth it. The company feels more able to support and retain customers for, not just their service offerings, but for their sheet metal side as well. Looking back, the service division was a successful endeavor for Sheet Commander. Although, if they had the chance, company leaders may have set things up differently, creating a new company for service or a least setting up a different accounting system.

B.1.3 The Ongoing Need

Avid Mechanical regularly fields calls about HVAC systems that have unexplained issues. For many years, diagnosing these issues meant hiring a balancer to help inspect the existing system. Balancing service for the purpose of diagnosing issues became an ongoing need for Avid. As the need continued to arise over and over again, Avid grew an

interest in bringing this service in-house. The intention would never be to bid testing and balancing work, but rather, to have a balance technician available internally to more quickly and cost effectively serve their customers. Avid would also, then, have the ability to provide owner direct balancing work.

When strategic decisions about market entry arise, Avid is diligent about conducting a cost/benefit assessment. Although the cost of providing test and balance service, a vehicle and about $10,000 of equipment, was not considered a major investment for the company, they stayed true to their process. Looking beyond just dollars, Avid identified two major obstacles to their success: (1) ensuring their existing subcontractors would still provide quality test and balance quote for their plan and spec work and (2) finding the right person to build the new service around.

The president of Avid personally called many of the company's current test and balance subcontractors. He openly and honestly explained what the company intended by hiring a balancer internally. He assured each subcontractor that if Avid asked them for a quote, they would absolutely be hiring out that work, and the company would stay true to their word and never waiver. Because Avid maintained a reputation for being upfront and honest, the other testing and balancing subcontractors believed them at their word.

A second hurdle was finding the right balance technician for the job, and that took awhile. Avid was looking for not only a technically qualified and certified balance technician, but also someone who was good with customers. After much searching, Avid found the person they felt the balancing department could be built around. When the technician was identified, the new department became its own brand.

An accounting major, Avid's president saw to it that the department's books were set up in a clean and distinguishable way from the onset. To ensure that the business makes sense, it is important to be able to capture the gross profit level and identify what the overhead of running the new department is worth. Avid has been able to track this measures from day one of starting internal testing and balancing, and they have been able to adjust and correct as needed because of that.

After purposeful and controlled growth, the test and balance service currently provides Avid a significant, steady business line. Looking back, the new testing and balancing department could have grown faster with the quicker addition of support personnel. The conservative approach taken by Avid might have delayed the hiring of a project estimator/manager by approximately a year, but in the end, Avid is fully satisfied with the test and balance service. Now, after three years, test and balance has grown from sustaining one employee to seven.

B.2 Add Trade

B.2.1 Targeted Market

The decision to add a mechanical trade at Les Miller & Sons was provoked by a suggestion from an interested contractor. The appeal of the suggestion laid in the ability to create project opportunities in the light commercial market, which required mechanical capabilities. Together, the president, vice president, and senior project managers discussed the decision.

At that time, circa 1999, the company was less analytic than it is today. However, factors such as start-up costs, equipment costs, and one- and five-year income projections were considered as part of the decision process. Most of the market information

came from the potential leader of the new mechanical department, a trusted friend who worked well with Miller & Sons in the past and who had worked in the mechanical industry for many years.

Two alternatives were considered; adding mechanical contracting as a new trade to the company by hiring labor and buying equipment or subcontracting the mechanical piece for light commercial project opportunities. After approximately three months of analysis and deliberation, the decision was made to introduce a mechanical component to the company. The biggest apprehension from management was that mechanical contractors in Miller & Son's current markets, Industrial and Healthcare, would see this as a competitive move. They assured their regular working partners that the move was solely to enter into light commercial and the company would not be impacted in their traditional projects.

The decision was made to bring in the mechanical contractor, but the additional trade did not last. In less than two years, Miller & Sons decided to pull out of the mechanical side of the industry. Looking back, the new mechanical department was not well supported by sales and marketing, which potentially occurred out of fear to look aggressive in the eyes of allied mechanical contractors. Also, the strictly sheet metal company, until that point, did not fully understand the challenges in the mechanical market, especially perpetual payment delays. If faced with the same decision today, the company would likely conduct a more thorough market analysis for itself, not relying solely on the future champion of the department. The management group would have benefitted greatly from learning about the new trade for themselves and likely would not have chosen to enter the new market.

B.2.2 Systematic Seconds

Previously, the board of directors had asked the management team to present a thorough business plan for adding a testing and balancing department. The comprehensive plan provided the board with confidence in the new department and successful implementation of the plan led to increased company profits.

Due to its success, the business plan approach was used again when the same company was considering adding a fire and life safety department. This attempt at writing a business plan was not as thorough as the first time management employed this technique. Managers were less familiar with the fire and life safety market than they were when analyzing the testing and balancing market. Their uncertainty was also met with a more volatile, difficult to understand market environment. All of this fluctuation made the business planning process more difficult and eventually lead to a less comprehensive, thorough analysis.

Still, enough evidence of a potential market opportunity existed in the variables that were analyzed to convince the board to move forward with adding the new fire and life safety department. Since its creation, the department has stagnated, not draining the company, but also not producing the profits that were expected. Though the business plan approach had worked for the same company, in fact, the same individuals, in the past, this market was different and did not yield the same effect from the analysis technique.

B.2.3 Labor Risk Mitigation

Family owned and run, Hunt Heating & Air Conditioning, had been considering a way to combat the liability of being a union only business, which was recently emphasized by

the peer group and industry associations of which Hunt belongs. During this time, a weatherization specialist approached a leader at Hunt asking her to buy his business. The specialist loved to sell products and services but did not enjoy the management role that came along with owning a business.

Hunt's guiding philosophy over its 75 years as a, primarily residential, HVAC contractor has been to make a difference in the lives of its customers. Weatherization provided an opportunity to provide the customers with a valuable service and add a non-union component to hedge the company's labor risk.

The core management team at Hunt, consisting of four individuals, considered the opportunity to capitalize on the champion's experience and personality fit. Weatherization had great margins, a low level of competition in the area, and little to no overhead cost. Hunt also saw a benefit in the cross referral opportunity. In 2013, Hunt initiated a Limited Liability Company for weatherization services.

The choice to move forward with an LLC protected the thriving Hunt organization from some liability concerns, but there were unforeseen accounting and database complexities. The ability to recognize two separate entities in the current accounting system was impossible. If it were not for a company manager, trained in accounting and computer science, this oversight could have been devastating. Fortunately, the manager was able to resolve the issue in-house without major monetary cost to the company, though it did take a toll on the manager's time. Never again will Hunt launch a new business venture without first full testing all of the affected systems.

B.2.4 Creating Bonds

When a relationship with the electrician on a project went sour in 2009, a customer suggested a replacement that quickly turned into a trusted partner in business. Over the next few years, this same electrician was brought on for several subcontracting commitments. The electrician performed well and fit in well with the forward thinking, improvement-based culture of mechanical contractor Kurtis Cox Corporation. By late 2012, discussions had started about bringing the electrician onboard to start a new electrical department for KCC.

Discussions leading up to the decision to add the electrical department circled around cost factors, such as budget, overhead, operations costs, and acceptance of the idea by both the customer and other construction industry members. No other direct competitor offered the entire mechanical/electrical/plumbing package that KCC was proposing, so it was important to ensure the community would accept a full MEP contactor. It was just as important that the electrician be able and willing to give up the autonomy of owning his own business for the opportunity to grow within the larger corporation. Comfort and clear understanding of the implications are imperative when the entire department hinges on one man's expertise.

In late 2013, the electrical partner and one other employee gave up their small business and started work for KCC. The intention was to start with a $500,000 sales goal for the first year. But, quick success and efficiencies recognized by the company and clients multiplied the $500,000 target by four. KCC expects about $2 million in electrical work in the first year. With a solid reputation in the mechanical and plumbing trades, the electrical department had a quick start. The ability to provide a full MEP package

was more marketable that KCC ever imagined. Now, the concern is reigning in the growth to allow the department a solid foundation.

B.2.5 Quest for Control

LIFT Sheet Metal saw the addition of plumbing capabilities as a way to gain more control over project schedules and cash flows. The move from a typically third tier sheet metal subcontractor to a second tier plumbing subcontractor would reduce the three-month payment lag by a full month, providing more timely compensation for all work. Also, the ability to schedule both the plumbing and sheet metal tasks would give LIFT a higher level of control over activities on the project site.

Since two partners left in the early 1990's, the family ownership that remained has held an ongoing dialog about LIFT's strategic direction. The addition of plumbing seemed to provide several benefits to the company, and the owners decided moving forward with two relatively small plumbing contracts was a good way to learn about the trade in a low-risk situation.

LIFT's location, near the border of two union districts, required agreements with two different locals. The plumbers' unions in the area are regulated more rigorously than the sheet metal unions. Threats of fines and removal of labor from projects is not uncommon from the local plumbers' unions. Work boundaries are strictly enforced and contractors are not able to choose the plumbers they would prefer to employ.

The cultural differences between sheet metal workers and plumbers in the area do not stop at the union hall doors. Underground plumbing work requires extra attention because fixing an improper installation is difficult and costly. The additional attention and care required in the plumbing trade has created a much slower, more meticulous

culture. As a sheet metal contractor, LIFT found out quickly that they would need to provide more oversight than originally anticipated to keep the plumbing crews working at an acceptable pace to meet the schedule. Also, there is an additional uncertainty that must be accounted for when taking on plumbing work because the contractor cannot choose their plumber. After completing two plumbing projects, LIFT found that the personality and culture fit to be poor with one contractor, but good with the other. Unfortunately, LIFT must estimate productivity for their bid package before a plumber is assigned to the project.

Because of the unforeseen nuances of working with the local plumbers' unions, LIFT has decided to withdraw from both locals. This does not, however, mean they have given up on the plumbing trade. Learning from experience, LIFT is considering other alternatives for entering the plumbing market including hiring an experienced plumber and looking into other non-union options.

B.2.6 Emerging Market

Fire and life safety provided a low cost, low competition opportunity for Val Campbell Mechanical to expand its service offerings. After learning that fire departments were unsure about how to handle calls related to inspection of fire and smoke control equipment, management at Val Campbell investigated what it would take for their company to be able to address this need.

The Val Campbell team found that the International Training Institution (ITI) would provide courses for level one and two technicians in Fire Life Safety. Also, the local Joint Apprenticeship and Training Committee (JATC) provided Fire Life Safety contractor certification programs. After a relatively small investment of time and the cost

of training and certification, the company could properly serve this new and growing industry.

