

FMI Quarterly

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This Quarter: Keys to Success

Dear Reader:

For many, it seems that getting into an economic mess is a lot faster than getting out of it, but getting out we are... slowly. It's a bit like falling through the ice on a farm pond but having enough strength to break the ice and make it back to shore. It's cold out there and we are swimmers with different skills, but we aim to reach dry land. Our issue this quarter deals largely with strategies to reach dry land. Economic resurgence is agonizingly slow in some markets but beginning to warm a bit in others, while members of the architecture, engineering and construction worlds face differing challenges. Strategic thinking and skillful implementation of changed strategies are keys to success in both turbulent and calmer times.

In our feature-length articles, Briston Blair and Jake Appelman lead with strategic thoughts in "When More of the Same Won't Work." Jim Schug provides advice on what changing strategies may mean to field operations in "Operational Adaptability: Field Implications for New Strategies." Changing times mean changing skills and mind-sets. While sources of training and education are obvious to some, Michelle Anysz wants to make sure your organization takes advantage of association offerings in her piece, "Utilizing Trade Association Educational Opportunities." Cost containment is a major driver in the so-called new normal, and achieving low production cost is one focus of "Utilizing Modular Construction as a Strategy," written by Mike Kanaby. Our sponsoring partner, Zurich Construction, provides cautionary insights regarding companywide risk in an interview of Linda Conrad and Scott Rasor conducted by FMI's Jay Bowman for the feature, "The Risk of a No-Risk Perspective." Sage advisors Hugh Rice and Tim

Sznewajs provide some provocative ideas in their groundbreaking discussion of “Phantom Capital: How Real is Your Balance Sheet.”

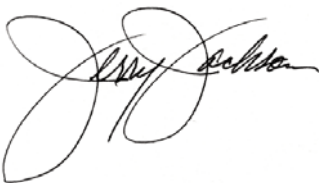
Lou Marines provides his usual thoughtful perspectives, this quarter on “Corporate Governance.”

To close out our issue, we have several shorter but valuable articles: “Future Strategies: Part 1 — Defining the Questions by Steven Isaacs and Karen Newcombe; “Winning Profitable Work? Start With Strategy” by Cynthia Paul; and “Market Segmentation’s Role in Strategy Development” by Jay Bowman and Kevin Haynes.

Scan this issue overall, as most of us will. Then, home in on the three topics that are most concerned with your current needs. Take plenty of time to read and think about what the authors are saying. Some of us are used to reading in order to finish the piece, the chapter, the book. Reading articles in *FMI Quarterly* is best done slowly, taking frequent pauses for reflection. Is this accurate? Can I use this technique? Do our strategies mesh with these ideas? What steps would I take to implement this notion? Reading a journal really is about the journey, not about getting it finished.

Want more? Contact FMI for assistance, comments or direction. And thank you for being a reader of the *FMI Quarterly*!

Sincerely,

A handwritten signature in black ink, appearing to read "Jerry Jackson", written in a cursive style with large loops.

Jerry Jackson
FMI Quarterly Publisher and Senior Editor

Departments

STRATEGY

Future Strategies: Part 1 — Defining the Questions

The majority of architecture, engineering and construction (A/E/C) firms have spent much of the past three years hunkered down in protective modes designed to get them safely through the economic crisis. As we move into recovery, the world is notably different than it was in 2007. Clients and their needs have changed and they are busily facing new challenges and opportunities. Technology, politics, environmental concerns and legislation, social demographics, and government needs and policies did not stop evolving either. Old strategies cannot just be brought out, put back in the traces and expected to drag the firm forward into the recovery — their time is over. Entrepreneurial spirit, creativity and the ability to innovate are needed to lead, and firms will need a strategy that fits the times.

During 2011, we will look at both traditional and alternative ways of creating a strategy, including how tools like scenario planning can help to create a robust, adaptable plan. We will also explore how to help each person in the firm understand his or her role in implementing the plan, and the best ways of facilitating those actions.

DESIGN THINKING IS YOUR BEST TOOL

Strategy creation is a rich, living process that needs to be infused with creative energy. If a great strategy is imaginative, innovative, responsive to change and expresses the passions of its creators, then the process for fashioning that strategy and the strategic plan that outlines how to implement it must also be creative and passionate.

Design professionals bring a unique toolbox to this process in the form of design thinking — the combination of rationality, empathy and creativity that they routinely bring to bear on the problems of how humankind lives and functions in, uses and preserves the world. Those same skills can be put to work on the firm's strategy:

- **Define** the problem from both the clients' and societal/community view.
- **Research** innovations both within and outside the industry.
- **Ideate** by developing creative options that will address a future state.

- **Prototype** through testing these options with staff, clients and others.
- **Choose** the strategies that could be most successful for the future.
- **Implement** the strategies. This is the most difficult stage in our industry. It should include buy-in from staff, commitment to make the investment and not allowing current events to knock the company off course.
- **Learn** from the implementation of strategies those that are most effective.

In its fullest expression, this process can be revolutionary, leading to completely new or emergent strategies. The process also can be scaled to build on what is already working, to evolve and fine-tune current strategies and explore the potential value of making incremental changes.

ASKING THE RIGHT QUESTIONS

There are many considerations to take into account when preparing to design a strategy and the implementation plans that result from it. In the more typical strategic planning process, the firm leaders meet, each one jumps on his favorite “horse,” and they ride off in all directions. These differing directions often end up harnessed together in some fashion, but the combination may not work any better than pairing Clydesdales with quarter horses. To forestall this problem, the various offices, business units, board of directors and other leaders must engage in ongoing discussions, where they make effective use of questions and critical thinking, often called the Socratic approach. These questions might include the following:

- How will you decide on a strategy? Many firms follow a traditional strategic planning process. Others choose to let the vision of one strong leader, such as a Warren Buffett or Donald Trump, drive the strategy. Why would a firm choose one person instead of making a group decision? How are others in the firm engaged in that vision and educated in the strategy? How is buy-in obtained? What process would work best for your firm?
- Do you have the right leadership for the next stage in the firm’s history? What will an entrepreneurial leader bring? What will a management-focused leader bring?
- What is the role of the board in the firm’s planning process? Who will make the decisions and oversee them? When it comes to allocating modest resources, for example, who will allocate funds for investment?
- What is good about the current firm that must be preserved at all costs? Why?

**In its fullest expression,
this process can be
revolutionary, leading
to completely new or
emergent strategies.**

- If some aspects of the firm — markets, clients, staff, principals — no longer serve their purpose, what is the willingness of the firm's leaders to remove them? How? And how will the resulting wounds be healed?
- What are the firm's vision, values and culture? Not the overused words found in many corporate tag lines, but the actual aspirations, passions and beliefs that the leaders bring to the table.

How can those aspirations, passions and beliefs be best expressed in the strategic plan and its implementation, so that real action and results embody the firm's vision better than any tag line?

- Why should a firm engage in preparatory research? What can happen if it does not? Where do you look for data and of what kind? How do you select and interpret the wealth of information available?
- How far will you cast your net in looking at the world? What does looking at the best- and worst-case futures tell you?
- What does looking at multiple future scenarios tell you? What will you do to prepare for different eventualities?
- What does your firm mean by growth? Is it a goal of your strategic plan? Why?
- How do you define success? What does that look like for the firm and your key individuals? The staff? Your clients?
- How do you assess and manage business, professional and personal risk? Where are the boundaries and why?
- What will you do to prepare leaders for divisions, business units, operations, projects and other key areas in the firm? What can future leaders learn from being included in discussing these provocative questions and in the strategic planning process itself?
- What does your firm's history say about the reliability of your current answers to these questions?

These kinds of questions are tough, but they lead to valuable discussions. Whether your firm is led by a board, a leadership team or a brilliant, charismatic leader who sets the direction, having these conversations is a necessary part of developing great strategy as well as plans for implementing it.

USE THE RIGHT TOOLS FOR THE JOB

Design thinking and provocative questions are two of the most useful tools for your strategy creation process. A third one, implied in the list of questions above, is the use of future scenarios. Future scenarios are created by determining a set of current trends that affect your firm's business

Design thinking and provocative questions are two of the most useful tools for your strategy creation process.

conditions and projecting the different ways those trends may play out over time. Grouping similar/related possibilities into scenarios makes it easier to look at how future conditions may affect your firm, and what strategies and actions would be needed to respond to those conditions — whether the most likely or the least likely. The goal is not to know exactly what is going to happen but to prepare the firm for responding to eventualities.

Many design firms do not see scenario planning as a practical tool for them, due to the high, upfront cost of scenario development. To make scenario planning accessible to design firms, in 2009–2010 FMI created four future scenarios with the help of experts from A/E/C firms as well as academics and thought leaders from the industry. By adjusting these A/E/C scenarios to reflect the specifics of your firm’s markets, a range of eventualities can be determined. One scenario usually stands out for each firm as the most likely future within its marketplace and receives the strongest focus and planning. The other, less

The goal is not to know exactly what is going to happen but to prepare the firm for responding to eventualities.

HEWLETT AND PACKARD: THEIR STRATEGY? CONTRIBUTE TO SOCIETY.

The story is a famous one: two electrical engineers graduated from Stanford University in the depths of the Depression, and with encouragement from their professor, Frederick Terman, formed a small company in a garage. Through the force of their ability to create a collaborative culture, they forged a company that entered the Fortune 500 in 1962 and has remained there since.

Throughout the history of Hewlett-Packard, three things stand out: the commitment of the two partners to work together; the ability to constantly reinvent the business; and the development of a corporate culture that was highly social, objective-driven, creative and decentralized at a time when hierarchical organization was the dominant model in the U.S.

The goal that led to their success was simple: contribute to society. The way they accomplished it was simple: constantly reinvent. The two leaders combined technical know-how, curiosity and a willingness to learn from doing and from failure with a keen sense of what would work. Their contributions to American society and business would fill an encyclopedia.

“I think many people assume, wrongly, that a company exists simply to make money,” Packard told an HP management training session in 1960. “While this is an important result of a company’s existence, we have to go deeper to find our real reason for being. A group of people get together and exist as an institution that we call a company, to do something worthwhile — they make a contribution to society. The real reason for our existence is that we provide something which is unique.”¹

What lessons does the story of Hewlett and Packard hold for architecture and engineering practices?

likely, scenarios are can be used for preparing contingency plans, so that the firm is not caught without a response when the inevitable economic and political shifts occur, unforeseen competition arises or disasters strike.

Using the best tools can help a company create a more robust, flexible strategy that reflects the passions of the firm's leaders and is resilient to change, creative and implementable.

COMING UP

Once you have defined your questions, what is the next step? Research and ideate. In our next article, we will explore pros and cons of the various strategy creation processes, how and where you research the information you need, and how ideation works to bring creativity into the process. ■

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¹ Retrieved from http://www.stanfordalumni.org/news/magazine/1998/julaug/articles/founding_fathers/founding_fathers.html

STRATEGY

Winning Profitable Work? Start With Strategy

Increased project opportunities are bringing optimism and hope to an industry economically challenged over the last several years. Architects and engineers are busy with new work, and some stalled projects are receiving new life. Contractors are struggling to pursue and estimate the work they have before them. All of this comes amid increased competition, low profit margins and smaller staff levels.

Companies resized to fit a smaller market. Now the challenge is having the right resources to win the work needed to grow and thrive.

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Contractors are feeling like they are back on the business development and estimating treadmill. They are trying to do emergency triage to determine which projects to pursue with great effort to bring creative solutions, develop stronger relationships and position to win, and which projects simply to estimate, hoping to win with the lowest bid. Customers are clearly in the driver's seat today. They are getting the best and frequently the biggest

contractors, all struggling to be positioned to win work. A large part of the industry has been challenged with profit margins. Some projects were won with pricing levels that will prove devastating by project completion; others were won by innovative project approaches that will save customers both time and money. The challenge is that not every project and customer warrants the time and effort in creating a unique approach to build the relationships internally that will help you get positioned. Simply put, not all projects are created equal when it comes to your company's time and resources. So how do you decide which ones to pursue?

DIFFERENT RESULTS, DIFFERENT COMPANIES

In the same economy, different companies get significantly different results. Where many contractors have struggled financially, others have positioned their companies quickly and are enjoying banner years. Of course, not all markets, geographic regions or market segments are created equal, which explains a bit of the difference in companies' results. Your answers to the questions reveal much about your approach to business: "If you knew a year before the recession hit what the economic and competitive environment would be today, what would you have done differently?" Would your answer change if asked, "What would you have done if you knew the depth and duration of the recession three years in advance?"

Most contractors quickly come up with concrete, specific actions they would take. They would get better economic information early, make structural changes faster, shift into different market segments, increase their talent pool faster, etc. Most of the changes people would make would negate much of the economic impact their companies experienced.