The costs were worth the potential opportunity in the eyes of Val Campbell's managers, as the pressures continue to mount for more regulation of fire protection equipment in local government and permitting agencies. Once certified, risk is low, as fire life safety service is generally paid on a time and materials basis. The additional service offering also provides Val Campbell the opportunity to network with new customers and inform their new customers about the other services offered by the company. These benefits have proven the investment worthwhile for Val Campbell.

B.2.7 The Effective Business Plan

For about 40 years, Glover Corporation had maintained a staff member to perform testing and balancing services for customers, but the company did not do any competitive bidding for these services. Around 2009, a past employee approached Glover with the suggestion to expand into this market.

The owner, president, vice president and board of directors considered the proposition. At the request of the board, a formal business plan was drawn up around the idea of entering the testing and balancing market. This business plan included financial projections, reasons for entry, staff availability, start up costs, equipment costs, green building and energy saving trends, competition, growth timeframe and targeted growth. Testing and balancing was a market the company was familiar with and one where the well-established reputation of Glover would serve them well.

After careful consideration of the market through the development of a thorough business plan, the decision was made to enter into competitive bidding for testing and

balancing services. The entire decision process took approximately six months including the plan development, but has been worth the effort. Testing and balancing has proven to be a successful addition to the company for the past five years.

B.2.8 Company Character

R.W. White Mechanical is very clear about the values that the company holds. Before any significant changes are made, the company's core purpose and core values are reviewed. The idea to add a piping division, brought about by attending a construction organization's seminar, was intriguing for leadership at R.W. White and seemed to fit into, and even enhance, the company's core values.

The market that R.W. White generally serves was faced with a huge and sudden need for piping contractors. The standards for the piping industry are tougher than those of sheet metal, which was seen as a large risk by R.W. White leaders who had never before done business as a piping contractor. To ensure that the risks and opportunities were fully considered, the president at R.W. White thought through a series of decision-making steps he had developed over his years of experience. First, he fully considered why the company might want to enter or not enter the piping industry. He considered which jobs the company might seek out for piping work and reviewed the equipment and materials that would be needed to complete those jobs. He fully outlines all of the opportunities and obstacles that he could think of and considered how the company's knowledge and experience could help overcome the obstacles. A plan was developed to bid, finance and supply the work with resources and ultimately the plan was implemented and was a big success for R.W. White. Throughout the process, R.W. White uses the

plus/Delta method to understand what was going right and what could have been improved as they entered the new market.

This systematic approach to major company decisions, which starts with a review and careful consideration of the company values, has served the president of R.W. White well for many years in the industry. As the president considers his retirement, his main concern is maintaining the emphasis on the values the company has held for so long. A method of maintaining these values is documenting how the core values should be used to lead decision-making at R.W. White for years to come. The decision structure helps Martin to rest assured that the purpose and vision that has been a defining part of the company will be sustained long after his departure.

B.2.9 Resolved to Success

After a rocky start, the plumbing and piping division at Rural Sheet Metal has flourished and become the company's largest trade. Predominantly a sheet metal contractor, Rural hired a highly adept project manager with a piping background. The manager was expected to transfer his skillset from piping to sheet metal. However, he maintained an interest in plumbing and piping work and wanted to continue a bit of work in this field.

Rural obliged the project manager's curiosity by slowly stepping into the new trade. The transition to adding a plumbing and piping trade was suddenly accelerated when a piping contractor, unfortunately, went bankrupt during a job. At this point, there were about seven sheet metal contractors that traveled regionally in Rural's geographical area. However, there were only two or three plumbing and piping contractors to cover the same region. Having a piping contractor bankrupt put Rural in a tough spot; they had the choice to either sell out the remaining work as one big lump or stick with the project

and learn from the experience. The decision to stick with the project meant accepting a scary loss, but one with many valuable lessons.

Recognizing that plumbing and piping was a commodity in the region inspired Rural's leadership to commit to adding the trade to its arsenal. There were two main barriers to entering the piping side of the construction business. First, each job takes approximately 2.5 to 3 times more pipefitters than sheet metal workers. In other words, more people are needed to complete the job. Additionally, pipefitters require more training and practice before being considered proficient at their trade. Although these barrier were tough to cross, Rural got through by keeping a positive attitude, keeping their employees positive, and maintaining an unwavering commitment to adding the new plumbing and piping capability, learning from experience along the way.

The commitment to the new division hit a road bump when the division's manager decided to leave Rural. After a lot of consideration, the leadership group at Rural brought in a very intelligent and talented manager to take over leadership of plumbing and piping. The saving attribute of this leader was his trust in the vision of his superiors. He wholeheartedly followed their plan for the division and his trust in their leadership served the division well.

Sticking with the plumbing and piping division through all of the trials and tribulations was worthwhile for Rural. Not only is the division the current largest within the company, Rural rose to be the largest piping contractors in their union area in just five years.

B.2.10 Bottom Up Idea Creation

As Marrow Sheet Metal has grown, they have established a systematic method for generating ideas from within. Staff have regular meetings within their division. Additionally, Marrow has established groups for specific processes, such as talent management and business development that are made up of individuals from a variety of areas within the company. It was through one of the process groups, that a new project manager, previously from an industrial background, suggested taking on some industrial projects.

Within the multidisciplinary group, the idea gained traction. Industrial projects were attractive because they are typically contracted based on time and materials, rather than lump sum. Marrow was also interested in diversifying from purely ductwork to flatten out some of the peaks and valleys they had experienced within the market. Now, with an experienced staff member, industrial work became a viable option.

Using their established system, the idea to add industrial projects was first brought to the multidisciplinary, business development group. From there, each group member pitched the idea to the staff within their division. Only after gaining acceptance throughout the staff level was the idea proposed to company leadership. This bottom-up method promotes buy-in throughout the larger sheet metal company, which has proven to help Marrow implement innovations in the past. At the leadership level, the idea made strategic sense and the decision was made to move forward and bid industrial work.

As the idea to add an industrial division moved through the company, staff members and company leadership were encouraged to ask tough questions about the idea's viability. As each question was raised, staff were charged with developing

answers and truly thinking through any foreseeable issues. Armed with input and experience from all levels, the industrial division was added without any major hiccups.

At the time of this writing, the industrial division at Marrow is still very new. Company leaders have chosen to grow the division slowly. Initially, bidding has been a challenge because the company typically uses historical data to put their estimates together. Without a history, they do not have this type of data for the industrial sector. As Marrow gains knowledge of the industrial market, they plan to grow that side of the business.

B.2.11 Merging Cultures

Voyage Mechanical, primarily a sheet metal contractor, had been doing a significant portion of business with a single mechanical contractor. Relationships between individuals within the two companies grew as a result. When a couple of individuals from the mechanical contractor understood that Voyage was excited about developing their own piping capabilities, discussions started.

Historically, it has been difficult for the sheet metal and piping trades to work together. Cultural differences between the two trades tend to clash at every level within organizations. During discussions, the group talked about getting the sheet metal and piping departments to work together to optimize both service offerings.

Fake Name felt good about their ability to harmonize the trades within their organization and eventually brought three individuals over to start their piping effort. The mechanical contractor that the individuals left to join Voyage made it clear he was upset. A bridge had been burn between the two companies that had traditionally worked together a lot.

Shortly after joining Voyage, it was revealed that the harmonious, efficient working situation that had been envisioned was not easy to create. Instead of both sides making concessions to work together, the piping department carried on with business as usual creating morale issues within the organization. The commitments to do mostly negotiated work and bring over key customers was more difficult than anticipated for the new piping leaders, so they moved forward by getting a large portion of low bid, school contracts.

After looking through the numbers, Voyage executives conferred with other SMACNA contractors who had mechanical departments. The other contractors confirmed Voyage's suspicions, the margins were far too low to make money. Tensions rose when Voyage told the piping project managers they could not take on more school projects. Soon after, all three leaders from the piping department left Voyage. Without expertise in the piping field, Voyage was left to cope as best as they possibly could and try not to make a bad situation a fatal one for the company.

Looking back, Voyage moved forward with the piping department with little upfront planning and structuring. The startup costs were significant after signing bonuses and investment in more space to house the piping side. Although they have learned the hard lessons from the situation, in the future, Voyage will supplement their gut instincts with hard facts, considerable planning, and assessment of the risks involved.

B.2.12 Customizing Value

Communicating orders from the field to the shop is not as easy as it sounds. Innovate Sheet Metal employees spent hours on the phone trying to make sense of orders that were incomplete and difficult to interpret. Fed up with this current state of practice, Innovate

worked with a local programming company to develop a web based ordering system that is easy to use, simple to understand and effectively communicates orders from the field to the shop without ever having to pick up a telephone.

The technology worked so well “in-house”, saving 15% in direct cost in the first year, that top management saw the opportunity to market the new technology to other sheet metal contractors in desperate need of an efficient ordering system.

Innovate teamed up with their programmer and developed a new company to sell their ordering system. Soon, a vision for the new company started to develop. Putting customers first was very important because the main weakness of the competition was their lack of service and knowledge about industry operations. This is where the new company would outmatch those currently selling construction ordering software. The biggest risk the new company would face was standing out of the crowd of current providers that have regularly fallen short of customer expectations. Measures were taken to help instill confidence and trust into the customer including guaranteeing the results with a built-in system ROI calculator.

In the beginning, yearly budgets and targets were all the company had to guide them. Now, a strategic plan, independent of the sheet metal company exists for the ordering system sales company. Admittedly, the new company has changed direction regularly, but the strategic plan is always referred to and either adapted, to match the changes, or left alone and the changes abandoned.

Since very little was known about costs in the technological market, the new company proceeded slowly in its growth. A small scope would start the process. Then, analysis of financials and profit would indicate whether the company was ready for the

next step. If so, they tried a small increase in scope. Growth continues in this fashion today as the ordering technology gains popularity in the sheet metal industry.

B.3 Geographical Expansion

B.3.1 Following the Customer

A highly successful subcontracting job prompted the project owner to approach Braun & Saunders Mechanical about working on another project outside of their home state. Previously, leadership at Braun & Saunders had discussed expanding into the neighboring state and this offer gave them the opportunity to seriously consider doing just that.

A trusted project manager within the company showed a sincere interest in taking on the challenge of leading projects in the new region. It was understood that operations in the new market would have less oversight and support from the parent company than traditional projects completed by Braun & Saunders, simply due to proximity and ease. The leaders of the potential project would have to really make the project their own and this interested individual was willing to take on the challenge.

In addition to who would lead the project, the president and the CEO at Braun & Saunders discussed several other factors when considering the new market. They looked at potential profits, support from the bonding company and the bank, the cultural and personality fit, the construction community's response, commitment from the area labor union, and treatment from potential subcontractors. Suppliers would not be an issue as Braun & Saunders planned to work with manufacturers that they have always used. After brainstorming all the potential factors the company leaders could come up with, the viability of the move seemed to hold up.

After discussions with the potential new leader, the decision was made to expand geographically and accept the owner's request to do the project outside of Braun & Saunders' typical geographical bounds.

When Braun & Saunders expanded in 2005, the operation was highly project focused. As customers in the area noticed the productivity, safety and quality coming from Braun & Saunders' crews and began requesting the sheet metal contractor for their own jobs, the project focused group of employees transformed into a highly profitable branch office.

The branch office continued to build a reputation and expand until the Great Recession took its toll, leveling off work in late 2009 and into 2010. After some deliberation, Braun & Saunders disbanded the branch office in 2012.

Looking back, the economic struggle of the entire county was not a foreseeable event. Given the chance, Braun & Saunders would make the same decision over again. The branch office never lost money and, for a while, was a quite profitable arm of the company. The decision to expand and the later decision to pull back were each considered a success.

B.3.2 Focused on Quality

Focused on making a difference in customers' homes and lives, Lowery Home Systems built its reputation of having exceptional knowledge and service by following the faith and values that have shaped all aspects of the company. It was this faith, and the values instilled in the four-member, family leadership team at Lowery, that helped the company through the expansion to an unfamiliar location.

Lowery's home office has been located in a mid-sized U.S. city with a population of approximately 160,000 residents. Though the city provided a large enough housing market to support the company, the low price mentality of the citizens compelled all contractors to cut out any nonessential costs. Meanwhile, the value-centric philosophy of a nearby community allowed 25% higher prices for high quality work. Providing expertise and the best possible value is of utmost importance to Lowery's leadership team, so the four family members leading the company began discussing their potential fit in the geographically accessible value-based market.

The nearby community, only a 40-minute drive away, was undeniably appealing to Lowery, which had always prided itself on the dependability and quality of its service. To test the waters of the new market, Lowery started by focusing on advertising in the area and having calls forwarded to the home shop from a local phone number. However, it quickly became clear that customers in the new location place high importance on supporting firms local to the community. Finding a satellite location in the city would be necessary.

The decision to fully commit by opening a second office would ultimately come from the leadership team with advice from their parents (the previous owners) and other siblings taken under strong advisement. While mulling over the possibilities, this group considered factors such as overhead needs, budgeted sales, equipment availability, area suppliers, experience and faith.

Fortunate timing allows Lowery to procure the equipment needed for the new location for a reasonable price from a local auction. With this bit of luck and an anticipated sales figure of $250,000 per year after the first 6-12 months, the management

team decided to move forward with opening the new office stipulating a full commitment to the satellite office for at least two years.

Unfortunately, not all parts of the plan fell into place as seamlessly as procuring equipment. The biggest unforeseen challenge was branding the company in a way to best serve two markets. Logo and informational updates on signs, brochures, invoices and company trucks each tallied extra monetary and time costs above the budgeted amount. Though each change was small, the cumulative effect turned out to be large.

Through this and other challenges, Lowery has maintained its satellite office for five years. The returns to the company sustain the decision to stay, though the profits are not as great as anticipated. The forecasted $250,000 per year in sales was not reached in the first year, but in the forth year instead. Though there were some unforeseen road bumps, the decision to open the new office would not have been made differently.

B.3.3 Continual Expansion

Since its simple start as a small family business, the Perry Duke Corporation continues to grow and thrive, offering valuable mechanical solutions to an ever-enlarging number of customers. Originally, the metropolitan area in which Perry Duke is located was growing dramatically and with it grew the demand for the construction trades. As it sometimes does in the construction industry, development in the area came to a halt and management at Perry Duke has had to discover different avenues to sustain the growth of the company. Expansion to other geographical areas is one of many growth solutions that management at Perry Duke continually evaluates. Several times in the past, the organization has opened successful branch offices in new geographical locations and continues to look for more opportunities to expand in this way.

A nearby location, just across the state line, provided Perry Duke with a geographical expansion opportunity that was worth further consideration. Managers were looking for an area that exhibited strong union affiliation, was familiar or had high growth potential, and was accessible to leaders traveling in from company headquarters. Because of its proximity to the company headquarters, the nearby location was familiar, easy to visit and it also had a strong union presence. In addition to meeting Perry Dukes minimum requirements, the location offered the opportunity to start with small projects in the market sector that Perry Duke performs best with little competition in that market sector.

After careful consideration, Perry Duke decided to open an office in the nearby location. Management found an affordable storefront location and a competent leader; a knowledgeable, hard-working manager with many years of experience in the area. Planning had been going on for a little over one year when the new location was opened.

After about five years in business, the branch office is being shut down. Unforeseen challenges arose with the labor and leadership at the new office. Although the manager running the new office was very experienced and knowledgeable, he ultimately was not the right fit. The new office required a more flexible, entrepreneurial persona with a talent for sales and marketing. Labor also proved to be more of a challenge than expected with three local unions governing the targeted geographical market. The locals were apprehensive about working with Perry Duke, an unfamiliar contractor, and were very strict with their enforcement of jurisdiction, greatly complicating labor planning.

Perry Duke believed that having a local address would help combat some of the apprehension customers and locals have about working with an unfamiliar contractor. In this case, the local presence was not enough. If they were to try growth into this area again, Perry Duke Corporation would consider expanding by acquisition of an established area contractor and build on the strength of existing relationships and area knowledge.

B.3.4 Market Boom

Following a booming energy industry, Gamut Sheet Metal began taking on projects over 300 miles from their home office. The draw to the market was strong because there was more work than contractors, but labor was scarce. Current staff were not willing to sacrifice the time with their friends and families, to travel that far. Getting labor from outside sources to move to a rural area was equally difficult. Although the labor struggles were intense, Gamut took on a couple of small projects in the booming market.

At that time of hyper growth, planning was very difficult. The growth led to chaotic contract terms and a large amount of project delay. After dipping their toes into the energy industry, Gamut has exited that area of growth for a more predictable market closer to home.

Management agrees that there was probably money to be made in the booming environment, but the uncertainty was not something that Gamut was willing to accept at the time. In market entry, market growth is a big factor to consider. However, even when market growth is very strong, availability of labor and contract terms can complicate the decision to enter.

B.3.5 Structured Geographical Assessment

Bolster Mechanical has successfully ventured outside of their traditional geographical area multiple times. Leaders at Bolster attribute their ability to successfully expand to the time and thought put in upfront, before deciding to join the project team.

Bolster uses a highly structured approach to geographic market assessment. First, either the company president or one of the three divisional vice presidents is tasked with conducting the market assessment. This individual calculates all of the foreseeable costs, risks, and benefits to engaging in the new geographic market. After the individual is confident in his or her assessment, the leadership group meets to discuss the potential market.

During the meeting, all of the costs, risks and benefits are further analyzed. The group double checks the numbers in the assessment and adds any missing information. Then, the leaders brainstorm other, less obvious impacts of entering a new market including: extra costs compared to competitors, ability to get the work with the extra costs, added value brought by the firm, and the ability of the added value to be a differentiator. One factor that has been an issue in the past is determining what resources will be taken away from the rest of the firm by pursuing the more distant job. When expanding geographically, a good manager, or maybe two, will need to be sent to complete the new work. This manager will have to spend extra time traveling to the jobsite and dealing with the nuances of the new market. This takes away from the time this good manager can spend helping out with other parts of the company. Leaders at Bolster believe this is one of the most important considerations when entering a new geographic area and it is one that is often missed.

Although Bolster has not formalized a strategic plan, leaders within the company are always willing to consider expanding into new markets, whether geographically or otherwise. However, each new market is heavily analyzed before action is taken. Bolster has learned over time that diligent, upfront assessment helps to have successful market entry outcomes for the long-term.

B.3.6 Always on the Move

Rife Mechanical is situated in a rural area and regularly has to travel over 200 miles for work. Out of necessity, Rife leaders came up with strategies to assess the ideal locations to pursue. One of these strategies is to bid projects in several different areas. Some may tell you to only bid projects that you know you can get, but Rife uses bidding as a way to gather information about different markets. Acknowledging the fact that there is a cost involved with bidding, Rife might conservatively bid projects outside of their traditional work area. Leaders in the company have found this to be an effective method of assessing the competition in that area. Although it goes against conventional advice, it works for them.

Rife has also worked hard to cultivate partnerships with their vendors. By having vendors that they can trust and who trust them, Rife has found another rich source of information about the work being done in a certain region. Having good relationships with vendors expands Rife's industry network and allows them to pull in more information about the status of work in a geographic market.

Rife has also improved their competitive advantage by using their location as a benefit. In their rural area, labor wages are much lower than in many metropolitan areas. For this reason, Rife continues to improve their abilities in prefabrication. By doing more

and more of the work in their shop, Rife can take advantage of the lower wage rates. Then, they ship work to the jobsite and have a lesser amount of the work to perform at the premium rates. In certain jobs, this ability to prefabricate gives Rife a leg up due to their location.

The main factor Rife looks for in a geographic location is good margins, but this is not their only consideration. Some areas are more hospitable than others to incoming contractors. There are certain areas where getting quality labor is harder than others because of their political situation. The ability to use your own manpower greatly reduces the risk. Vendors can be challenging to secure in certain areas, too. Knowing these challenges before entering and planning for them is vital to being successful.

Rife learned these strategies out of necessity, being a rurally located contractor. These lessons did not always come easy, but Rife tried it's best to learn from each bump and bruise along the way. Keeping their goals realistic and taking an unwavering stance on their decisions once they are made, have been critical tactics that have facilitated success for Rife.

B.3.7 Waiting for the Right Opportunity

The local union's work area stretches a nearly two-hour drive northeast from the Rollie Sheet Metal headquarters. Until recently, Rollie hadn't pursued work that far away, although they always thought it would be advantageous to branch out in that direction. When the right opportunity finally presented itself, Rollie was ready.

A relationship driven company, the first question asked when considering any opportunity is, "Is the client right for us?" Before bidding a job just because the local extended that way, Rollie assessed the client to ensure that the relationship that was

formed would be mutually beneficial and long-term. For Rollie, this client-centric approach has become a differentiator when proposing on negotiated design/build or design/assist work.

Not only are owner relationships important, but relationships with general contractors and other subcontractors are taken seriously at Rollie. The opportunity in the northeast region also allowed Rollie to establish a lasting relationship a general contractor whom they had worked with before.

After establishing that the relationships were a fit, Rollie, then, began to consider how they would secure the work. Rollie leaders had to consider the extra costs of their workers traveling approximately two hours to the jobsite and staying in that area during the workweek. They could not have low bid this project due to these added costs, but because the work was negotiated, they were able to secure the contract based on added value that their team could offer and their solid reputation.