YOU ARE DESIGNED PERFECTLY TO GET THE RESULTS YOU ARE GETTING

If you want real change in outcome, you have to make real change in what you are doing. The key is not depending on after-the-fact reactions to economic changes; it is making sure you anticipate the changes ahead and position your company for success. You must have confidence in your vision of the future. What most people see today is a slowly improving economy, packed with more project opportunities. Many competitors find themselves in dire need of backlog, whether they are a big or small company. All companies need to focus on doing what they can to find and win sensible work. What better place to get positioned quickly than the type of work you pursue and chase?

Simply put, not all projects are created equal when it comes to your company's time and resources. So how do you decide which ones to pursue?

WINNING YOUR SHARE OF THE WORK

Start with a clear strategy when you are trying to win your fair share (or better yet, more) of the work. Become clear about your market white spot, which is where you are the most successful winning work and where you are consistently able to make money.

Strategy answers the question of “how” you will win the work. It identifies the right target customers, projects and geographic areas. Your go-to-market strategy needs to answer why the client would pick you over other qualified contractors. When a strategy is clear, you should be able to convey it to your team in a few sentences.

Each of your key markets needs a unique go-to-market strategy. The strategy needs to identify not only the kind of work, but also the type of customers, how to win them and the business reason that will cause them to pick you. At times in the history of your firm, strong customer relationships

At times in the history of your firm, strong customer relationships alone would sustain and build backlogs. Today, it is a more complex environment than will be solved with simply a good business relationship.

alone would sustain and build backlogs. Today, it is a more complex environment than will be solved with simply a good business relationship. All companies have been impacted, more or less, by the economic winds buffeting the nation. When customers look at their construction projects, they sometimes think it would be easier to squeeze extra money out of those versus finding more savings in operations and administration. Even your customers’ customers are clamoring for cheaper, better, faster strategies.

Today, you need to give customers a business reason to pick you. The emotional connection of the business relationship needs to be coupled with the logic of how the deal serves the customer — something it can share with its senior team or board. In order to determine the business reason that

will enable you to land a major project, find out more about your target customers — what is important to them, their strategic goals, challenges they are experiencing from their competitors, what customers are demanding of them, etc. As you learn more, you will be able to find unique solutions that will resonate with these customers and get you selected. Discovering more about target customers might be the result of having fun golfing (or hunting or fishing or other) together. While having fun is certainly not the business reason, such time together provides the access to get to know your targets, find out what is important and share your story with them.

THINK “WORK MIX”

Effective management of work mix has always required planning business development and estimating efforts to target market segments, key customers, types of work and project size. Keeping a strong, consistent backlog is a profitable strategy. Backlog focus needs to also laser in on work from targeted, repeat customers; amount of work available with a limited field of qualified customers; likely competitive response; and strategies to fill holes that can appear. Build your get-work efforts to deliver a mix of work where you can be successful in both winning and building the work.

Rebuilding company capability and moving from right-sized in a smaller market to right-sized in a growing market requires growth and consistency in backlog. Identifying targeted work needed from each is the first step in winning your fair share of work. The second step is conducting a strategy session by market segment where you identify where you are similar to top competitors in your offerings and where you can provide something different that is highly desired by the prospects in that segment. Look at your company through the eyes of your customers. Customers always know more about competitors; they work with them, they gossip about them, they respond to the positioning of your competitors. Get input from customers as to your similarities and differences from your competitors. Do not be overly concerned if they tell you that your company is rock solid, but is pretty much on par with competitors. That is the challenge in much of the industry ... to differentiate oneself from what often is viewed as a provider of commodity service. Without unique characteristics, you easily fall into the commodity trap.

Identifying areas where you are different comes from strategic thinking or strategic planning for most contractors, not from having your marketing department create a clever way to say what you are already doing. The need is to come up with differentiation in fact, not spin.

Plan on spending time to identify, challenge and target ways to be different. Focus on what you can provide that is not easily knocked off by competition. Lasting differentiation is usually based upon core competencies: What are you really good at doing? If you and your team can think of and

WHAT IS YOUR STRATEGY?

- Target higher education clients that have a growing student base and need to expand quickly to meet short-term demand. Share with them alternative financing strategies that will get their projects in the ground faster, at a reasonable cost with the flexibility of design they need.
- Find and win small, regional retail customers who have limited construction staff and strong potential for future growth. Share with them the lessons learned from building hundreds of units for a variety of customers and become a trusted member of their construction staff.
- Target cities and municipalities who have aging wastewater treatment facilities and growing populations. Get positioned with creative approaches before they face EPA fines to help them finance, build and operate the plants.

quickly implement clear points of differentiation, so can your competitors. Think of ways you do business and the systems, processes and capabilities that your company has that, when highly focused, could create an advantage. Those competitive advantages are always much more difficult and, therefore sustainable, opportunities for differentiation.

CONCLUSION

You wear many hats today. You are a strategic force inside your company and with customers. You are a hands-on, roll up your sleeves type of person who quickly hops in and gets the job done, whatever that job might be. Today, you also need to be a rainmaker for your organization, regardless of whether you view yourself in business development or not. Customers want wider and deeper contact inside construction companies. Providing that is not only being responsive to the customer, it also sets you up with a significant opportunity to discover how to add value and win future work.

Think strategy when trying to win the work you want. Think broader than focusing on specific projects. Start with identifying your go-to-market strategy, then follow up with an internal strategy session identifying what you can provide customers that gives them the business excuse to bias work your way. You can build on that approach by then holding a winning strategy session where you identify what you can provide to the customer on a specific job that is different than the pack of competitors nipping at your heels.

Get creative when devising ways to create an apple-to-oranges (versus an apple-to-apple) comparison on projects in the mind of your customer. If you offer the same as what key competitors offer, then the only reasonable alternative available to the customer is to buy on price. Help your customers while helping yourself. Give customers a solid business reason to select you, at a price you both can live with. And do that in every market segment you choose to serve. ■

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STRATEGY

Market Segmentation's Role in Strategy Development

For most companies over the past couple of years, revenues have diminished with fewer project opportunities, resulting from delayed or canceled capital programs. Downward pressure on profit margins continues as competition has intensified. This comes not only from traditional competitors who vie for what remains, but also from a growing number of new competitors as contractors expand their reach into new geographies, new segments or both.

"Selling to everyone makes a buyer of none."

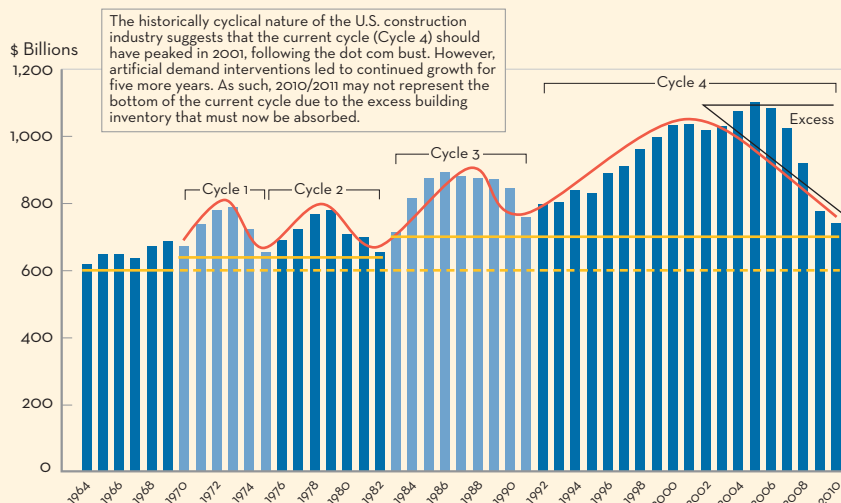
This article addresses those companies that have determined that their current or previous customers will no longer provide the needed profit and revenue sources. New customers must be found. The most efficient and effective means of achieving this is via market segmentation, one of the most overlooked aspects of strategy development.

The question that many now ask is, "Is the worst behind us?" Perhaps. There are positive signs in the economy that could be interpreted as the early stages of recovery. Yet there are others that hint at further decline equally so. Robert Shiller,

author of *Irrational Exuberance* (Princeton University Press, 2005), assembled housing price data for the past 120 years in late 2008. One interpretation of the data is that home prices would need to fall at least another 20% to return to fair market value (this after a 30% fall from their peak during the first two years following the housing bust). Likewise, a simple examination of construction spending put in place, adjusted for inflation, reveals an interesting pattern (see Exhibit 1). However long an expansion (read year-over-year growth), an equally long recession followed and to approximately the same starting point in terms of volume. This pattern was observed from the 1960s until the early 1990s, when a sustained expansion of about 15 years was experienced.

There are positive signs in the economy that could be interpreted as the early stages of recovery. Yet there are others that hint at further decline equally so.

Exhibit 1
**Total Construction Spending Put in Place (U.S.)
2005 Constant Dollar Basis**



The purpose of sharing this is not to scare you. Rather, it is to recognize that the strategic triage efforts, employed with the initial shock of the recent recession, mostly have been expended. Consequently, for many companies there is the current realization to pursue, aggressively, what opportunities do exist and find ways to differentiate themselves from their competition.

Regardless of national statistics and prognostications, evidence of recovery remains elusive for many local markets and segments. The resulting sense of urgency regarding the situation often leads to biased and superficial analysis of new opportunities — that is new customers, new segments and/or new geographies. Too often, decisions are influenced solely by the size and growth characteristics of a market. Little or no thought is given to the potential match of these markets to the company's goals and objectives, distinct competencies, value offerings, assets and skills. Other neglected analyses include customer buying practices and preferences, competitor positioning and supply-side considerations (e.g., subtrade relationships and availability). This is a lot to consider, but when the cost of failure is potentially large, the added investment to ensure a greater chance of success is warranted.

The central role of market segmentation is profitable growth. It is not settling for smaller sales potential or lower profits, as some have mischaracterized it. Rather, the goal is to increase sales by getting a much larger share of the business in the market(s) a company targets and seeking to satisfy the target markets to build such close relationships with customers that it results in no real competition. The combination of the two creates the opportunity to command a higher price and larger profits regardless of economic conditions.

AGC Flat Glass North America, formerly AFG Industries, a company that manufactures glass, had a small market share when it was trying to sell glass in the broadly defined construction market. In other words, the company had no particular

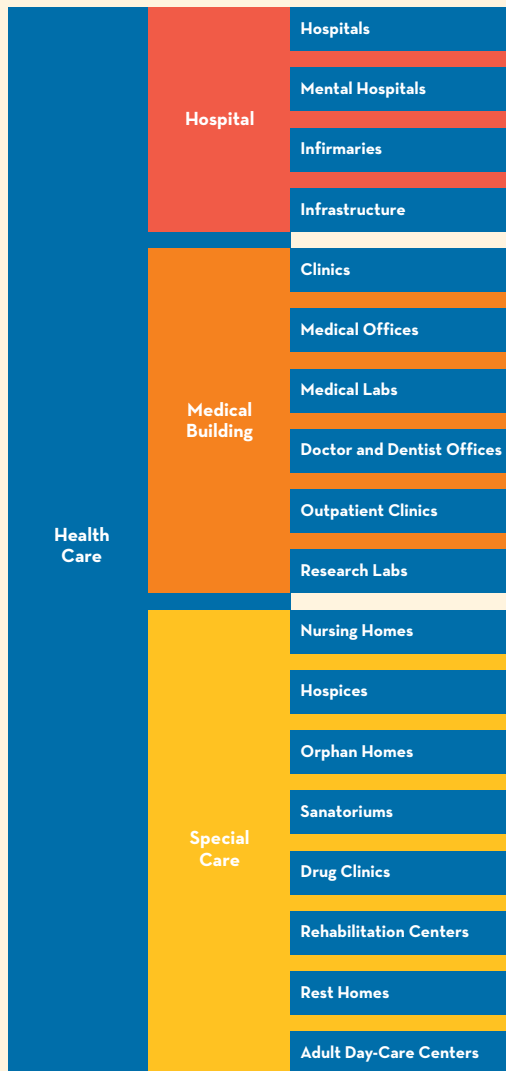
But when the cost of failure is potentially large, the added investment to ensure a greater chance of success is warranted.

Regardless of national statistics and prognostications, evidence of recovery remains elusive for many local markets and segments.

segment focus or segment strategy. Then AGC Flat Glass marketing managers focused on the special needs of firms that used tempered and colored glass in their own production. AGC Flat Glass planned marketing mixes for niche segments that did not get attention from the larger producers. As a result, it captured 70% of the sales of glass for microwave oven doors and 75% of the sales of glass for shower enclosures and patio tabletops. This enabled AGC Flat Glass to earn the best profit margins in its industry. Because the goal of market segmentation is profitable growth, the principal focus is the identification and creation of sustainable competitive advantage, just as AGC Flat Glass was able to do.