The flexibility and choice that Rollie provides their customer impressed their owner in the northeast. Rollie has been invited to do even more work for this owner and a solid relationship has been formed. This was the ultimate goal in pursuing the initial project. Moving forward, Rollie aims to further improve its reputation in this region.

B.3.8 From the Gut

It seems new relationships are formed on every new project in the construction industry. On a large project, Proper Mechanical worked closely with a project manager from another state and developed a good working relationship. The project manager continually talked about starting his own business. He was an intelligent, hard-working

person who seemed highly capable of running his own shop. Leaders decided to partner him, opening a new company in the PM's home state.

The partnership did well in the beginning, getting a lot of low bid school projects. However, Proper started to get calls from local contractors informing them that their bids were alarmingly low on a lot of the jobs in that area. Time was spent trying to figure out whether or not there was a problem, but it is very difficult to tell where you stand on a project from the estimate. In the end, Proper listened to their intuition, which was telling them there were cracks in the expansion's business practices.

Proper leaders discussed their concerns with two trusted advisors and owners of their other business partnerships who they meet with twice each year. The advisors and fellow owners helped to better understand the issues at play from an outside perspective. Sensing significant losses on the horizon, and not wanting consequences to spill over onto Proper's core company, leaders decided it was the right move to sell the expansion.

Negotiations started with a mechanical contractor in the area. Ultimately, the business was sold at essentially no value, but the mechanical agreed to take over the facilities and remaining work just a matter of a couple of weeks before the attacks of 9/11 in 2001. Owners of Proper feel fortunate about the timing of the deal. After 9/11, many businesses changed and an exit at that time would likely have been much more costly.

Also, Proper was fortunate that Greg, who had been running the operation, still had 'skin in the game' from the original partnership. For this reason, he went to work for the mechanical that bought the business and helped close out the remaining projects. Having someone 'on the ground' with their interests in mind made Proper leaders feel more secure.

The total loss was about $500,000, a significant amount for a doing about $7-8 million worth of work each year. Fortunately, the company was able to survive the losses and take many lessons away from the situation. Proper leaders learned that there is a balance between trusting your new project managers and knowing the numbers yourself. They also learned the importance of exiting a business when necessary. Looking back, a key indicator of an unfortunate situation was that key relationships were not being formed with customers. Ultimately, getting the customer excited about your work is a crucial step to finding good jobs with fair margins and timely payments. If those relationships are not developing, the business will struggle.

B.4 New Market Sector

B.4.1 Decision to Not Enter

Intrigued by the "HVAC and Sheet Metal Industry Futures Study" published by the New Horizon's Foundation (NHF) in 2008, the board at Brandt Richards Mechanical expanded its annual emerging market outlook discussion to include potential strategies for the next decade. An obvious opportunity was imminent as compliance deadlines rapidly approached for public schools in the area. The new-build and retrofit public school markets were on the rise to accommodate the changing legislation and the board at Brandt Richards had a decision to make; are we in or not? Answering this market entry question would shape the way Brandt Richards conducts its business in the years to come.

Board members -at the time composed of the company President, Vice President, CFO, Treasurer, and Secretary- had many factors to consider; most importantly, the implications of working under the public owners stringent specifications and other

requirements. The owner regulates construction of all public school building projects in Brandt Richards' region. All school work is required to use a design-bid-build delivery system and, though Brandt Richards does a number of plan/spec projects each year, it is mostly a design-build company. Also, strict inspection and documentation requirements were unfamiliar to staff, and after discussions with peers, it was clear that learning to work in the area school system was a slow process.

Knowing that working for this potential owner would require a great deal of training and a change in company mindset, the board considered the company's preparedness to deal with these ominous obstacles. They considered internal factors including the company's core competencies and strengths in the industry, the availability of staff and staff experience, and the quality of existing relationships in the new market, and external factors of job timeframes, contract requirements, and the looming economic recession soon to hit the construction industry, hard.

Upon deliberation, the board concluded that Brandt Richards was not currently prepared to take on the imminent school projects. To handle the projects well, increased staff and staff specialized in area school needs were required. Hiring engineers familiar with area school requirements would not be enough, as field staff would need to understand and adhere to the new requirements as well. Current core competencies and strengths of the company did not match up with work in the school market. Brandt Richards is at its best when working on projects with short timeframes, doing retrofits or replacements in a design-build environment, and getting the field work done fast. In direct opposition to these strengths, area school projects are generally long in duration, completed in a plan/spec fashion, and require specific documentation that Brandt

Richards just has not worked with previously, and the learning curve is long and steep. Also, no strong relationships existed in this market for support because company efforts in the past were not in schools but directed toward industries that better matched their style of work.

Hope that the extra projects might help sustain sales during the forthcoming recession was too uncertain to sway the opinion that the company should steer clear of the expanding school construction market. In that 2008 board meeting, the unanimous decision was made; Brandt Richards would not pursue school construction work, with minor exceptions for small, equipment replacement contracts.

Revisited in 2009 and many times since, the decision has stuck and employees are whole-heartedly in support. The company weathered the recession and emerged with little to no lasting damage without school work and without changing the company structure or moving away from the company's greatest strengths.

When making market decisions, it is easy to get swept up in the numbers game, but Brandt Richards believes that there is more to a decision than financials. Before even discussing the size of market growth, projections and ratios, Brandt Richards assessed its core values and company strategy. High-level considerations, such as these, allowed the board to make the right market entry determination before even opening a financial spreadsheet. And, even though enticing opportunities have been considered for discussion, Brandt Richards has stuck with its decision, at least for the time being, and is content with keeping it that way in the future.

B.4.2 An Evolution

Kemp Fischer Sheet Metal has evolved its market offerings over time rather than choosing to make sudden, dramatic changes. Though an excellent provider of HVAC and ductwork systems, Kemp Fischer struggled to stand out as a leader in their markets. Fierce competition had forced margins to become very small, which is difficult for Kemp Fischer, an organization built around providing premium equipment and craftsmanship.

Feeling suffocated by the intense competition, management at Kemp Fischer felt the risk of not adjusting their market offering was greater than the risk of offering services outside of their comfort zone. Instead of confusing their staff by offering only the best quality on some projects while asking them to perform low-bid work on other projects, Kemp Fischer decided to focus on high-end offerings in underserved markets.

Kemp Fischer began to look for small opportunities to offer new services on projects for which they were already bidding. A clear void existed for architectural sheet metal, especially flashing. The architectural and flashing markets would allow Kemp Fischer to generate healthy margins on work that played into their mission to provide exceptional quality and choice product. It was important to Kemp Fischer to find a specialty craft in which they could rise to the market leader, and it seemed architectural sheet metal was the best route.

Kemp Fischer generally takes small steps when venturing out of their area of expertise. As a subcontractor, contracts usually include several scopes of work. In an effort to reduce the risk of trying something new, Kemp Fischer looks for opportunities to bid on a project mostly in their current market but with a small portion of the work in a new market sector the organization would like to learn more about. Another avenue

Kemp Fischer uses is to take advantage when situations come up to offer a new service on a current project. Often a need arises on an ongoing project for which the client is willing to pay a contractor that is currently working for them to learn about and fulfill the need, rather than looking for a new specialty contractor to provide the service.

In the architectural and flashing markets, Kemp Fischer started small with small projects or small portions of projects and gradually took on more and more work in these sectors. There were some bad experiences in the beginning, but the losses were not devastating because of the projects' limited size. Although risk of taking on a new market sector was high, the opportunity for higher profits offset this risk and the risk was quantifiable enough to account for with contingency. After slowly establishing a presence in the architectural market, Kemp Fischer invested in the hiring of experts and in specialized training. Today, architectural sheet metal makes up most of Kemp Fischer's portfolio of projects. Although the market remains highly successful today, Kemp Fischer knows from experience that competition can infiltrate a market quickly. Current barriers to entry will not hold forever. That is why the organization is continually searching for specialized areas of expertise to grow in small increments while the barriers to entry remain intact. The key is to take a small step into the new market sector and try to understand how your organization can help everyone involved in the project to more successfully complete his or her job.

B.4.3 Using Current Strengths

TUNE Mechanical had always fabricated their own work and found offering their fabrication capabilities to other contractors was an opportunity to make money doing something they were already highly skilled in doing. Fabrication takes place in a

controlled environment which makes the work relatively easy to plan and estimate compared to other aspects of mechanical construction contracting. Also, fabrication service is often paid for on delivery, easing the strain of delay in cash flow generally experienced by second and third tier subcontractors.

In the competitive bidding environment of construction, sometimes getting just the fabrication portion of a contract can greatly impact the company's overall volume as well as increase utilization of the shop. There are few unknowns so the risk is low. TUNE recognized all of the advantages of offering fabrication services and wanted to find a way to get started. To begin, the management group needed to gain a thorough and honest list of fabrication services that could be performed. This meant understanding their resources and the availabilities of that equipment and staff to run it. Also, someone would have to be available to estimate the work. Once TUNE understood their own capabilities, they worked with their network to get the word out about what the company could offer. Talking with vendors and other contractors solicited more than enough requests to get the company started in the fabrication market. Since, word of mouth and a little marketing collateral have kept the fabrication service at TUNE running steady with low risk, highly profitable work.

B.5 New Process

B.5.1 Changing the Standard

Duct fabrication has been a service provided by Sanders Mechanical for the past 40 to 50 years. Always striving to provide an exceptional product and service, Sanders adapted pre-sectioning and prefabrication processes to help managers closely control the productivity and safety of their ductwork fabrication and assembly. Pre-sectioning

practices started around 2000 and, in 2009, a state of the art pipe fabrication facility was built so that prefabrication could become a bigger part of what the company does.

These processes allow work that was traditionally done in the field to be done in a climate-controlled facility. Efficiencies and labor productivity along with safety skyrocketed on projects that used prefab. Other trades were pleased because the workforce at Sanders could be in and out of an area in a much shorter time, freeing up space for other contractors. Now, approximately 40% of Sanders' assembly work is done in the fabrication facility.

The decision to expand the fabrication facility required the company to conclusively commit to the process. Where prefabrication had to be fought for in the past, it became the rule in 2010. Today, staff must go through a process to prove why prefabrication cannot be used on a project, instead of the other way around, as it was for years. After continued efforts, full buy in has finally been reached after 10 years of evolution in practices.

B.5.2 Diversification

Inefficiencies in the industry caused leadership at Innovate Sheet Metal to build a unique ordering system…that works. Frustrated with foreman on the phone all day, shop workers unable to interpret requests, and two commercial ordering software products that did not fit their needs, Innovate contracted with a local programming firm to develop a web-based program that actually fits the needs of the company.