At its simplest, three major steps must be performed to segment a company's market(s) successfully. The first step is to define the markets and segments. This requires specificity. Many currently view the health care segment as a growing, or at least not declining, market and therefore an attractive expansion option. Assume a general contractor decides to pursue health care. There are more than a dozen subsegments in the health care segment, including hospitals, medical office buildings, ambulatory surgical centers and nursing homes, all of which could be further

Exhibit 2
Health Care Segments and Subsegments



segmented in increasing specificity (see Exhibit 2). As such, market share could be exceedingly small if defined broadly — in this example, total health care — and distract the company from focusing on those segments where it can be most competitive.

When defining a market segment, segments should also be comprised of

buyers with similar characteristics. For example, a builder of apartments may find a local college shares the same characteristics when it comes to student housing. Building sizes and finishes may be the same. Oftentimes, these characteristics will also relate to buying practices, contracting and delivery methods, etc. Analyze your customers based on profit contribution and then

This process is not solely reserved for new strategies. It is equally beneficial to those that want to reexamine their current customers and focus their efforts on those that contribute most to the company's profitability and growth potential.

determine the characteristics of those that top the list. Most likely, you will find similar traits among them. From there you can begin to identify other potential customers that share these characteristics as well.

In the second step, there must be an understanding of the value required by buyers. What needs are the customers trying to fulfill? What does the customer value? Perhaps it is the lowest price or speed of delivery. Maybe it is exposing the customer to new materials or methods. This does not need to be complicated. The answers to these questions are typically found from customer satisfaction survey results and speaking directly with customers. Referring again to your most profitable customers list, the question to ask is, "What did they most appreciate about your involvement?"

Once you have determined what these customers need and value, you can begin to identify what

it is about your company that allows you to meet these needs. This has the added benefit of limiting the market message you must convey and directing resources that further develop your abilities into a sustainable competitive advantage. Furthermore, it is more easily transferred to new customers in new markets.

With the first two steps complete, it is time to evaluate the market and segment attractiveness. This should be based foremost on profitability. However, market size (present and future) and the match between what it takes to appeal successfully to the segment and the organization's capabilities must be considered. This lends itself to three important criteria on which to base your decisions:

- **Is the segment measurable?** In other words, is the segment that you have defined large enough and specific enough that you can make reasonable estimates of the revenue opportunities available?

- **Is it meaningful?** Suppose you can measure the size of the segment. Will it provide a sufficient revenue source and growth potential for the long-term profitability of the company?
- **Is it marketable?** Does the company possess the means to successfully reach customers in the segment and deliver to their needs?

No strategy that includes the pursuit of new customers and markets should be developed without conducting adequate market segmentation. However, this process is not solely reserved for new strategies. It is equally beneficial to those that want to re-examine their current customers and focus their efforts on those that contribute most to the company's profitability and growth potential. Given the current economic climate, the margin for error is increasingly small. Playing to your strengths includes playing to the right customer and market segments. ■

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Quarterly Interview

Investing for the Future

Sal LaScala

senior vice president for Learning and Development
TURNER CONSTRUCTION COMPANY

**Sustaining relationships
and developing a cadre
of leaders capable of
responding to change are
hallmarks of companies
that achieve a level of
success during and following
economic downturns.**

Doing more with less. Does this sound familiar?

Most construction firms have slashed their budgets over the past few years, often leaving employee training and development as one of the first areas to be cut. Employee development is often viewed as an overhead cost, but many organizations recognize the significant benefits realized by maintaining a strong training and development program. Turner Construction Company is one of those companies.



Founded in 1902, Turner Construction Company had a construction volume of \$7.8 billion in 2010. The company's network of 46 offices in the U. S. and active presence in 20 countries allow for widespread accessibility and opportunities for its 5,000 employees. To prepare for this interview, *FMI Quarterly* reviewed the 2006 interview with Sal LaScala, senior vice president for Learning and Development, where we learned about the Turner Knowledge Network and how the company was developing leaders while simultaneously building strong customer relationships. *FMI Quarterly* was interested in discovering if anything has changed over the past five years in terms of leader development at Turner, especially in light of the recent recession.

FMI Quarterly: Sal, what has Turner done to weather the economic downturn of the last several years?

LaScala: Since Turner is a global company, we can provide opportunities for our people in offices or areas that have more work. We know we have the people available within our company, so our size is definitely an asset for us. Turner plays to its strengths, which include our health care, education, green building, interiors and sports markets. Since those markets still provide significant opportunities, we have focused on continuing to explore them. Like other firms, we are seeing that government work has also provided us with even more opportunities over the last several years. For example, we recently were selected to lead the construction of the V.A. Hospital in Denver, Colo.

FMI Quarterly: Have you adjusted your strategy for developing leaders in the past few years?

LaScala: The culture at Turner has always been to develop the individual's career, and that has not changed. We have always tried to develop people that have skills in the various areas of our business, such as estimating, purchasing, field supervision, etc. At the same time, there are always variations in talent, skill level and interest, so we put people where their competencies are needed the most. We move our talent from one area and redeploy them to another area, as long as they have the necessary skills, abilities and interest. In today's economy, firms may need more resources in the whole area of pre-construction, such as business development and estimating.



FMI Quarterly: Have the qualities you look for in a leader shifted during the current economic recession and globalization trend?

LaScala: It is mostly the same, but it does evolve over time. For example, today we are looking for leaders to have more of a focus on sustainability and environmental consciousness. We expect our leaders to be aware of how sustainability relates to the projects we are building. That is a different sort of leader — one who is focused on being a corporate citizen and becoming more involved in the communities where he or she lives and works. We also need leaders to take a more lean approach to the building process. I imagine these are the same trends that are happening throughout the industry.

More than ever, we expect our leaders to attract and retain talent and to have more knowledge about the generation entering the workforce. Almost 25% of our staff is Millennials, who are people born after 1981. Awareness of generational issues is crucial to our efforts to attract, grow, develop and retain the best of them.

FMI Quarterly: It sounds like the leaders of the future will need plenty of people skills.

LaScala: As time goes on, and you take on more leadership responsibility, a focus on technical skills is replaced by a focus on people and leadership skills. A successful leader must do more than just build buildings; he or she must also build people. Those are the kind of leaders that we look for and those are the ones who are successful at Turner.

FMI Quarterly: Is there anything else you look for in developing leaders today?

LaScala: Our vision for leadership development is one that develops broad competencies through learning, both on and off the job. We put people in roles and give them experiences to help them grow. We want our leaders to have the ability to collaborate on strategy and direction, and then share AND drive that direction to innovate and take the company to new heights. Fostering innovation and creativity helps grow our business in new and different ways. An example would be if you look at what Building Information Modeling (BIM) has done for our industry. It did not come only from the top down; it also came from the bottom up. Many of our younger staff felt there was a different way to analyze a building's structure, cost and schedule. They were motivated by the technology, but it brought to the industry a new way of looking at how to solve problems. That is what we do in construction — solve problems.

Another grass-roots drive is sustainability. Here is a strategic initiative by people concerned about our planet, our country, local communities and finding better ways to build. It is transforming the way we think. Our leaders are great drivers of change in our industry. Therefore, we need them to be big-picture thinkers and change-catalysts who are open to new ideas. Leaders must be open to change, embrace it and be collaborative about it. I think that is where leadership is headed. Consequently, we are developing people who are less autocratic and more collaborative in bringing value to the client.

FMI Quarterly: What impact has increased competition and shrinking margins had on your business?

LaScala: We emphasize building relationships and delivering a high level of service to our clients, so we do a lot of repeat business.

It is the foundation of who we are, and it is a pretty simple deduction. By continuing to maintain strong relationships while delivering our services, we will continue to get work as the contractor of choice for our clients. However, with the industry downturn, many clients are downscaling their building activity. For us, that has resulted in an increased amount of design-build and lump-sum work that we can perform for a much broader network of clients. While we still work on a significant number of large projects, we are now

We want our leaders to have the ability to collaborate on strategy and direction, and then share AND drive that direction to innovate and take the company to new heights.

working on many more projects valued at less than \$10 million. These opportunities are often delivered through our Interiors and Special Projects divisions that were set up with these types of projects in mind. All of these changes have an impact on the skills our people need and the training and development programs we deliver. As an example, we have developed specific

requirements for staffing the design-build aspect that we deliver for our federal government work.

As for leader selection, while we hire and develop leaders from outside the organization, our history focuses on internal growth, and that has worked well for us.

FMI Quarterly: How do you find and grow your leaders so effectively at Turner?

LaScala: An advantage we have is a tried-and-true development program for our people that we continue to enhance over time. In addition, our college recruiting program specifically looks to provide a pipeline for tomorrow's leaders. This past year, we interviewed more than 4,000 college students and hired 237 of them. We are not looking for just builders; we are in fact looking for all kinds

of talent. Another thing we do with all of our employees as part of their growth is an annual development and appraisal evaluation. That helps us and our employees target areas that need improvement. We build our training around the developmental needs for the various levels of leaders throughout the organization. In addition, our extensive network of offices and divisions, as well as the wide range of services that our company offers, provides many opportunities for our employees to grow and showcase their leadership skills. As for leader selection, while we hire and develop leaders from outside the organization, our history focuses on internal growth, and that has worked well for us.

FMI Quarterly: How do you ensure learning and development are relevant for everyone at Turner?

LaScala: We come up with learning and development strategies that are appropriate for the various families with our company. For example, we have a construction family, a finance family, a human resource family, a safety family and a marketing family (among others), which amount to 10 families in all. There are areas of training that are more important in some family groups than in others, so we have fine-tuned our learning and development activities to fit the person's job role and responsibility level. We also develop training pertinent to the achievement and next level of development for the employee. This enables us to focus more on the learning and development needs of

each family and each individual so they can receive specialized instruction, instead of grouping everybody into one category. Finally, there are classes that everyone takes. These include ethics, inclusiveness and building skills, such as communicating and interacting with people.

FMI Quarterly: Tell us about the learning and development system at Turner, starting with the field employees.

LaScala: We have significant Web-based learning, but nothing replaces on-the-job experience in learning how to be a great superintendent or engineer. We have put into practice a program called BUILT: Business Unit Instructor-Led Training. It is a system in each of our offices where we have the best subject matter experts on a particular topic lead classes that are developed with the support of instructional designers to help us develop a fun, interesting session to get the most out of the time. These sessions include activities, simulations and role-playing so the employees can go back to the field and apply the techniques they have learned. We are extremely proud of the program, as it delivers the learning our employees need, delivered by the leaders they know and trust.

FMI Quarterly: You talked about the importance of people skills — how do you develop the soft skills?

LaScala: We make significant investments in delivering the learning our people need. Some of the soft skills we aim to develop include leadership, conflict management, talent development, basic management and social interaction skills. We often work with outside consultants and facilitators, such as FMI, to help lead these courses, and then we hold people accountable to apply the lessons to their jobs.

FMI Quarterly: Tell us about your Executive Leadership Program.

LaScala: We have continued to invest in three leadership development programs, specifically designed for our future, incumbent and senior leaders.

First, we bring our high-potential leaders together for a week of extensive learning and developmental activities once a year. What makes this program successful is our senior leaders are the teachers. It is a fun week where we explore topics such as crisis management, community leadership

We have significant Web-based learning, but nothing replaces on-the-job experience in learning how to be a great superintendent or engineer.

and innovation. We spend time on extending client relationships and adding value, so it is not your normal business school program. It is an intense week.

The other two programs involve ones delivered at the Kellogg School of Management part of Northwestern University in Evanston, Ill. It was chosen for its reputation as being one of the country's leading executive education business schools. Kellogg has some great thought leaders and practitioners who worked with us to develop a program unique to Turner. The program is designed for our general managers, operation managers and financial managers and covers a myriad of business topics. As part of that program, we examine Turner at different levels, like innovation, best practices, knowledge sharing and succession/progression planning.

In the learning field, it is hard to measure return on investment. It is not something you always measure in dollars and cents. We believe our leadership development programs play an important role in our leaders' development.

We also worked with Kellogg to develop our enterprise leadership program, which is geared toward our most senior-level managers. I would describe it as a business school environment where we are looking at Turner as an enterprise, both locally and globally. The goal is to think about how we can help our future leaders be more entrepreneurial in the markets they serve. How can we create new ways of doing business or take ideas and run with them? We also think about how we are positioned, nationally and vice versa. Strategically, how do we fit in? How do we share resources better, as a national

concern? Those are the sorts of topics we explore in depth through the facilitation of the business school faculty. In every program, there are simulation exercises, open discussions and forums, and team exercises. It truly is an invigorating environment.

FMI Quarterly: The payback must be significant to continue to invest in good times and bad. How do you measure the return on your investment?

LaScala: In the learning field, it is hard to measure return on investment. It is not something you always measure in dollars and cents. We believe our leadership development programs play an important role in our leaders' development. For example, FMI's Leadership Institute provides our people with self-awareness, not only through the 360 review, but also using other

behavioral assessment tools. We like the one-on-one coaching aspect as well, and that the Institute is private and off-site. Participants always come back from the various sessions we offer, energized and engaged. This communicates that the learning is powerful and having an impact on them. In addition, we survey participants in these programs asking them how they have implemented the skills they developed into their activities. When they tell us the successful ways they are using the skills we helped them develop, we know that our investment in them was worth it.

FMI Quarterly: You must have many people in the learning and development department at Turner!

LaScala: Yes, and it does take a lot of work. We have training directors in each of our offices and a group that is focused on the learning process. Questions such as how we can deliver learning in more efficient and consistent ways, and how that learning can be used most effectively on a job, are vigorously examined. We are focused on learning in general, as well as its methods and how we can best serve our people.

FMI Quarterly: Thanks for your time and your insights, Sal!

LaScala: You are welcome.

Slash-and-burn overhead cost reduction has enabled some companies to stay afloat when others have succumbed to economic chaos or malaise. However, the slash-and-burn method usually has future costs, such as losses of talent, client relationships and bench strength in key functional areas. Sustaining relationships and developing a cadre of leaders capable of responding to change are hallmarks of companies that achieve a level of success during and following economic downturns. Turner Construction Company has continued to invest in the future and client relationships through leader development and will continue to follow its leaders every step of the way. ■

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When More of the Same Won't Work

Those who neglect to think deeply and strategically will find themselves facing a future reality of entrenched competition and a constant struggle to catch up.

By Briston Blair and Jake Appelman

With the advantage of knowledge gained by the passage of time, we have insight into the causes behind the global credit crisis leading to our long national recession. Looking back, the warning signs should have been clear to the public and most certainly to the economic experts.

The cast includes banks that took on excessive leverage; investment bankers who created increasingly complex financial products; rating agencies that were either uninformed or complicit; mortgage lenders that lowered applicant qualification standards; and homeowners who bought into the artificial disconnect between income and home price. Underpinning this fragile system was the assumption, supported by decades of experience, that home prices always go up — until they did not.

If these signs are so clear to us now, why did we fail to see them? Why did the experts not see the disaster that was coming? The answer is that most of them were busy — managing their businesses, families and personal time. The life of an executive leader is demanding even in the best of times. In the midst of a booming economy, there was little sense of urgency to take a clear-eyed and informed look at

“The greatest danger in times of turbulence is not the turbulence. It is to act with yesterday’s logic.”

— Peter Drucker

our assumptions, even though we should have seen the warning lights flashing red. The most accurate answer is that very few people were thinking strategically about the current situation in order to understand the implications of the new environment on the future of business.

We are all sharing the pain of not seeing strategically in the construction industry, where our unemployment rate nears 16% and we face the prospect of long stretches of less work and lower margins. Many construction companies have

With strategic thinking relegated to a kind of “sixth sense,” it is no wonder that leaders who possess the gift struggle to pass it on to the next generation and lack the skill to spot strategic thinking ability in others.

or will face a decisive inflection point where organizations will sort into two main groups: those who pine for the past by reacting to a rapidly changing environment and those who anticipate the future by acting to capture opportunity. One of the single-greatest differentiators in the new reality of our current economy is the capacity of leaders to think strategically.

DEFINING STRATEGIC THINKING

Highly entrepreneurial senior leaders often convey an almost mystical aura to their strategic thinking abilities, referring to a “gut feel” or “sharp instincts” or the equally nebulous “executive judgment.” With strategic thinking relegated to a kind of “sixth sense,” it is no wonder that leaders who possess the gift struggle to pass it on to the next generation and lack the skill

to spot strategic thinking ability in others. In fact, the apparently abstract concept of strategic thinking rests on the firm footing of specific, observable behaviors. Even more importantly, this thinking skill can be intentionally and purposefully cultivated in leaders. Strategic thinking is not hard to describe, and some of the keys skills include:

- **Vision.** The ability to envision a future that has not happened is a fundamental skill of strategic thinkers. Without it, leaders are purely opportunistic and reactive. Great strategic thinkers craft a clear picture of the future of the business, its competition, markets and people. And, even more importantly, they share the vision in a way that engages people deeply and stimulates movement toward that vision.
- **Pattern recognition.** Strategic thinkers must be exceptional trend spotters, able to recognize patterns that emerge in social, political, economic and technological change. This ability to “connect the dots” among seemingly unrelated trends, think through the implications for the business, and react quickly and appropriately is essential to strategic thinking. For example,

environmental consciousness emerged as a powerful force decades ago, providing ample time for forward-thinking construction leaders to prepare for the LEED movement, new project delivery methods and changes in technology.

- **Seeing risk.** A key component of strategic thinking is the ability to take a clear-eyed, realistic view of an organization's risk profile. Many companies are naïve about their competitive position, exposure to financial and project risk, the depth and quality of their leadership team, and, by extension, their ability to survive, much less carve out sustainable advantage. Great strategic thinkers have a constant, restless sense of low-level paranoia that drives them constantly to test their assumptions and beliefs about the risk of the business.
- **Systems thinking.** Strategic thinkers are able to visualize their business as part of a deeply interconnected system, similar to an ecological system where actions in a far-flung, seemingly unrelated part of the system can have significant impact on other parts. The emergence of China as an economic and geopolitical force is a prime example of a player in the system influencing materials prices, labor supply and competitive position in a far-reaching manner. The best strategic thinkers see from a "helicopter" view from high above, allowing them to visualize their business as a piece of a larger system. They also possess the ability to see an x-ray view into systems of their own organizational processes and structures.
- **Creating purpose.** One less frequently mentioned ability of strategic thinking is the capacity to create a unifying sense of purpose in an organization. Great leaders are relentless about articulating a compelling sense of "why we exist" and instilling a deep sense of meaning into organizational life. Purpose adds depth, richness and direction to strategic action.
- **Innovation.** Innovation has become a mantra for U.S. businesses looking to compete in a world where traditional competitive advantages give way to more flexible, financially sound, labor-rich and authoritarian emerging countries. The fragmented nature of the construction industry and a generally shared belief that construction is fundamentally a tactical business limit the infusion of innovation as a competitive advantage. Strategic thinkers practice the ability to reframe their perspective to look at systems, processes and markets in a unique way. This underlying creative process provides an opportunity to do something different that creates value and translates that insight into meaningful commercial success.

A key component of strategic thinking is the ability to take a clear-eyed, realistic view of an organization's risk profile.

Unfortunately, the construction industry is an increasingly hostile environment for strategic thinking. Even more than other sectors, construction provides endless urgent demands, such as client complaints, project delays, financing problems and safety incidents. Additionally, the industry attracts many leaders who associate their worth with the volume of “things” accomplished each day and receive a deep sense of satisfaction with resolving immediate problems. This combination of factors can be toxic to strategic thinking.

DIFFERENCE BETWEEN STRATEGIC PLANNING AND STRATEGIC THINKING

Strategy at its essence is an organization’s ability to transform its resources into a source of advantage and differentiation. Many construction companies pursue strategic planning as a source of competitive advantage, and yet a great strategic plan is only as good as the thinking behind it. Often strategic plans involve little true strategic thinking and degrade into a predictable and routine exercise conducted

every few years at a management retreat. While creating a great strategic planning document is an important process, lasting advantage in a rapidly shifting market comes from the ability of an organization to develop and institutionalize strategic thinking.

In a consistent and predictable competitive environment where rules, resources and interests are clear and unchanging, strategy makes sense as a routine exercise. However, in a volatile, unpredictable, complex and ambiguous context, strategic thinking has more in common with creative thinking, and is more of an ongoing creative process of understanding and adapting new conditions to an organization’s aspirations for the future.

Strategic planning tends to be:

- Designed to generate a tangible product
- Usually conducted every three to five years
- A product that brings value through a data-driven evaluation of clients, customers, markets and organization
- Often systematic and linear
- Often conducted by the most senior members of an organization

Strategic thinking is:

- More of a process than a tangible product
- A mind-set and way of seeing the world that takes place constantly
- A process that brings value through individuals’ ability to identify both opportunity and risk
- Emergent and adaptable
- Can take place at all levels of an organization

While there are differences between strategic planning and strategic thinking, both are essential components in great organizations. In fact, neither is sufficient without the other. Strategic planning without strategic thinking results in a routine planning exercise, and strategic thinking without strategic planning lacks the magnifying power of a shared set of objectives. The great challenge organizations face is capturing the best of both.

Why is it important that the organizations of today — and more to the point, those of tomorrow — have a leadership team with a well-developed ability to think strategically about the world around them? More importantly, what can be done to develop this capacity? Experiences over the last decade suggest that operating environments will become increasingly Volatile, Uncertain, Complex and Ambiguous in the years ahead — the future will be defined by VUCA.

The concept of VUCA originally gained traction in military circles with the increasing prevalence of nontraditional warfare. After decades of preparing to execute a strategy designed for the expected type of war, the military and its leaders were receiving feedback from the battlefields of the Balkans, Afghanistan and Iraq that they were involved in a different conflict than anticipated. This new environment required a new set of tactics and methods to deal with conditions on the ground. Military personnel were finding this new type of environment to be exceedingly volatile, uncertain, complex and ambiguous, relative to the training they had previously received and even some of the operations in which they had previously participated. Outdated strategy, exceedingly challenging operating environments, ill-prepared personnel and the need for a drastically different way of competing to win were just some of the challenges. Does this sound familiar? Examine each element of VUCA on its own in order to grasp its importance and implications for organizations.

VOLATILITY

The volatility component of VUCA is one of the easier concepts to grasp. Companies have experienced it firsthand in their markets and retirement portfolios. Yet, as FMI looks to the horizon with its clients, the world is likely to be increasingly volatile in the years to come, not less. While the turbulence of 2008 is behind us, we anticipate more unsettling and unforeseen shifts in financial markets, commodity and base materials prices and many other key drivers of construction activity. As our world becomes more intertwined and connected, the more intense the impact and implications of volatility will be on our businesses (see Exhibit 1).

While there are differences between strategic planning and strategic thinking, both are essential components in great organizations. In fact, neither is sufficient without the other.

Exhibit 1
Volatility's Characteristics

Volatility Defined	Typical Responses to Volatility	Typical Results
Wider and wider swings	Increasing urgency to act, react	Reacting and chasing increases volatility
Increasing polarization	Offering wider ranges of products, services, etc.	Spread thin, but no respite
Increasing speed of volatility	Chasing - always chasing - but never catching up	Feeling hopeless and at risk

UNCERTAINTY

In his groundbreaking work *The Black Swan*, Nassim Taleb described in exquisite detail how our models and mental paradigms for assessing risk are far too simplistic and inadequate to protect us against the uncertainty inherent in a VUCA environment. A Black Swan event is defined by three primary qualities:

- It appears as an outlier because there was little to prepare us for its emergence in our experience.
- It causes an extreme impact.
- Despite its uniqueness and severity, we try to rationalize and explain it after the fact in a way that makes us feel it did have explanation and could have been predicted.

Taleb goes on to argue that the global turbulence caused by Black Swans will increase in magnitude as the collective fates of our national economies are tied together now.

What are the Black Swans in the construction industry? Was the collapse of the residential market one? It seems to hit the three points: It was clearly an outlier as home prices had historically always increased, it had an extreme impact, and there are piles of books explaining it. Exhibit 2 shows the characteristics of uncertainty.

Exhibit 2
Uncertainty's Characteristics

Uncertainty Defined	Typical Responses to Uncertainty	Typical Results
Unpredictable world marked by Black Swan events	Act with more certainty when we are less certain than ever	Paralysis and fear of making strategic moves
The unknown has greater impact than the known	Scapegoats, rationalizations and victims emerge	Attempt to ignore it all, but the stress remains
The past is no indicator of the future	Increasingly chase the immediate and short term	Feeling distrustful or disillusioned by "experts"
There is more information, but less true knowledge available	Exercise more and more control over our external environment	Over-analyze and study, but the information alone is no longer an advantage

Exhibit 3
Complexity's Characteristics

Complexity Defined	Typical Responses to Complexity	Typical Results
There are more interconnectedness and interrelationships between previously uncorrelated factors	Confusion and increased attempts to grasp at anything that makes sense	Resort to doing things that are comfortable and easy, but may have no real impact
More chaos and disruption	Becoming either increasingly sophisticated or simplistic in what we offer	The illusion of problem solving
More wild cards and unexpected winners (and losers)	Move toward the linear or binary	Ignore the connections and relationships in the environment
More unintended consequences	Everyone and everything is reduced to a problem to be solved	Failing to think in totality

COMPLEXITY

Quantitative easing, credit default swaps, collateralized debt obligations, integrated project delivery (IPD), federal health care, building information modeling (BIM) — ask a person on the street to explain the details of the above concepts and you are likely to be disappointed with his or her answer. While the above list of financial instruments, regulations and project delivery system trends is not exhaustive, it is a representative sample of the types of external factors that can combine to increase dramatically the complexity of our business environment. Leaders operating in today's world must be able to make the "if/then" connections among these factors. Characteristics of complexity are shown in Exhibit 3.