Innovate was looking for a program that would allow their staff in the field to quickly and easily communicate orders to the shop. The company started by implementing commercially available software programs. Two programs were tried, but

each only lasted approximately six months before it was obvious that the program did not function as advertised. Also, customer support for these programs was nearly nonexistent. In total, approximately 18 months were spent looking for and trying to implement these software programs that just did not fulfill the needs of the industry.

Frustrations grew until the company president decided no more time would be spent with commercially available software; the company was going to design their own web-based ordering system. Before venturing into the new realm of web development, Innovate considered several factors including direct cost savings and savings due to overhead cost efficiencies by increasing ease, speed, and accuracy of the ordering process. The company considered the cash that was available at the time and budgeted what they felt was a reasonable amount for the anticipated gains. Budgeting was difficult because the sheet metal company did not have a good idea of what programming entailed and how to estimate for it. In order to manage costs, Innovate decided to start with a small scope and incrementally build the product.

Most importantly, the company president wanted an easy and efficient process for the time savings. By better utilizing employees' time, Innovate could deliver high quality projects without the need to work all day and night, every day of the week. As it turns out, strong leadership support along with well-defined objectives would be the keys to the success of the new program.

Innovate decided to contract with Code Partners based on an existing relationship with the company and their locality. It was important for Innovate to have clearly defined objectives for the ordering system and also be able to fully communicate those objectives to the programmers. Together, the firms worked to build a web-based system

to sends digital orders that are directly downloaded into the fabrication shop's plasma cutting software. The interface with the field staff needed to be simple, fast and intuitive; it had to make jobs easier, not more complicated.

Innovate knew that ironclad contracts would be needed to protect the product and ideas from theft by the developer. This risk was also addressed by inviting the developer to buy shares of the technology. There would be no reason to steal something they already owned.

It wasn't all easy going. In the first year of development, a project manager who was supposed to facilitate the process became a bottleneck for information. It wasn't until the programmers were given direct access to all areas of the company that the staff's real ordering needs were brought to light. Luckily, Innovate recognized the inefficient structure, but not until after a year of slow going.

Acceptance from the staff was not always easy. Clear direction and unwavering support for the program from top management were necessary in the acceptance and use of the final product.

The ordering system was implemented company-wide in February and along with the overhead efficiencies that have not been measured, the program reduced direct costs by 15% in that first year. Several additional features have been added to the system including a time card, contact information, and pricing capability to name a few and costs have continued to drop company-wide by 26% compared to the pre-ordering system days.

B.5.3 Scaling Back

When the U.S. economy fell, the president of Bayer Mechanical knew that reducing costs was necessary to be able to continue to thrive in the construction industry. Many smaller subcontractors, like Bayer, had accepted the fact that they did not have the working capital to overhaul production using prefabrication, like the largest contractors had done. Still, Bayer's president knew that their were at least some elements of prefabrication that could be scaled to improve productivity in his own shop.

After talking to and touring the shops of competitors and large contractors from other regions, leaders at Bayer Mechanical developed a plan to incorporate prefabrication into their own business practices. The new processes would afford the company higher productivity levels as well as a safer environment, more control of quality, and a marketing tool. Bayer focused their prefabrication on steel first; noticing steel was the most cost effective area to implement prefabrication with the most to gain from increased productivity.

Employees in the field were hesitant to embrace the new way of business for fear that the process would work too well and the amount of work would go down. However, the opposite turned out to be true. Although the nature of their work was changed from working with their hands to working with their brains, Bayer's demand for fieldwork stayed as busy as ever after adopting prefabrication practices.

Prefabrication did require adjustments in the typical business practices at Bayer. Previously, clients paid Bayer when actual work was in place. With prefabrication, this creates a huge delay because a large amount of work is completed before being brought to the jobsite. A new payment arrangement had to be made with clients in order to

maintain a reasonable cash flow, which was not always easy. Also, a storage issue was created that needed to be addressed. Bayer worked with clients to store as much of the prefabricated material on site as possible.

The issues faced with prefabrication were minor road bumps relative to the benefits realized by the new process. Leaders knew Bayer would experience some difficulty when attempting to take on a new way of business, but developing solutions to these challenges was part of the experience. Now, prefabrication is the standard method of production at Bayer and is the way of their future.

APPENDIX C

FACTOR PRIORITIZATION WORKSHOP RESULTS

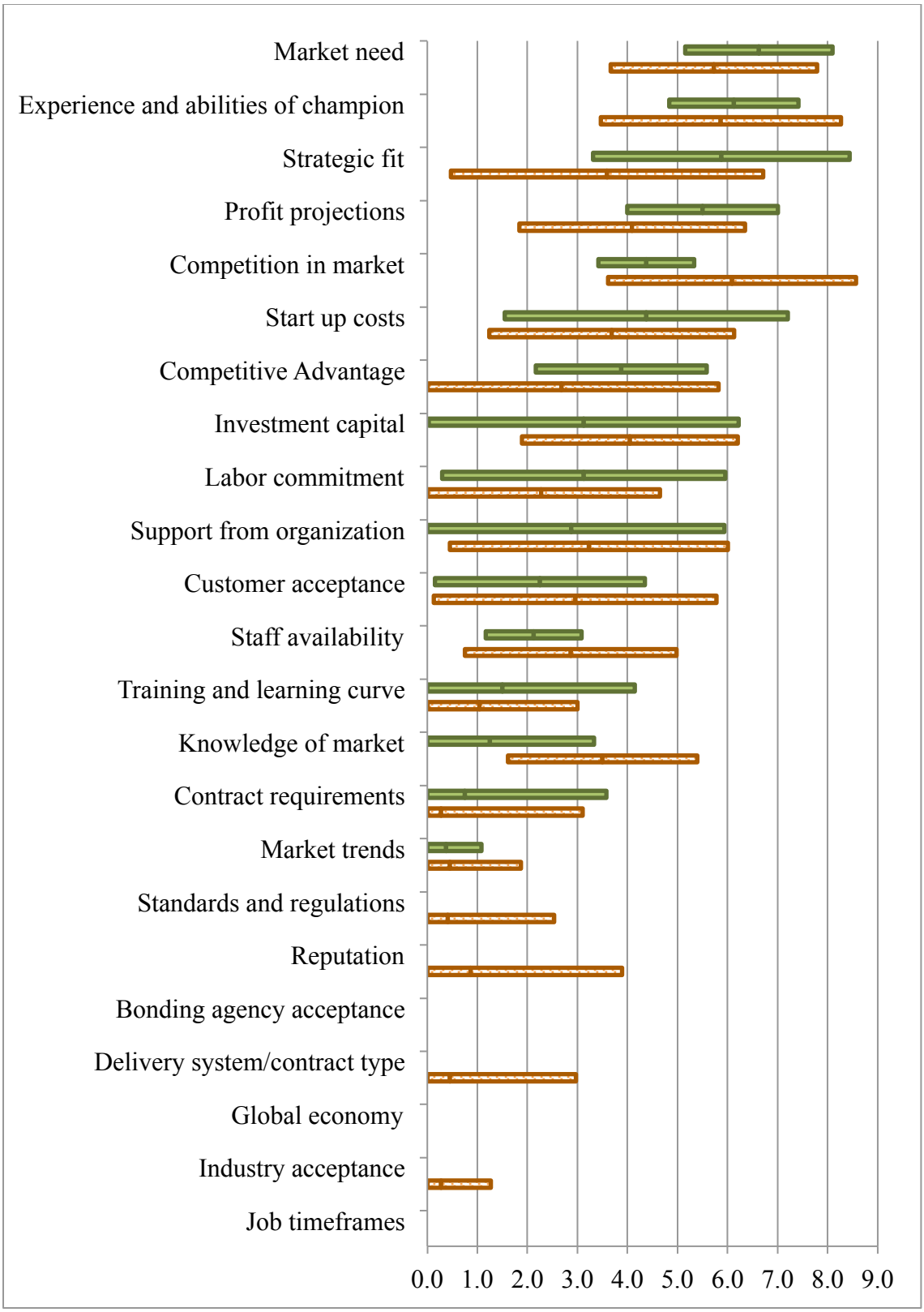


Figure C1: Average Scores for "Add HVAC Service" Factor Prioritization Workshop with Standard Deviation