QUANTITATIVE EASING (QE) is a governmental monetary policy used by some central banks to stimulate the economy. The central bank creates money, which it uses to buy government bonds and other financial assets. QE increases the money supply by flooding financial institutions with capital in an effort to promote increased lending and liquidity.

AMBIGUITY

There are few environments where ambiguity is as pronounced as Afghanistan. Our soldiers never know whether the village is friendly, hostile or at the tipping point. To be able to deal with this type of situation, they have to be prepared to engage in small-arms fire on the way to a village celebration by having an incredible amount of mental and physical flexibility. As we look around our industry, there are macroeconomic and microeconomic indicators pointing north, south, east and west. Owners and clients are unsure whether they want to take advantage of low pricing and interest rates or delay their building program another year or two. Whether you were fortuitously positioned for today's market, or you were caught off guard by the swiftness and severity of the changes, ambiguity in the business environment will only increase and flexibility and adaptability

Central banks use QE when interest rates already have been cut and are near 0% levels. It is an unconventional and controversial policy among economists. Quantitative easing may cause higher inflation than desired if it is improperly used and too much money is created.

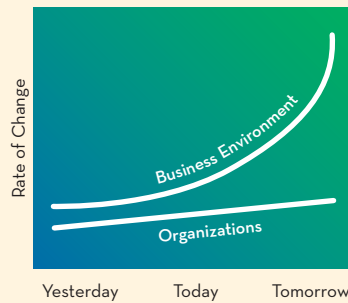
Exhibit 4
Ambiguity's Characteristics

Ambiguity Defined	Typical Responses to Ambiguity	Typical Results
The world is less full of problems to be solved than one of dilemmas and paradoxes	Looking for incremental problems to solve, but failing to grasp the larger root issues	Incremental improvement or major underperformance
Tensions and trade-offs are inherent in most decisions	Increasingly fixated on polarizing alternatives	Stand firm in that position and fail to engage in learning and dialogue
Discomfort with the historical strategy and structure of the firm	Rigidity, hierarchy, dogma	Becoming either too rigid or too flexible

will be the cornerstones of tomorrow's leading firms. Exhibit 4 shows the characteristics of ambiguity.

VUCA is a powerful concept indeed. Our military and other business leaders are investing heavily in developing the skills and competencies of their people to cope and excel in this type of environment. What we have found in our industry over the last several years is that the rate of change is exceeding many organizations' ability to adapt to the new business realities, as illustrated in Exhibit 5.

Exhibit 5
The Rate of Change



As the rate of change has accelerated, firms either adapt and thrive or stagnate in the hopes for a return to “normal” and lapse into failure. One of the main differences among the three extremes has been the ability of the leadership teams and the organizations to think strategically about their internal capabilities and the opportunities or challenges in the external environment. Those firms adapting and thriving have recognized the need to have strategic thinkers throughout their organizations for the following reasons:

- Industry demographics require that the next generation of leadership and ownership embrace a different way of thinking about the world.
- Organizational agility and adaptability are more important than ever in today's fast-moving market place.
- Our domestic and international markets are becoming more intertwined. There are intense global, sociological, economic, political, environmental and technological forces at play.
- Competitive advantages are increasingly difficult to create and sustain.
- Innovation is imperative to winning.

Now that we have defined strategic thinking and understand why it is important, let us explore the ways in which it can be developed.

SIGNS STRATEGIC THINKING IS LACKING IN YOUR ORGANIZATION

Recognizing a lack of strategic thinking exists is a crucial step in developing a more resilient and competitive organization. Strategic thinking is often more noticeable in its absence than its presence. Some common signs of a lack of strategic thinking include:

- Senior leaders complain about “not being pushed” by their direct reports and feel like they are coming up with all of the good ideas.
- Executive discussions lack clear outcomes and a sense of unifying purpose — meetings go on for hours with little substance or few deliverables.
- Companies focus excessively on binary, either/or decisions instead of wrestling with the complexities of competing thoughts and data.
- Leaders ignore or avoid hard strategic conversations because it is easier to focus on immediate, solvable problems.
- Complex issues are oversimplified into direct cause-and-effect explanations without considering causal environmental contributors.
- Employees take reactive, immediate actions without probing issues for the underlying causes.
- Teams make insular decisions without considering the competition and wider macroeconomic climate.
- Principals feel “trapped” in the business and limited in their ability to leverage their strengths because they are surrounded by operationally oriented tacticians.
- Healthy skepticism and challenging of fundamental beliefs about the business is not present in order to protect the egos and feelings of others.

DEVELOPING STRATEGIC THINKING CAPACITY

FMI’s experience working with hundreds of senior construction leaders underscores a strong belief that strategic thinking is like other abilities, such as project management or even athletic skill. We are all born with some baseline level of talent. Some leaders are naturally more comfortable thinking strategically because of a combination of their cognitive ability, personality preferences and other inborn traits. Others develop the ability over time through experience. Most importantly, strategic thinking is not a mystical ability. Instead, it is one that can develop over time through intentional practice, discipline and reflection.

There are several practical suggestions for becoming more of a strategic leader. Each of these comes with the warning that these are “simple, not easy,” meaning that while they

Strategic thinking is not a mystical ability. Instead, it is one that can develop over time through intentional practice, discipline and reflection.

sound simple, they are extremely difficult to develop without deep commitment, rigorous practice and accountability; otherwise all of us would do them all the time.

- **Carve out open space on your calendar to think.** Many construction leaders seem to embody the admonition, “Don’t just sit there, DO something!” when sometimes the best advice may be, “Don’t just do something, sit there and think.” This time must be regularly scheduled and relentlessly protected, or it inevitably will be swallowed up by immediate needs. Bill Gates is known for taking a “think week” twice a year, when he retreats to a cabin by himself to review a collection of ideas by Microsoft employees.
- **Surround yourself with outside perspectives.** Finding people who will question the sacred cows and dangerous assumptions of your business is essential. This is especially important in closely held and family-owned organizations, where people often agree with strategic decisions because the leaders making those decisions have direct influence over their compensation and career prospects. An executive coach, mentor or board member from outside the organization can be insightful in helping a leader examine the deeply held beliefs and assumptions forming the framework for making strategic decisions.
- **Stay aware of key trends.** It takes true discipline to stay aware of meaningful social, political, technological and economic trends. It is also insufficient simply to be aware; true strategic thinkers develop the judgment to distinguish between what is relevant and can have a meaningful impact on the business and what is simply background noise or a passing movement. Leaders must also be deeply intentional about their sources of information — at no point in history has there been so much information available to so many so quickly. As a result, information has become a commodity, and judgment, discernment and the ability to see implications have become the true differentiators of strategic thinking.
- **Practice envisioning the future.** The term “vision” is a common one and, as such, is often seen as something fuzzy and mystical. Instead, it is about designing a clear picture of a desired future that has not happened yet but could. This is a vital practice and one that can be sharpened and refined through experience. This is especially important in organizations needing a fundamental shift in their strategy, where an envisioned future should also be audacious enough to expose a need to change the existing practices.

Construction leaders face an environment of increasing volatility, uncertainty, complexity and ambiguity. This is undeniable; yet very few leaders know what to do about it. The answer lies in intentionally and purposefully developing the mind-set

of a strategic thinker. The forces that will shape our futures decades from now are currently playing out today. Even though most leaders are aware of them, these issues slip to the bottom of the agenda because each day there is a more pressing immediate concern. Those who neglect to think deeply and strategically will find themselves facing a future reality of entrenched competition and a constant struggle to catch up.

Companies who invest time, effort and money into developing the human capacity to think strategically today will reap the benefits of lowering the risk profile of the business, creating a deep moat of competitive advantage and ultimately build the foundations of enduring greatness. ■

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Operational Adaptability: Field Implications for New Strategies

Great contractors are able to adapt operationally and maximize profits while changing course toward their new strategy.

By Jim Schug



Over the past two years, many companies changed the way they perform work. Often the change was in geography, type of work or a shift into federal work from a history of building private projects. Some companies deliberately approached the change and sensitized their leaders to the decisions. Other companies made adjustments in their direction with strategy sessions. These strategy sessions gathered critical information about customer changes and competitive landscape to help leaders identify necessary decisions and chart a course for change.

Some companies were positioned well within their market and able to make small course corrections to adjust their strategy to be in line with their customers' needs. Mature companies use lessons learned from past recessions to develop this strategic agility. The speed of recognizing the need to change often arises from the ability to have the "eyes and ears" across the company provide feedback that the customer's needs are changing. These successful companies seem always to be one step ahead of their peers and tend to find the jobs with

significant profits first, before the rest of the contractors catch on and dilute the profit margin to nonexistence.

Fast adaptation to changing conditions is a trait of companies that sustain profitability. This article focuses on developing the operational ability to adapt quickly to market changes and strategic direction. Contractors often have a difficult time going from a boardroom strategic plan to enacting change in the field. Their

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nature is to focus rather on projects, often letting initiatives to improve the company or implement a change in strategy fall by the wayside.

Companies that are rapidly able to implement strategy shifts through operations with minimal profit loss have several factors in common that contribute to their firm's success.

OPERATIONAL ADAPTATION

Even though strategy development may be done well through the direction-setting phase, those good intentions are likely to fail without translation of intent into

action. With all leaders having a common understanding of direction, a solid foundation is built on which operational tools can be successful in consistent reinforcement of the changing strategy.

The planning team must have a solid grounding in understanding the market, the competition and how the company performs in the eyes of the customer. The development and debate around future goals and “what we should look like in five years” christens each team member as an evangelist for the need to change. It creates an urgency and set of priorities to assist in follow-through. This situational awareness and common vision give a solid foundation for the operational tools to be successful.

At a tactical level, companies successful with adapting to strategic change typically have three things in common:

1. Extensive project planning
2. Comprehensive lessons-learned sessions
3. Strong culture as a learning organization

These are the “tools” that arm leaders to help change course quickly. These tools are most successful as they are project-focused events, in line with the project-focused mind-set of most contractors. However, when “leadership row” is asked if these tools are in fact practiced, its perception is that these areas are perfect. When we ask the “center of gravity” of the organization (typically project managers or superintendents) the same question, we often learn tools are employed on difficult projects, tools are used once in awhile (when a key leader is present), or, in some cases, tools are just used to make the leaders happy. Each of

these motives misses the intent and value behind the best practices. Effective leaders are skilled at understanding how to enforce, hold accountable and “get a good feel” that these systems and processes are happening effectively, without becoming draconian. If the processes and tools are, in fact, best practices, most employees will want to use them.

TO PLAN OR NOT TO PLAN PROJECTS

A few things make superintendents cringe. Coming to the office to sit in a conference room for hours is near the top of that list. Most superintendents are pulled off a job to experience a project planning session something like this:

1. Enter a windowless conference room.
2. Listen to the estimator’s monotone voice cover cost codes for 45 minutes.
3. Listen to the project manager complain about the poor subcontractors bought out for this job for 25 minutes.
4. Hear the estimator and project manager say, “Good luck; the project starts tomorrow and has no room for error. We’re counting on you!”
5. Leave the conference room to have 15 calls waiting for you regarding the project you were pulled from to attend the hand-off meeting.

While this exaggeration may be laughable, for some superintendents it certainly has resonance. Many contractors have focused their efforts on developing a thorough, pre-job planning process that maximizes the information for the field, while minimizing disruption from current operations. The effectiveness of well-run, pre-job planning is undeniable in hours and dollars saved.

Solutions to this common problem can include some of the following:

- Involve the field staff (foremen/superintendents) with critical parts of the estimate
- Conduct a short hand-off meeting, covering critical areas and allowing the field staff time to get familiar with the project before the next more robust meeting
- Hold a means-and-methods meeting with vendors and subject matter experts
- Distribute the job files and review the lessons learned from previous projects that specifically apply to the new project
- Have the project team perform several on-site visits before mobilization to discuss site specifics
- Conduct a project team presentation about the approach to the project

No single solution will work for any contractor, but the right mix and timing of these solutions will reduce expensive mistakes on projects. Effectively done, the time spent preparing to build a new type of project pays even greater dividends when companies pursue new strategies.