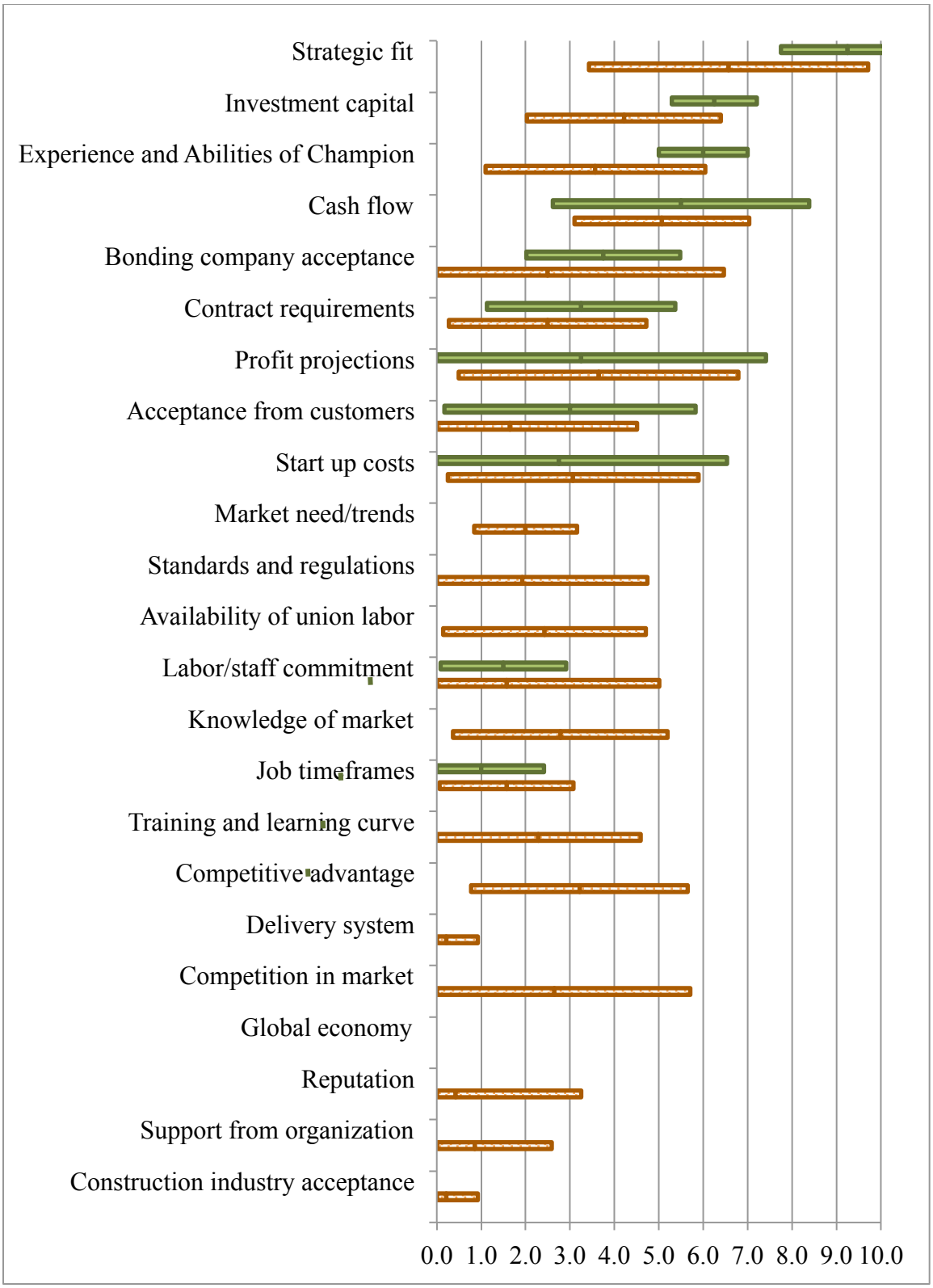


Figure C2: Average Scores for "New Market Sector" Factor Prioritization Workshop with Standard Deviation

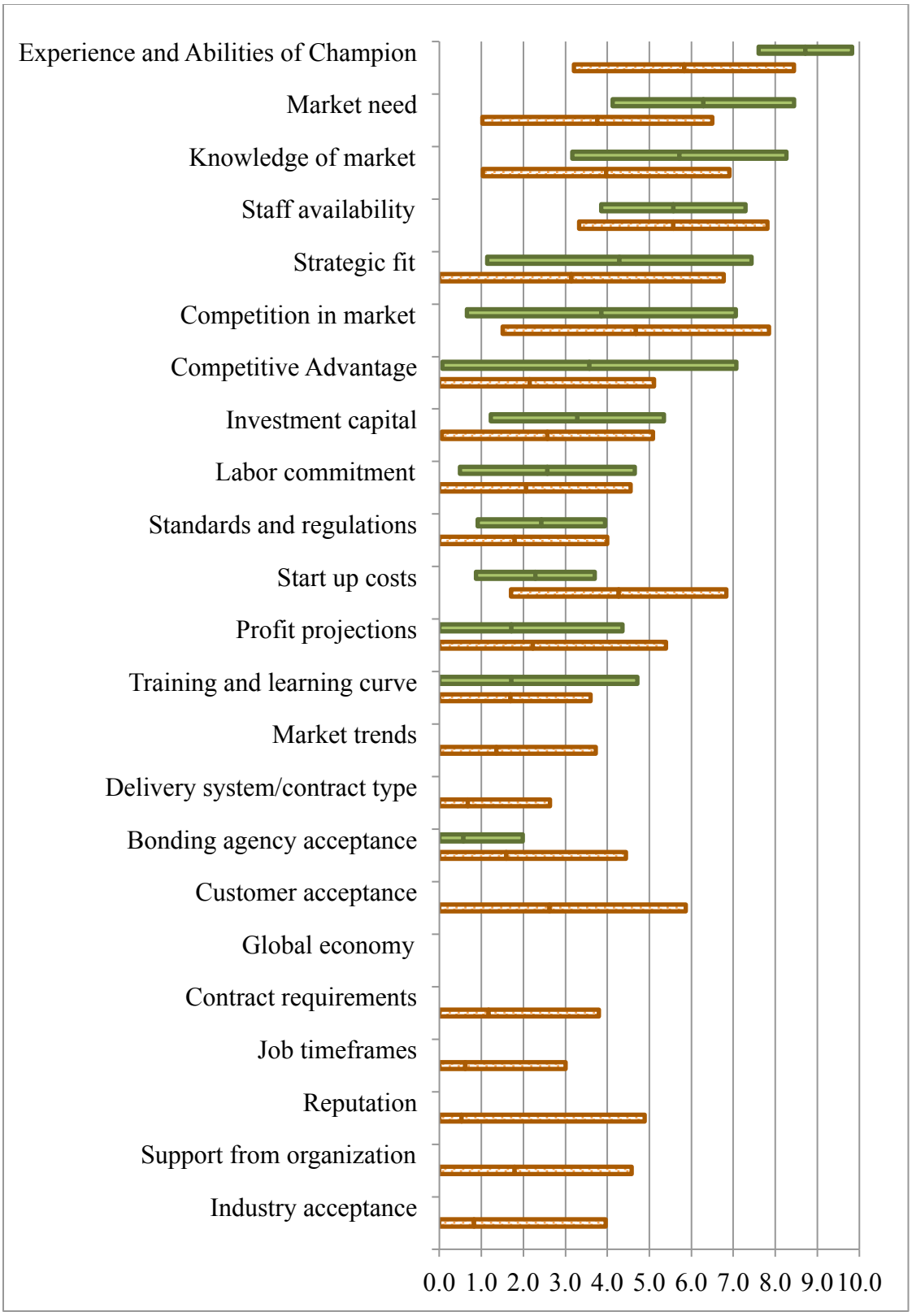


Figure C3: Average Scores for "Expand Geographically" Factor Prioritization Workshop with Standard Deviation

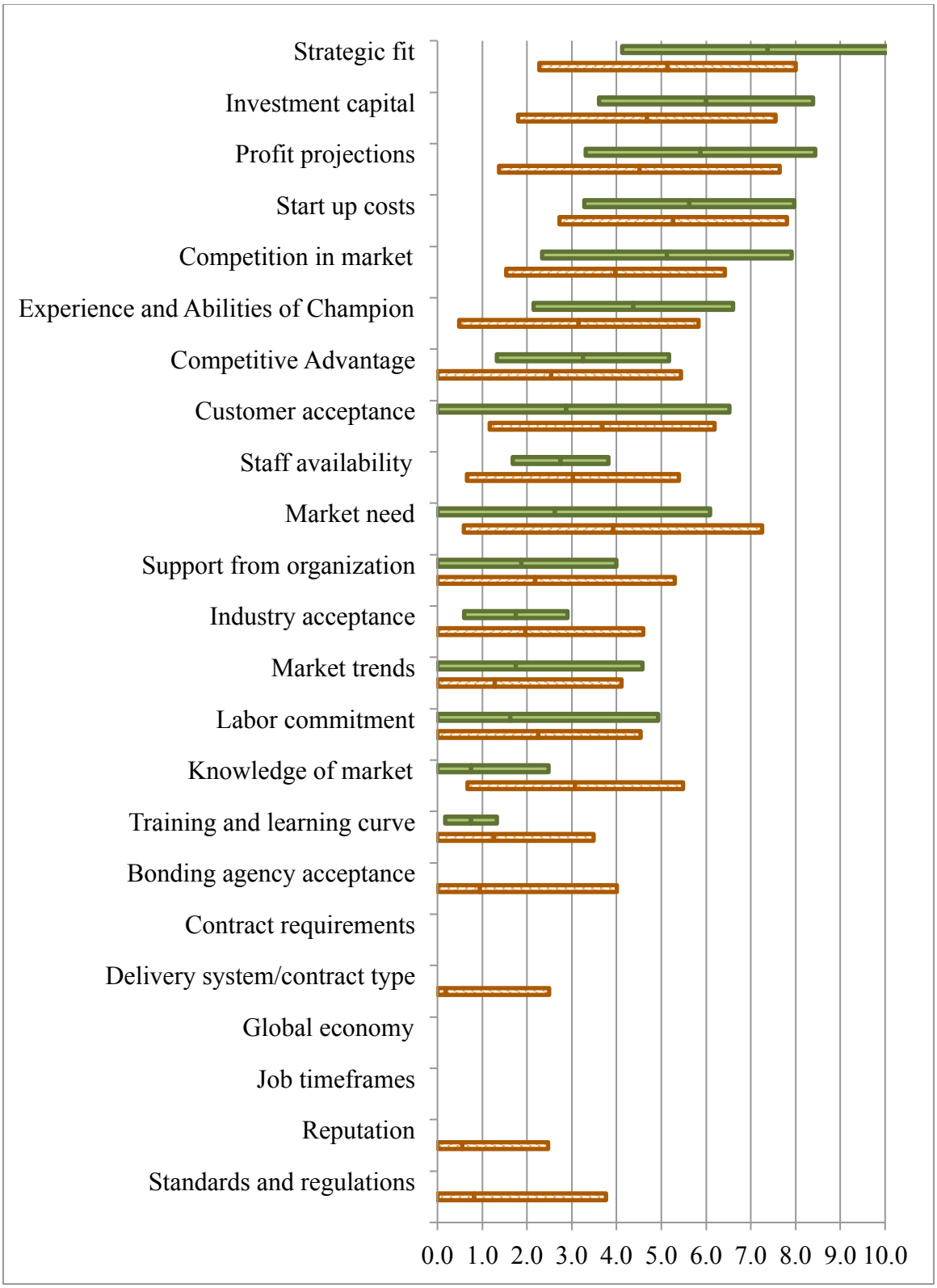


Figure C4: Average Scores for "Add A Trade" Factor Prioritization Workshop with Standard Deviation

APPENDIX D

REDUCTION OF DECISION FACTORS

Factors prior to independence analysis	Final factors list
Bonding agency acceptance	Bonding agency acceptance
Existing competitiveness	Competition in market
Competitive advantage	Competitive advantage
Contract requirements, Different dispute resolution, Liquidated damage policy	Contract requirements
Existing relationships, Customer acceptance, Market perception	Customer acceptance
Delivery system, Payment type	Delivery system/Contract type
Champion capabilities, Willingness of leader to adapt	Experience and abilities of champion
Global economic situation	Global economy
Acceptance by subs, Industry acceptance	Industry acceptance
Availability of financial resources	Investment capital
Job timeframes	Job timeframes
Knowledge of market	Knowledge of market
Labor commitment	Labor commitment
Market need	Market need
Growth of potential market, Environmental issues, Industry trends	Market trends
Potential profits, Overhead costs, Overhead savings, Targeted growth, Yearly budget, Five year income projection, Yearly target earnings, Direct cost savings	Profit projections
Reputation	Reputation
Staff availability	Staff availability
Standards and regulations	Standards and regulations
Equipment availability, Budget/initial scope, Direct start up costs,	Startup costs
Core competencies, Cultural fit, Strategic fit	Strategic fit
Support from organization	Support from organization
Staff experience, Training, Learning curve	Training and learning curve

APPENDIX E

CASE STUDY PROTOCOL

Case Study Protocol:

Market Entry Decision-Making Process

For: New Horizons Foundation

By: Field Researcher, Jera Sullivan

Overview of the Case Study

Mission and goals

Market entry is a significant risk to the overall company, but it is still often done. Unfortunately, four out of five attempts to enter a new market are not successful (Horn et al. 2005). Moreover, construction contractors have historically struggled during the fast growth times of economic recovery (Schleifer 2013). What motivates subcontractors to grow through market entry and how can the success rate of market entry be improved? These are the key questions to be answered by this research study.

The specific contribution of this case study approach is to fully understand the current practice of market entry decision-making in the sheet metal and HVAC industry. Strengths and weaknesses from the decision makers' perspective are utilized to improve the success rate for market entry in this industry. Developing a reference class through reading cases about past experience and lessons learned will guide peers in future decisions, positioning SMACNA members to be multi-faceted organizations that contribute to the construction industry at a high level.

Three distinct audiences will be served by this case study. The perspective of each audience must be kept in mind while designing the data collection plan:

Audience 1: SMACNA Members

This is a skeptical audience that is the most affected by the research. They will want to be ensured that the research is sound and has use for them without being overly complicated. They will want measurable results that convincingly affect the company's bottom line. The biggest risk is that the outcome will not appeal to this audience and the findings will go unused.

Audience 2: Peer Reviewers

This audience is looking for a few key tenants. They will question whether the methodology is sound, whether the results are well contrived, and whether the process is validated and useful. Careful measures must be taken to follow proven protocols and results must clearly contribute to the body of knowledge.

Audience 3: Dissertation Committee

This audience is curious about whether or not the student can conduct meaningful research. They will want to make sure that the methods are accurate and that the student can fully defend the results.

This case study methodology is completed in partial fulfillment of the New Horizons Foundation "Market Entry Decision-Making" study being completed by Arizona State University.

Research questions

The following research questions have been developed to guide the case study methodology as well as other aspects of the overall research study. Data collection procedures are developed with a focus on these case study questions. Multiple questions and sources were determined to answer each research questions so that information received can be triangulated.

Research Question 1	RQ1	Why do SMACNA members grow through market entry?
Research Question 2	RQ2	How often are SMACNA members successful in entering a new market?
Research Question 3	RQ3	What are the most common types of market entry attempted by SMACNA members?
Research Question 4	RQ4	How have SMACNA members historically made market entry decisions?
Research Question 5	RQ5	What are the major factors considered before entering a new market?
Research Question 6	RQ6	How do cognitive biases affect market entry decisions?
Research Question 7	RQ7	What metrics are used to determine if a market entry experience was successful?
Research Question 8	RQ8	How can we improve market entry growth strategies?

Literature and survey findings

From the literature, it has been found that market entry is paradoxical in that it is both a risk mitigation method while being itself a large risk. Many organizations successfully diversify their market participation and are consequently better equipped to weather a market downturn and increase their long-term profitability (Choi and Russell 2005; Kangari and Riggs 1988). However, market entry decision-making is a highly risky behavior that ultimately causes many organizations to fail (Schleifer 1990).

Determining how to successfully grow an organization in the architecture, engineering and construction (AEC) industry is not a trivial task. Strategic growth decisions are not straight forward, but rather, are complicated by the uncertainty of an ever-changing industry (Miller 1993). Learning from a single organization's past experiences is nearly impossible because, by definition, strategic decisions are made relatively infrequently, and feedback from each decision is slow and difficult to understand (Betts and Ofori 1992). Unfortunately, little specific guidance is

available to the AEC industry to determine if and when expanding to a new market is an appropriate method of strategic growth.

Traditional economic theory suggests that strategic decision makers consider all relevant information; then, they use logical, analytical methods to determine the optimal choice. Modern research in behavioral economics and psychology recognizes that perfect knowledge and optimization are not realistic. Cognitive biases developed through years of evolutionary learning obstruct truly rational decision-making (Tversky and Kahneman 1974). However, having a deliberate, methodical process helps decision makers better understand their risks and opportunities, and improves the likelihood of successful decision outcomes (Brinckmann 2010; Dean and Sharfman 1996; Papadakis and Barwise 1998).

This research specifically focuses on decision-making for market entry. A broad definition of market entry is chosen for this research: either serving a new type of customer (for example, customers outside an organization's standard geographic area, market sector, etc.), providing a new construction service/product, or both.

Igor Ansoff first published his Product-Market Alternatives Matrix in 1957 to catalog different types of organizational growth. The matrix, now commonly called the Ansoff Matrix, divides growth into four categories: market penetration, market development, product development, and diversification (Ansoff 1957). Since its publication, the Ansoff Matrix has been used extensively in the discussion of business strategy and is used in this research because it is a proven method for explaining market entry in a clear, consistent way.

Our definition of market entry includes three of the four quadrants that make up the Ansoff Matrix. Represented by targets in Figure 1, product development and market development are the main focal points of this research because each involves market entry through either offering a new product to current customers or offering current products to new customers. Diversification, or offering a new product to a new customer, is shown with a caution sign to indicate the much larger risk involved in this strategy, due to too many changes being introduced at once. This research will discuss diversification, but only in the more cautious, step-wise fashion where an organization successfully accomplishes either product development or market development first, before fully diversifying. Market penetration (in the top left corner of the Ansoff Matrix) is outside this study's scope because it involves growing current market share, opposed to entering a new market.

Four specific market entry decision types identified from the literature are deemed the most pressing to contractors. New project size (at least twice as large as an organization's current largest or 50% of annual revenue), new geographical location, new type of construction (healthcare, commercial, residential, etc.; or public versus private), and adding a trade (mechanical, electrical, etc.) have been identified as common market entry reasons for contractor failure (Davidson and Maguire 2003; Rick and Heimbach 2007; Schaufelberger 2003; Schleifer 1990). Based on thorough discussions with industry leaders at two national industry meetings, this list of decision types was expanded to include "adding a heating, ventilation and air conditioning (HVAC) service department." The industry leaders agreed that adding an HVAC service department to repair and maintain HVAC systems is another major venue for sheet metal and HVAC

contractors to enter a new market. Adding service was determined to be fundamentally different than adding a trade because of the customer-focused culture and vastly different hours of availability that are required. These five specific decision types identified and refined through the literature and input from industry experts define the scope of this research.

An industry survey was administered to understand current practices when dealing with these five types of market entry decisions in the sheet metal and HVAC industry. The survey was originally emailed on April 10, 2015 to the 3,784 contacts on the Sheet Metal and Air Conditioning Contractors National Association's (SMACNA's) email list. Fifty-two members responded to the first request. A reminder was sent on April 23, 2015, which led to 41 more responses for a total of 93 total responses. Though the response rate is low, 2.5%, the data collected in the survey provide information that can be used to adapt case study questions and make inferences, but generalizing the results to the entire membership of SMACNA should not be done because the responders may not be a representative group. Further analysis will need to be done to generalize the findings. The following subsections walk through the result of each survey question.

Question 1 - Does your company have a written strategic plan?

The motivation for Question 1, "Does your company have a written strategic plan?" was to understand the state of strategic planning among SMACNA members. This 'Yes or No' question does not delve into the details and extent of strategic planning completed by respondents, but it does give an initial indication of the industry's experience with

strategic thinking and planning and potential acceptance issues with the introduction of a strategic level tool.

Fifty-eight percent of survey respondents answered, "No" to having a written strategic plan. There could be several reasons why more than half of responses are negative including:

- Do not see a benefit to a strategic plan
- Perceived lack of knowledge or experience with strategic plans
- Perceived lack of time to create a strategic plan
- Believed to be too small for a strategic plan

The above list is admittedly speculative and non-exhaustive, but it gives some examples of reasons from popular business articles for choosing not to have a strategic plan. Although many companies have stated "smallness" as a reason for not planning, our data does not indicate that size determines whether or not a company has a written strategic plan. The smallest respondent to our survey (approximately $1.2 million revenue per year) has a plan while the largest (approximately $500 million revenue per year) does not.

Question 2 - Check all of the market decisions for which you have been involved as a leader in the past 10 years

Respondents to Question 2, "Check all of the market decision for which you have been involved as a leader in the past 10 years", were given five response options: expand geographically, add a trade (mechanical, electrical, etc.), add HVAC service, increase project size (more than 2x current largest or more than 50% annual revenue), and

take on a new project type (hospitals, commercial, etc. or public v. private). This question investigated which market entry decision types are made most often by SMACNA contractors. The question also provided researchers with the names of SMACNA members who have experience in each specific market entry decision; so following up with requests for case studies can be done more thoughtfully.

The 93 survey respondents have made a total of 235 market entry decisions over the past 10 years. Taking on a new project type and expanding geographically are the most commonly faced market entry decision types. Adding a trade is the least common decision type while increased project size and adding HVAC service fall in the middle.

Question 3 - How does your company make decisions about entering a new market?

Three responses were available for Question 3, "How does your company make decisions about entering a new market?": (1) using a formal, written decision process, (2) using an informal but consistent decision process, and (3) ad hoc, unique to the current decision. This question gauges the need for a formal process in the industry.

Only six percent of survey respondents have a formal, written plan for addressing market entry opportunities like the one this study is developing. Fifty-three percent of respondents state that their company uses an informal but consistent process when deciding whether or not to enter a new market and forty percent state that their company has an ad hoc process that is unique to the decision at hand. The academic literature on strategic planning suggests that having a formal, systematic process will help even the group with and informal process and especially the group using ad hoc processes to have more successful decision outcomes and improve their intuitive responses to market entry.

Question 4 - Who is typically involved in advising your company's market entry decisions?

Question 4, "Who is typically involved in advising your company's market entry decisions?", gathers insight into who the individuals are that make market entry decisions and whom is sought after for advice. Survey respondents were given six choices and were allowed to select as many choices as were appropriate. The six choices were: company leader (CEO, president, owner), upper management (VP, CFO, etc.), senior project managers, external advisors, peer group, and other. If "other" was chosen, respondents were invited to provide text about who else is typically involved in advising their market entry decisions.

Most survey respondents state the company leader and upper management are involved in making and advising market entry decisions. A little over one third of respondents say that senior project managers are involved in these decisions and very few companies look outside for external help or peer group input. Six respondents offered up additional answers consisting of: customer feedback and long-time business contacts, all employees, marketing agency, outside business consultant, family members who are in the same business in another geographic region, and SMACNA executives.