As firms enter new markets or build new products to support their new strategic direction, many of the assumptions previously covered in the pre-job planning meeting come into question. New markets or new products may require a different set of permits from the traditional ones. The customer may have some unique requirements and/or documents, or there may be a need to cover means and methods in further depth when new technology or new work environments are in play. The most effective time to discover potential obstacles is before the job starts, in a well-structured and prepared meeting with key project members. A well-executed, pre-job planning meeting is evidenced by a detailed action plan confirming what loose ends need to be addressed. This action plan is reviewed and followed through regularly until completion, saving the company from expensive mistakes while executing new work.

WHAT ARE WE LEARNING?

For years, the Army conducted after action reviews (AARs) of every mission or training event. Typically, the format was well-facilitated and thorough to review the plan, what happened, what changed and why. Field manuals were written on how best to conduct the AAR, and it was a common practice that no matter what time the mission ended, small groups would find the time to huddle together and talk about what happened. While a subtlety, the AAR name shifted to a Lessons Learned Briefing in some units. The name change brought a focus on how we would take those after-action items and apply them in future missions. While a raised awareness and opportunity to review what went right and wrong is healthy for organizations, truly taking those concepts and sharing how to apply them next time and improve from project to project takes this standard event to the next level.

Many contractors conduct a postmortem in a similar fashion. In some cases, the project team huddles and spends about an hour listening to the company resident deliver an out-briefing. Shields and defenses are up (especially during this era of reductions in force) as the field leaders do not have as much well-documented information on the project as the office does. Compare this to the company that reconciles project information (final costs, incidents, subcontractor scores, items with variance, etc.) and shares this information with all participants prior to the meeting, allowing the field to arrive better prepared to understand the project performance.

MISTAKES, WHAT MISTAKES?

Designed properly, lessons-learned meetings offer a chance for all project team members to discuss openly how the project performed, what actions they could have taken differently were they to build it again and how proactive

they were to the challenges they faced. The climate of the meeting sets the tone for attendees to share their mistakes and discuss their lessons learned. The ability to take these important insights and share them instantly with the rest of the company allows for immediate improvements across all of the company projects.

Some firms complete longer-duration projects. Waiting a year or more to review and share the great ideas learned means there are many missed opportunities on other company projects to integrate these ideas. Creating a concise method to capture challenges and how they were approached, and then sharing them with the other project teams on a regular basis, gives leaders the opportunity to develop and keep the momentum of a team that consistently improves.

Capturing the critical areas that were rocks in the road on projects also allows an opportunity to refine the pre-job planning process continuously. Thorough pre-planning ensures each project starts off on the right foot and that the staff can quickly adapt to the new requirements necessary for success.

CONTRACTORS AS LIBRARIANS

Effectively done, the thorough notes and full details of post job reviews (lessons learned briefs) should be saved in a common area for future reference. Project teams that start a similar project to that one can access the notes as they prepare for the new project. Automation and litigation avoidance have enabled methods such as online libraries, which are easily accessible and searchable to save time. Yet even well-organized file drawers can serve the same purpose of building the organization's knowledge database.

THE CULTURE OF A LEARNING ORGANIZATION

It takes great leaders to transform a company's culture and develop a learning organization. While tools, systems and strategies are critical to the success of any organization, effective contractors know people cannot be separated from this equation. Developing an organization that allows employees to take risks means managers and leaders welcome admission of mistakes, requests for new ideas and suggestions for better methods. These workplace characteristics are not common to most contractors who rely on bravado and dominant personalities. Creating a balance of empowered leaders while encouraging sharing of mistakes and ideas is often the largest challenge.

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Senior leaders can set the example and ask “how can we” type of questions during the meetings, giving junior managers opportunities to propose and try new methods. Bringing in external subject matter experts (vendors, architects, product manufacturers or subcontractors) to help improve skill sets in focused areas also demonstrates that as an organization there is always more to learn. Many companies have 40-year veterans and send a strong message that they have “been there, done that,” denying the value of continuous learning. Experience has organizational value only if shared. Truly experienced leaders understand the importance of continually seeking the next new improvement.

The pre-job planning and post-job review structures are vehicles to reinforce the importance of improving. It often starts with a shared understanding of where the company is headed, emphasizes the urgent need for change and involves the field managers. Changing ideas requires time and often leadership’s emphasis to fight a reactive culture. There is typically cultural resistance to taking time away from “getting it done” and putting out fires to meeting and conducting proactive sessions to prepare for future projects. Post-job review meetings are often skipped as the “milk is spilled” and there is little reason to spend more time on it.

In a larger sense, this same cultural resistance to operational change is, in effect, resistance to the strategic and directional change the company leaders agreed upon in the boardroom. Failure to turn the tide in how the business operates will result in a stumbling block to accomplish the goals set forth and undermine even the best strategic plan. The best practices discussed in this article allow field leadership to accelerate the benefits of the change while lowering the costs of entering a new market or building different types of projects. The construction industry will continue to be forced to change. Great contractors are able to adapt operationally and maximize profits while changing course toward their new strategy. ■

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CONDUCTING A LESSONS-LEARNED MEETING

The goal of a lessons-learned meeting is to identify problems that have happened on a project and suggest ways to avoid similar problems in the future. Most people think that lessons learned meetings occur at the end of a project, but in a perfect world, these meetings should be held at the beginning and incrementally throughout the project in order to act upon the feedback and make improvements as needed.

Benefits

The main challenge to conducting lessons-learned meetings is the lack of time and/or resources. Project teams are multifunctional, geographically distributed and constantly evolving. However, organizations pay a high price for repeating similar mistakes and cannot afford missed opportunities. Taking the time to conduct these meetings and act on the feedback obtained from them can save time and money in the end. Some of the benefits of lessons-learned meetings include:

- Mistakes on one project may be avoided on future projects
- Successes can be shared with other project teams in the company for increased productivity

- Allows the company to document project-specific issues for others to access
- Increases customer satisfaction
- Increases the likelihood that future projects will be on time and on budget

Sharing lessons learned in an easily accessible, central knowledge database helps ensure that future projects use corrective action early enough to avoid the mistakes that occurred on previous projects.

Lessons-Learned Checklist

Before the meeting

- Decide who will attend (this should include stakeholders from most areas of the project).
- Send out an agenda.
- Arrange for a facilitator to keep the meeting running smoothly.
- Distribute specific questions about the project before the meeting to allow all stakeholders time to prepare their responses.

Possible questions include:

- What was supposed to happen?
- What actually happened?
- What went well?
- Was the project on time?
- Was the schedule realistic?
- Was the schedule detailed enough?
- What were the obstacles in meeting the schedule?
- How were changes made late in the cycle?
- Was the project adequately staffed?
- Were the employees adequately trained?
- Were there any safety issues?
- Was the project on budget?
- Was the customer satisfied?
- Were there any rocks in the road?
- What would you do differently?
- How can specific problems be eliminated in the future?

During the meeting

- Set a positive tone — do not place blame!
- Discuss the responses to the questions distributed prior to the meeting.
- Analyze reasons for any obstacles/problems.
- Brainstorm solutions to obstacles/problems.
- Focus on successes as well as solutions.
- Discuss reasons and strategies that made the project successful.

After the meeting

- Distribute meeting minutes to all attendees.
- Disseminate lessons learned and other relevant documentation to all stakeholders via email and organizational newsletters/message boards and at organizational meetings.
- Refer to any recommendations in future project meetings.
- Create a single knowledge repository to save lessons learned in a central location that is accessible to all stakeholders.
- Continuously maintain up-to-date and accurate records
- Celebrate successes, record and publicize them.

One of the best ways to utilize lessons learned is to review previous findings at the beginning of a project. Simply holding a meeting at the very end of the project is of little value, especially if the information gleaned is stored away, never to be seen again. However, constantly referring back to mistakes made in the past and how those problems were solved can save time, money and heartache in the present and the future.

Utilizing Trade Association Educational Opportunities

If you or your company is not currently involved in a trade association, ask your fellow industry peers which ones they recommend and then contact the association to learn what educational opportunities it has to offer.

By Michelle Anysz

If you are involved in the construction industry, chances are you are a member of a local, state or national trade association. Whether you are a general contractor, a construction manager or a specialty trade contractor, there are plenty of educational opportunities for you to participate in a variety of targeted trade associations. The opportunity is there. Are you taking advantage?

Your trade association is a good resource for information on your industry-specific niche. You and your business can benefit by taking advantage of the educational opportunities that trade associations offer, including industry trends, laws, economics, management issues and industry-related training. Trade associations are constantly exploring developments for the industry they serve and many provide a wide variety of educational opportunities.

The Mechanical Contractors Association of Maryland (MCA-Maryland) is a state-based affiliate of the Mechanical Contractors Association of America (MCAA), a national trade association with more than 2,300 mechanical, plumbing and service companies located throughout the United States. MCAA's array of programs, courses and conferences helps members learn the best practices in construction management and improve their business and, of course, their bottom line.

“MCA-Maryland member companies and their employees have many opportunities for education and training opportunities throughout the year, including issue-specific seminars, workshops and quarterly meetings,” states Steven Lakin, MCA-Maryland executive vice president. “Our education features industry experts, elected government officials, and motivational and inspirational speakers.”

EDUCATING THROUGH SEMINARS

Seminars have been a traditional educational medium within trade associations. A stand-alone seminar allows speakers to capture the audience’s full attention. Associations are particular on who they bring in to speak to their membership. Educational directors and executive officers search for highly stimulating, talented speakers who can engage the audience in nontraditional ways.

“Speakers give seminars on various topics such as political updates, economic trends and changes, health care reform and commercial real estate forecasts,” states Cori Gerlitz, director of education and safety at Rocky Mountain Chapter, Associated Builders and Contractors.

Research has shown that a presentation that is prepared to address the expressed needs of the participants allows the audience to become motivated and participation will, in return, increase.

Gribbins Insulation from Evansville, Ind., is an active member of the Indiana Construction Association (ICA) Southwest and participates in its construction round tables, which are offered four times per year. For safety and product education, Gribbins Insulation senior staff will attend the annual conferences for the National Insulation Alliance (NIA), Mechanical Contractors Association of America (MCAA) and Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA).

“Many of our employees are involved in multiple construction-related trade associations, and all have found benefits from the education that is provided,” said Brian Willett, a 15-year employee of Gribbins Insulation, who serves as vice president of estimating and sales. “While I attend meetings at the Central States

Insulation Association (CSIA) for union-related concerns and to also ensure that our local area is on the same page as the surrounding states, our chief financial officer will attend Construction Financial Management Association (CFMA) seminars to bring back valuable information on taxes or any issues that can better our business.”

Audience participation at such events is a fundamental part of the seminar for the information to be well-received. Research has shown that a presentation that is prepared to address the expressed needs of the participants allows the audience

to become motivated and participation will, in return, increase. Data-backed education can be quite informative and stimulating. At a recent FMI seminar, a local construction index survey conducted for the previous quarter was sent out to all those who had registered for the seminar. This allowed the participants to join their peer group of contractors and serve as panelists for a special local construction index.

The survey, which was administered by FMI's Research Group, gathered the consensus opinion of nonresidential contractors in order to gauge confidence levels in construction business activity nationally, regionally and by selected construction markets. The participation in this particular seminar helped to gauge the local relative activity compared with contractors across the country. The results were compared with the FMI Nonresidential Construction Index survey results of industry panelists nationwide and were presented at this particular annual seminar.

At local construction-related trade associations, the topic of productivity is high on the priority list for members. There is nothing better than improving a company's productivity to increase its bottom line.

THE TOPIC IS KEY

At local construction-related trade associations, the topic of productivity is high on the priority list for members. There is nothing better than improving a company's productivity to increase its bottom line.

"When productivity is the topic, there is always a full room, no doubt about it," exclaims Willett. "I have learned the details of setting up several programs at my company. The benefits of this education are worth the investment of the trade association membership."

MAKING COURSES AND WORKSHOPS SUCCESSFUL

By offering education courses, trade associations accomplish their mission of supporting their members with information and management techniques that add value in helping contractors become more effective in managing their businesses.

"I still remember attending FMI's Improving Construction Productivity course in Las Vegas eight years ago," recalls Willett. "I have my notebook accessible in my office and I refer to it on a regular basis. By attending such courses on the topic of productivity, we have been able to put in place new policies and procedures at our company. No question about it, our productivity has improved."

Choosing relevant topics is important for association success in educational offerings. Steven Lakin explains how the process takes place for his trade association in Maryland. "Workshop topics vary based on input from the MCA-Maryland

Education Committee and expressions of interest from member companies. Some workshops are geared towards field personnel, such as estimating, project management and safety training. Other topics are oriented toward office personnel including leadership and the emerging generations, how to regain and expand market share, people management and negotiating.”

Trade associations are now offering remote events, such as webinars, to educate members in a large circumference area. There are many valuable reasons why webinars have increased in 2011.

With so many choices and a limited amount of funds, trade associations face challenging decisions when it comes to education. Education directors, such as Cori Gerlitz in Colorado, confront those decisions when it comes to the education of her members. “The subject matter and the cost of a workshop are the most important issues when making a decision regarding membership education. We are focused on bringing quality programs to our members as inexpensively as we can,” Gerlitz adds.

Andy Patron, FMI senior consultant and trainer, has some solid advice for trade associations. “If you only have a finite amount of training time and dollars, you should invest it in the most effective training method, a well produced interactive workshop. Effective workshops increase information retention and

better application when they get back to their workplace,” Patron continues. “Ultimately, students will get out of the workshop whatever they put into it. That being said, they will always get more out of an interactive experience because they are forced to be more involved and engaged.”

GOING VIRTUAL

Trade associations are now offering remote events, such as webinars, to educate members in a large circumference area. There are many valuable reasons why webinars have increased in 2011. Travel is not required for association members as they can join in from their office or home computer. Hence, there is more time for the member to be dedicated to the webinar and for questions and answers. Another benefit is that attendees can invite other members of their organization to observe the webinar, which reduces cost for registration. Because of the limited interaction of the experience, however, webinars should be limited to no more than 45 minutes or the attention of participants will likely wane.

Webinars are also a benefit to the trade association as well, as there is no meeting space, equipment to reserve or refreshments to be purchased and served. In many cases, the association can keep a copy of the webinar and post the presentation on its website, providing member value and increasing the number

of visitors to the association's website. The association can also distribute copies to its membership via disk.

Trade associations like MCA-Maryland will soon begin offering webinars to their membership and others, such as Associated General Contractors, San Diego Chapter, Inc. (AGCSD), have recently begun online training and have had good participation with popular curriculums and shorter time limits.

"Associated Builders and Contractors offers webinars," states Gerlitz. "Some of the topics have included compliance with OSHA's new cranes and derricks rule; complying with wage and fringe benefit requirements of the Davis-Bacon Act; proposed accounting changes; health care reform law updates and regulations; survival skills for the recession; Building Information Modeling (BIM) for contractors; and tapping into the stimulus money."

"FMI's experience with webinar development started with trade associations such as the Ceilings & Interior Systems Construction Association, the National Glass Association, the Pennsylvania Institute of Certified Public Accountants, the Associated Contractors of America and the American Institute of Architects," states Lee Smither, FMI managing director. "Webinars are easy, convenient and often free or at least partially subsidized by the trade association, and therefore the members receive a lot of information at a great value. The webinars allow the participant to grasp the basics of a concept or methodology."

Currently popular webinars include
Improving Business Development,
Positioning your Company in
the Right Markets and Improving
Project Profitability Through Lean
Construction Techniques.

The most common complaints of webinars concerns poor delivery, disorganized material and participant distractions and interruptions. Smither states, "Presenters have to keep the content relevant and moving at a brisk pace, and the visuals (slides, etc.) have to be clearly understandable as well as appealing."

Trade associations can use Web conferencing software, such as GoToWebinar® to conduct do-it-yourself webinars with up to 1,000 members. This enables the association to reach a larger audience, and it can be set up in minutes without IT support. Members can follow right along on their computers. GoToWebinar® also includes full-service registration, customized branding, automated email templates and pre-webinar practice sessions, a benefit to the trade association. To join the webinar is very simple. Members can either click a link to the event from a confirmation or reminder email or through their Outlook calendar.

OFFERING AN ABUNDANCE OF EDUCATION UNDER ONE ROOF

Annual conferences and conventions are an obvious opportunity for local and state trade associations to offer education to their members.

The ABC BizCon™ national convention, which is held annually in February, helps its members learn the fundamentals of the construction industry and to:

- Position their companies in the right market for future success
- Execute the right strategies to effectively grow their business
- Develop short- and long-term plans to adjust to changes in the industry
- Understand how new legislative changes will impact the way to contract for work
- Identify emerging industry trends to launch their company ahead of competitors

“This year ABC BizCon had several keynote speakers, including Rick Dutmer, FMI principal, who spoke on New Norms in the Construction Industry,” states Gerlitz. In addition to focusing on the economy and trends in the construction industry during BizCon, ABC members are honored through the National Excellence in Construction program.

“We also have EdCon and Expo — Education Convention and Expo in San Antonio, Texas, in April, which not only highlights education and training for the construction industry, but it is also when we hand out our national scholarships and professional craft trainers awards,” states Gerlitz. “The Rocky Mountain Chapter also has legislative conferences and attorneys’ conferences, and each region of ABC has its own regional conference annually, which several of our members attend.”

The MCCA national convention was held in March 2011. Following an open general session by Charlie Gibson, well-known television news journalist and anchor, several breakout sessions were held over the four-day agenda. Topics included Ethics in Construction, Using an Outside Board of Advisors, A Hands-on Approach to Project Planning in Today’s Economy, Making Sense of Contract Changes to Save Money, and Keys to Liquidity and Profitability.

Also held in March 2011 was the annual AGC of America national convention, along with the CONEXPO-CON/AGC tradeshow, an international exposition held every three years in Las Vegas, Nev. AGC’s annual convention is aimed toward everyone in the construction industry interested in improving bottom-line performance, elevating industry

standards and increasing personal proficiency and expertise. Showcasing the latest equipment, products, services and technologies, the 2011 CONEXPO-CON/AGG show featured more than 2,000 exhibitors, 140,000 visitors and a host of additional educational sessions and programs.

“As an individual chapter, we have spring and fall conferences that provide some specialized education programs to the membership,” states Glen Schaffer, Associated General Contractors of San Diego’s (AGCSD) director of marketing and education. The AGCSD Spring Conference will be held May 18–23, 2011, in Sonoma, Calif.

SPECIALIZED TRAINING AND EDUCATION

Most trade associations are continually researching the industry they serve to provide specialized education. These programs provide quality construction-related education programs to help support the industry.

The AGCSD offers education courses each year that focus on giving members and their staff important training. The AGCSD Education and Safety Training catalogs are produced twice a year to give a detailed look of upcoming classes for AGCSD, which offers 190 programs annually.

According to Schaffer, the association has a unique structure, offering the industry numerous educational opportunities that include: computer training (Microsoft, Primavera, Rivot); safety training; competent person safety training, OSHA 10 and 30 hour and CPR; continuing education; financial/accounting, leadership, Prevailing Wage — Davis Bacon Act workshops; blueprint reading, foreman/superintendent training; project management; specialty training; BIM; LEED; Lean; NAVFAC/ARMY Corps (CQM, EM385-1-1); and SWPPP. The AGCSD also sponsors the AGC Apprenticeship Trust that trains between 700 and 1,000 merit shop apprentices for seven different trades.

Associated Builders and Contractors, Inc. offers several types of contractor education and training to its membership. “We have several different safety training seminars all year long including OSHA 10-hour and OSHA 30-hour, confined space training, silica exposure training, EM-385 — the military health and safety manual for the Corps of Engineers, excavation, fall protection, scaffold, HAZWOPER and many others,” noted Gerlitz. “Our safety classes are also part of what we refer to as classes on demand. If we have a member that has the minimum required number of attendees, then we will build a class around its schedule, usually at its location or on a jobsite.”

Rocky Mountain Chapter, ABC also offers management education training, focusing on several areas in construction from the Corps of Engineers Construction Quality Management (CQM) class to human resource and legal issues such as

Most trade associations are continually researching the industry they serve to provide specialized education.

prevailing wage, reductions in workforce, succession planning, medical marijuana issues, storm water management and anything else that might become an issue for its members and their staffs.

Some trade associations have education on specialized practices and support within their industry. For example, the mechanical systems constructed and maintained by MCA-Maryland member companies affect the environment, and green building is becoming an increasingly preferred method of construction for owners and developers. MCA-Maryland is committed to promoting green building education/practices and designing/constructing energy-efficient mechanical systems. MCA-Maryland is a member of the U.S. Green Building Council, a nonprofit organization that certifies sustainable businesses, homes, hospitals, schools and neighborhoods.

Trade associations offer a variety of information, such as educational articles, market statistics and breaking news, through their websites, print and online publications and newsletters.

ADDITIONAL RESOURCES

Another way trade associations take advantage of keeping members informed educationally is through their communication. Trade associations offer a variety of information, such as educational articles, market statistics and breaking news, through their websites, print and online publications and newsletters.

AGCSD's *Monday Morning Quarterback*, is a weekly hot-off-the-press and to the point briefing on the important issues facing San Diego's construction industry. It is prepared by

Jim Ryan, AGCSD's executive vice president, and Brad Barnum, AGCSD's vice president of government relations. Some examples of breaking news covered in past newsletters include new workers' compensation notice requirements and the storm-water training crisis facing the California construction industry in 2011 that could result in possible fines of \$10,000 to \$37,500 per day per violation. Other important features of the newsletter include upcoming events and seminars, links to educational resources and a calendar of upcoming events and seminars.

MCA-Maryland offers a variety of white papers on its website. Some recent articles include *Measuring the Effectiveness of RFID on Mechanical Contracting Jobsites: A Practical Evaluation*, *Synopsis of MCERF RFID Technology Construction Site Evaluation*, and *The Value Chain: Adding Value to the Supply Chain*. In addition, MCA-Maryland has a reference library that houses the entire in-house catalog of MCAA-produced training CDs/videos that cover a wide range of topics. "MCA-Maryland members can view these CDs/videos in our offices or check them out for use at the office or home," states Lakin.

CONCLUSION

The opportunity to stay educated is certainly available within your trade association. Whether you are the chief executive officer of a company and you would like to learn how to prepare your company for future changes in the economy, or you are an on-site superintendent and need to learn the latest OSHA standards, acquaint yourself with what your trade association has to offer. If you or your company is not currently involved in a trade association, ask your fellow industry peers which ones they recommend, and then contact the association to learn what educational opportunities it has to offer. ■

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Utilizing Modular Construction as a Strategy

To be competitive in an environment where the playing field has been leveled will take a unique application of construction means and methods. Modular construction has the ability to provide this opportunity.

By Mike Kanaby

The construction market will remain competitive for the next several years, and owners will continue to take advantage of the market dynamics when funding is available. To differentiate in the sea of competition will take creative strategic thinking.

The strategy of an organization sets the short-term (three- to five-year) direction and aligns this direction with the vision and values of the organization. Companies that are successful at creating, executing and adjusting strategies to adapt to unforeseen changes typically remain profitable, even in down markets. Successful strategic planning involves a thorough analysis of the context in which the execution of the plan will take place. As context changes, so do the plans. A contextual evaluation includes analyzing internal strengths, weaknesses, external opportunities and threats; the competitive landscape; market forecasts; and the voice of the customer. With this data, the organization's needs identify where it can gain competitive advantages. Finding the area where your organization can gain competitive advantage is not always easy, but as the saying goes, "You cannot keep doing the same thing and expect different results."

What owners want today is the highest-quality product, in the fastest amount of time, for the lowest price. This is not much different from what owners have always wanted. Time is money and the quicker owners can occupy a space, the

quicker they start to realize a return on their investment. The differences between then and now are the tools available to the construction market. BIM, project management software, field management software and state-of-the-art equipment allow companies to make decisions much faster and with a higher expectation of the project delivery. Contractor strategy should center on these expectations and seek to gain a competitive advantage in meeting them. One such strategy often overlooked is modular construction.

When most people think of modular construction, they envision the double-wide trailer. When most contractors think of modular construction, they think of a jobsite trailer. While these are in fact modular construction, modular has evolved into a much more comprehensive building solution.

Modular construction can be segregated into two categories, permanent and temporary. Examples of temporary modular construction are jobsite trailers, portable classrooms and temporary living facilities. These fill a very important role in the construction industry, yet offer little to a traditional contractor in the sense

of a strategic advantage. Permanent modular construction, however, can offer a tremendous strategic advantage.

Permanent modular construction is an evolution from prefabrication that has been enabled greatly by the integration of three- and four-dimensional building design software.

Permanent modular construction is an evolution from prefabrication that has been enabled greatly by the integration of three- and four-dimensional building design software. Permanent modular structures include hotels, college dormitories, hospitals, assisted living facilities, office buildings and military structures. Just about any type of building can be built utilizing permanent modular construction.