Question 5 – Contact Information

Seventy-nine of the 93 survey respondents supplied their name and contact information as part of the contact information question. Email follow up was conducted with most of these respondents requesting case studies be completed. Five respondents were not contacted because they were involved in case studies during Phase 1 of this project.

Additionally, 70 respondents filled in the approximate volume of work, in revenue, completed by their company each year. This metric will help to find any trends in the data associated with the size of the company.

Role of protocol in guiding the case study researcher

This protocol document will serve many purposes during the case study collection process. The document will become a standardized agenda for the researcher's line of inquiry, increasing the reliability of the multiple case study findings. Research questions have been outlined in this document to focus the study. Also, audience definition helps the researchers to keep the needs of each audience member in mind during the collection of data.

Multiple case studies will be collected from willing subcontractors who have experience in one or more of the five key decision types identified above. SMACNA members are preferred, as their experience is most relevant to the audience, but other sheet metal and HVAC, electrical, mechanical and various other subcontractors will be considered. The case studies will be used for two reasons: (1) to determine the current state of how market entry decisions are made in the industry and (2) provide future users, along with other decision tools, with a reference class from which to compare their current situation to avoid confirmation and availability biases when making future market entry decisions. This protocol will be reviewed before each case study and the procedures will be followed during the case study data collection. After the data collection and analysis phases for each case, the protocol will be reviewed and changed

as needed to better suit the goals of this study. Any changes will be documented in the "Protocol Changes Worksheet".

Data Collection Procedures

Names of contact person for doing fieldwork: Jera Sullivan, PhD Student, ASU

Data collection plan: Gaining access to key organizations

The key to data collection for this research study is soliciting enough volunteers to make a case study library big enough for a future decision maker to build a reference class. A reference class includes five or more cases with similarities to the current situation in several key areas. For the ease of the future decision maker, the attributes of each decision should be laid out in terms of these key decision factors.

Several methods will be used to gather the necessary case studies: (1) survey respondents, (2) chapter meetings, (3) annual convention, and (4) recommendation. An industry survey was administered with a final questions soliciting contact information. The contact information gained from this survey will be used to make requests for future case study interviews. Contacts will also be made by participation in chapter meetings. A consensus-building workshop to prioritize decision factors has been developed for such meetings. At the meetings, participants will also be asked to participate by providing case studies. The annual convention is another venue that has been used for workshops in the past. In 2015, we will inquire about adding a case study collection room at the venue for drop-in volunteers. Finally, a question will be added to the list of case study questions that inquires about any peers that may be good candidates for case studies.

Resources needed for field work

The following items will accompany the researcher to each case study collection outing:

a. Data collection worksheet

b. Questionnaire

c. Example case study

d. Cell phone

e. Personal computer

f. Writing instruments

g. Paper

h. Paper clips

i. Voice recorder

The data collection worksheet will be used to organize relevant information to be easily input into the data collection database. The most current version of the data questionnaire should be used as an agenda, keeping the case study interview on topic. An example case study can be very helpful in communicating the ultimate goal of the case study data collection to the interviewee. Other necessary items for data collection are also listed above.

Schedule for data collection activities

Because there is so little control over the rate of volunteers, the data collection process is difficult to schedule. The following tentative schedule is a best estimate at the onset of the data collection efforts and can be used to track progress and the measure adjustments, as changes are expected.

Of 93 respondents to the industry survey, 79 provided contact information. Four of those who provided contact information had already been interviewed for case studies as part of phase one of the research study. The remaining 75 respondents are listed below.

[NAMES REMOVED FOR PARTICIPANT PRIVACY]

These 75 potential interviewees were emailed on May 11, 2015. From the initial email, six volunteers (highlighted in green) offered a total of nine case study interviews. In the future, the remaining survey respondents will be contacted again requesting participation in case study interviews. Phone calls will follow the email to engage those that may not regularly respond to email. Below are the standard emails that were/will be sent to all on the 'respondents list' and a scripted voicemail for the follow-up phone calls. Also, there is a standard agenda for the follow-up phone conversations.

Email 1: Sample (one of three) emails sent to survey respondents on May 11, 2015

Email 2: To be sent to remaining survey participants

Upon receiving a response, the researchers will confirm the proposed date. A calendar invitation will be sent from the "Case Study Interviews" calendar created in gmail. Jera's personal cell phone will be used to conduct the interviews until an office phone is provided. Any email correspondence will be directly moved into the "Case Study Correspondence" folder.

Follow up phone calls will be placed starting one workday after the sending of Email 2. It is expected that the phone calls will take approximately three workdays and will follow the Follow Up Call Agenda or Follow Up Voicemail Script below.

During the case study interviews, the researcher will use the data collection questions list as an agenda to structure the discussion. Case study write-ups will be completed within 48 hours of conducting the interview to ensure the researcher can recall the tone of the interview and incorporate it into the writing. At the same time, the researcher will input data into the case study database.

After the case study write-up is complete, it will be sent to the interviewee for review and filed under /Data Collection/Case Studies/Anonymous Write Ups. Transcripts will be made for recorded interviews and filed for text analysis.

Data Collection Questions

Level 1: Interview Questions

Decision timeline and participants

1. Describe a previous business decision.
2. When did this decision occur?
3. What prompted the decision?
4. Who was involved in making the decision?
5. When did you first engage each decision-maker?

Decision-making process

6. What were the alternatives that were considered?
7. What was the process of coming to a decision?

8. Did the company have a formal decision process at the time? Does it now?
9. Was this a routine decision (part of an annual planning meeting) or a unique decision based on new market opportunities, for example?

Risk factors and considerations

10. What were the key pieces of information needed to make the decision?
11. What risk factors were considered? What opportunities offset the risks?
12. Was a financial analysis completed? What accounting data was used?
13. How was the need of the new market determined?
14. Who was the leader of the new effort? What was this person's previous experience? What made them especially qualified to take on the responsibilities?
15. How did the new market opportunity fit into the vision of the company at the time of this decision? Do you have a strategic plan? If yes, was it consulted in this decision?
16. Who did you consider to be your competition? How did you assess your competitive advantage?
17. What was the condition of major resources at the time of this decision (investment capital, labor availability, labor acceptance, etc.)?

Execution and success

18. When was the plan implemented? How long was the entire decision-making process?
19. On a scale of 1 to 5 how successful would you rate this decision (l being 'fell far short of goals' and 5 being 'far exceeded goals')? On what terms (metrics), rank each from 1 to 5?

20. In your opinion, what were the key reasons for success or failure?
21. Was a baseline for success determined before implementing the decision? Was there an exit strategy?
22. How would you improve your decision-making process if you were to make that decision again today?

Level 2: Case Specific Questions

Decision timeline and participants

1. Gather a description of the situation for providing background.
2. How do the conditions of the time differ from today?
3. What brings about market entry decisions?
4. Do the job titles of the decision-makers impact the success? Does involving a more diverse group change the successfulness of the decision?
5. Does timing of decision-maker engagement impact decision success?

Decision-making process

6. What were the alternatives that were considered?
7. Are there pattern in the processes currently being used to make market entry decisions?
8. Do formal decision processes help?
9. Are these decisions usually planned or do they appear at predictable times?

Risk factors and considerations

10. What factors do contractors consider when making market entry decisions?
11. What are the risks and opportunities to entering the market?

12. How do finances impact the decision that is made and its success?
13. How is the contractor measuring his new market? Is it accurate?
14. Do characteristics of the leader determine market entry success?
15. Do contractors formally or informally consider their vision of the company in the future?
16. How is competition assessed?
17. Is availability of resources considered? Does the availability impact success of market entry?

Execution and success

18. How long was the entire decision-making process?
19. What is the subjective measure of success?
20. What are the lessons learned that can be used to help contractors in the future?
21. Are benchmarks used/measured? What are good benchmarks of success? What do you do if you far exceed or don't meet expectations?
22. What are the lessons learned that can be used to help contractors in the future?

Level 3 (& 4): Pattern and Study Level Questions

RQ1 Why do SMACNA members grow through market entry?

RQ2 How often are SMACNA members successful in entering a new market?

RQ3 What are the most common types of market entry attempted by SMACNA members?

RQ4 How have SMACNA members historically made market entry decisions?

RQ5 What are the major factors considered before entering a new market?

RQ6 How do cognitive biases affect market entry decisions?

RQ7 What metrics are used to determine if a market entry experience was successful?

RQ8 How can we improve market entry growth strategies?

Guide for the Case Study Report

Audience

Popular case study researcher, Robert Yin, identifies four types of audiences of case study reports and their typical interests while reviewing the report. This research project must appeal to all four audiences at different times. This may mean that four different versions of the case study must be developed.

The four audiences are:

1. Research funders: significance of case study findings in practical terms
2. Nonspecialists: descriptive elements and implications for action
3. Academic colleagues: relationship of findings with previous theory
4. Thesis committee: Mastery of the methods and theoretical issues

Report Structure and Outline

For multiple case studies, there are structural options when developing a case study report. The classic structure presents individual cases, usually in their own chapter. Then, cross case impacts are discussed. A variant of the classic style presents the cross case analysis as the bulk of the report with the individual cases in appendices or in a separate volume of the report. Another approach is to have no separate presentation of

the individual case studies. Rather, devote the report to the cross-case analysis and the information from the separate case studies is dispersed throughout the entire report. An altogether different structure might also be chosen. A question and answer approach might be used in which each research question is examined individually.

For this research project, the classic structure does not make sense. Because such a large number of cases are being explored, the length would be too long to appeal to a broad audience. The question answer approach might be a good format for presentation to a thesis or dissertation committee but will not be considered for a report to the research sponsors or industry because the formality of such an approach, it is difficult to keep the reader's attention. For these reasons, a cross-case analysis will make up the bulk of the report. It is not yet determine whether the individual cases will be presented as appendices, a separate volume, or throughout the report, though a combination of incorporating the individual cases within the report and presenting them as a separate volume might make the most sense for this research project. Having the ability to incorporate the individual cases as lessons learned, vignettes or illustrative examples within the report would make a clear, stand-alone explanation of the project. While providing the individual cases in a separate volume would allow the dissertation committee access to all parts of the research and would provide interesting insights for industry members.

Initially, the following five, main sections of the report are proposed:

1. State of decision-making practice in the industry
2. Context and history pertaining to the practice
3. Motivation for improvement
4. Research questions/problem statement
5. Outcomes from the practice, to date

Exhibits to be developed

- chronology of events covering the implementation and outcomes of the practice
- logic model for the practice
- references to relevant documents
- list of persons interviewed
- interviewee demographics