These structures are fabricated in an off-site location, shipped to the project site and assembled. Field crews then tie the structures together and complete the project. Due to the strict controls in the factory setting, materials are used more efficiently, higher safety standards can be achieved,

and the schedule can be accelerated, all while providing a greener project. In a recent example, 178 patient bathrooms were built off-site, and many other large areas were prefabricated in the construction of Miami Valley Hospital in Dayton, Ohio. Other examples of permanent modular construction include the 60,000-square-foot Xstrata Nickel plant in Ontario; the 2010 Winter Olympics athletes' village in Whistler, British Columbia; 48,000 square feet at The Gables assisted living facility in Rutland, Vt.; 58,000 square feet at the Millennium Community School in Columbus, Ohio; and a 24-story high-rise in Wolverhampton, England.

It would seem that modular construction makes sense for a variety of practical reasons; however, according to the Modular Building Institute (MBI), modular

buildings only make up 1% of the construction market. With so much upside, why are more contractors not embracing modular as a strategy? The MBI recently put together a panel discussion to discuss the hurdles of bridging the gap between traditional contractors and modular manufacturers. In the discussion, Tom Hardiman, executive director of the MBI, talked about the stigma that projects either had to be built completely modular or completely site-built. “This is not the case,” said Mr. Hardiman and, “That’s not the answer going forward. There are projects or parts of projects that make sense to use a modular approach.” During the panel, Mr. Hardiman asked Eric Mucklow of the U.S. Army Corps of Engineers about the hurdles in transitioning to modular, and his response was, “Most of the A/E community is not familiar with modular construction.” From the contractor’s perspective, John Scott, president of Scott Long Construction, said he has been exploring modular as a strategic advantage but has had difficulty getting the modular manufacturer involved early enough and not having the right modular partners. “One of the biggest hurdles is that we just don’t know what capabilities modular construction has.”

With a variety of current projects available to prove the viability of modular, coupled with the demand by customers for tighter schedules, higher quality and greener construction, contractors should be looking at the utilization of modular construction as a strategic advantage. The National Institute of Standards and Technology (NIST) and the National Research Council (NRC) were commissioned to perform a study on construction productivity. The team released the report “Advancing the Competitiveness and Efficiency of the U.S. Construction Industry.” One of the five breakthrough initiatives proposed was “greater use of prefabrication, preassembly, modularization and off-site fabrication techniques and processes.” In FMI’s 4Q Nonresidential Construction Index (NRCI), an index based on the insight and experience of industry executives, panelists felt there would be an increase in the use of prefabrication and modular construction, driven by the use of BIM and the need for lower costs, higher quality and improved schedules.

To investigate a modular construction strategy in action, FMI looked at the Fort Sam Houston Medical Education Training Campus (METC). The METC project began in 2005 under the Base Realignment and Closure Act (BRAC), with the intention of relocating all military field medical training to Fort Sam Houston in San Antonio, Texas. Total construction spend for the METC program is approximately \$2 billion to create a campus-like atmosphere consisting of approximately 1.6 million square feet of education, training, recreation facilities and laboratories, and just more than 1 million square feet of dormitory space. The program is being administered by the Joint Program Management Office (JPMO) and is a collaboration among the U.S. Army Corps of Engineers, Air Force Center for Engineering and the Environment, and the U.S. Naval Facilities Engineering Command.

The METC project is the largest modular project in North America. The JPMO was tasked with building this project under a tight schedule and with a shortage of labor in the marketplace. Dr. Scott Griffin, facilities lead for the METC Transformation and Integration Office, said the strategy for construction was out-of-the box thinking. One opportunity to accelerate construction was with modular construction for more than 1 million square feet of dormitory space, and

this required the selection of a project team with expertise. Hensel Phelps, a general contractor and construction management firm based in Greeley, Colo., and Warrior Group, a permanent modular manufacturer and construction management firm, were just the team. This team had successfully used modular construction for dormitory projects at Fort Bliss, Texas, and Fort Carson, Colo., and was selected to provide the dormitories for the METC project. The METC dormitory project utilized a hybrid approach, where portions of the project were site-built and the individual units, or modules, were constructed off-site simultaneously. These modules were shipped to the site 80% to 90% complete, including windows, ceramic tile, oak vanities, solid surface countertops and hung doors. At the site, the modules are put in place and the site trade contractors perform all tie-ins. This hybrid modular approach allowed the team to begin the site work and foundation work at the same time as the units, greatly accelerating the schedule. The METC project has been a success and is scheduled to be completed in the summer of 2011.

Ed Zdon is the senior project manager for Pre-Construction/Special Projects at Warrior Group and has been working on the Fort Sam Houston project. FMI was able to talk with Mr. Zdon about the experience and gain some insight into utilizing modular construction as a strategy.

Kanaby: Tell us about the Fort Sam Houston project.

Zdon: The Fort Sam Houston project is part of the Base Realignment and Closure (BRAC) program. Fort Sam Houston has typically served as the U.S. Army's medical training facility and under BRAC will now serve as a medical training facility for all branches. The dormitories we are building are part of the Medical Education Training Campus (METC) facility, which will also include classrooms, a fitness center, HQ buildings, etc. The four buildings we are working on total 350,000 square feet per building. Each building contains 220,000 square feet of modular construction, with the remaining being site-built. When complete, we will have just more than 1 million square feet of construction built off-site.

Kanaby: Why was modular chosen for this project?

Zdon: Modular construction was chosen by the Army Corps of Engineers due to the schedule constraints. The base had soldiers coming in, and the Corps needed the facility ready for occupation. The units could be built simultaneously as the site work was being done, which greatly accelerated the schedule. In addition to the tight timeline, the buildings still had to meet all of the code requirements,

including the stringent Anti-Terrorism Force Protection Requirements (ATFPR), all while obtaining a minimum LEED Silver Certification.

Kanaby: What has contributed to the Fort Sam Houston METC dormitory project's success?

Zdon: There are a number of things. One is the experience of the teams involved. We have done similar projects at several other bases, such as Fort Bliss and Fort Carson. Another is that modular has to be a collaborative effort. For instance, the foundation is extremely critical to the process. Hensel Phelps realized this and ensured the highest quality on the foundations. The boxes sit on the foundation and set the stage for the whole building. If the foundation is off, it is much more difficult to fix it with finished modules. There was a lot of collaboration with the subcontractors on the project as well. The trade contractors performing the traditional portion of the project and making all of the tie-ins came to our plant where the units were being built. They worked with our trade contractors on ensuring the transitions were smooth and the locations and space were conducive for the on-site portion. The owner (U.S. Army Corps of Engineers) was able to come to the plant and see a finished module before all of them were created. This, in essence, gives the owner a full-scale mock-up. The entire project team collaborated on scheduling. We typically set eight boxes per day and roof them. A box consists of 6,500 square feet of 80%–90% complete structure. We were able to be flexible in setting the boxes, so if the trades ahead of us had a weather delay, we could slow down, and then when they were caught up, we could accelerate to 12 boxes a day to get back on schedule. This project had close to 100 rain days, and we still finished on schedule. There was a high level of collaboration with the design team. Overall, the project was successful because of the collaboration of all parties involved.

Kanaby: What are some of the lessons learned about the Warrior/Hensel Phelps relationship that might help other contractors who are looking at utilizing modular as a strategy?

Zdon: One key consideration that gets lost in the shuffle is the location of the trades. We build modules in a factory. Our framers, electricians and finishers are all in the plant. We have a set crew that is specialized in setting and rigging that sets the boxes on-site. They are not electricians or drywallers. Contractors are used to having the trades on-site and ours are not. This was a bit of a learning curve at first.

When you climb a mountain, you climb slowly and take breaks. It is important in the modular process to take your time on the way up. Once the plants are cut

When you climb a mountain, you climb slowly and take breaks. It is important in the modular process to take your time on the way up.

loose, it is difficult to change the design. You cannot move a door to the other side. The manufacturers order in bulk, so it is difficult to change fixtures or colors. Once production starts, the owners and designers need to put their pencils down. This was a bit of a struggle to change the mind-set and behaviors that traditional contractors and designers are used to.

Kanaby: Why would modularization be a good strategy for a traditional contractor?

Zdon: The modular process is immune from weather, at least the factory-built modules. The site-built portions of our projects are constantly under pressure of weather delays. Our portion [at Sam Houston] was not affected. The module construction ran ahead of the site-built portion and we wound up stockpiling the modules because we were so far ahead.

If your project has many little unique parts, modular is probably not a good strategy. If you have a lot of repeatability, like dorms or offices, modular makes sense. Although it may not reduce costs dramatically, it reduces time. An owner who utilizes a modular approach saves general conditions dramatically.

There is also the green aspect. Modular generates less waste and is more energy-efficient due to the construction methods.

Kanaby: Why do you think that the more traditional contractors do not pursue modular as a strategy?

Zdon: There is a feeling of losing control for the contractor. So much of the work is done off-site in an environment that is outside of the contractor's area of expertise. There is also a fear of change, and a fear of the unknown. To approach a project with modular for the first time, traditional site-built contractors would have to be able to step outside of their comfort zones and take an approach that they may not be the experts on yet.

Education is another hurdle. Most contractors and design teams do not know what the capabilities of modular construction are. Many modular construction manufacturers have the capabilities to assist in the design process, but the contractors and designers are not always aware that this help is available.

Kanaby: Most contractors are familiar with the concept of modular and traditional stick-built, but maybe not about the concept of hybrid construction.

Zdon: Most multistory buildings using modular construction are a hybrid of both modular and site-built. The idea is that the repetitive part of the project is built in a factory and the one-off work is done on-site. An example is at the Fort Sam Houston METC. Some of the classrooms and other buildings were site-built, but the dormitories, where there was a lot of repetition, utilized modular construction.

Kanaby: What are some suggestions for a traditional contractor thinking about a modular strategy?

Zdon: Work with an architect that is creative and open to new ideas — a progressive design firm. Most architects feel modular construction is boxy and lacks artistic flair, but that is not the case at all. There are many examples of very creative modular buildings.

Partner with an experienced modular manufacturer, particularly one that has experience working with traditional contractors.

Start the process early. It becomes much more difficult to utilize modular once plans are completely finished.

The conversation about modular should happen at the conceptual or early-design phase. Things can be adjusted slightly to accommodate modular after design, but is much easier if it is incorporated initially.

Kanaby: Currently, modular only makes up 1% of the construction market. What do you think will need to happen for modular construction to gain in market share?

Zdon: There needs to be more education for contractors about the possibilities, particularly in hospitality, education and health care. There needs to be more awareness by owners on the financial benefits of occupying a building faster.

There needs to be more collaboration. The design-build process dictates a more collaborative atmosphere and is helping to change the environment of construction to a more collaborative effort. As construction becomes more collaborative, the transition to a modular strategy will be much easier.

To be competitive in an environment where the playing field has been leveled will take a unique application of construction means and methods. Modular construction has the ability to provide this opportunity in many applications. It will take a new level of strategic thinking and collaboration than most firms have had to employ for a contractor to access this capability. This will take an open mind and a willingness to diverge from the way things have always been done. The construction companies that have already tackled this challenge are separating themselves from their counterparts and offering clients real value. ■

Links to MBI and METC

Link to MBI's podcast on modular construction:

www.modular.org/htmlPage.aspx?name=modular_podcasts

Link to MBI:

www.modular.org/

Link to the METC website:

www.metc.mil/news/metc.php

The Risk of a No-Risk Perspective

Those firms that understand their risk exposure and can build a culture that acknowledges and identifies it can not only minimize losses, but also maximize gains.

By Jay Bowman

The design and construction industry is inherently prone to elevated levels of risk. Yet many, if not most, of its firms have implemented formal means of assessing and managing their risk exposure. Enterprise Risk Management (ERM) provides the most complete response for design and construction services providers to minimize their “negative” risk exposures as well as to capitalize quickly on “positive” risks. In addition, when successfully implemented and ingrained into the culture of the organization, the odds of surviving whatever market is present increase exponentially.

The following conversation on the need and benefits of the ERM approach included Linda Conrad, director of Strategic Business Risk, Zurich Services Corporation; Scott Rasor, president of Construction, Zurich North America Construction; and Jay Bowman, a principal and senior member of FMI’s Research Services Group.

Bowman: From what we have all witnessed, there is still confusion among many people about what enterprise risk management, or ERM, is. Some think of

it as insurance. Others may think of it as contingency planning. What is your definition of ERM, in layman's terms?

Conrad: Essentially, ERM is not insurance. Insurance is perhaps a good solution to mitigate some of the risks that might come up through an enterprise risk management process. ERM is a proactive process or framework for planning, organizing and controlling the activities of an organization in order to minimize the negative risk impact and optimize the positive effects of risk on capital and earning. ERM is a way to address the main risks that could hinder a company from achieving its strategic objectives every year. It also helps provide that additional bit of risk-based information that can be put toward making decisions around how to spend money and make a business most resilient. So it is an added competitive advantage to have all of the risk information on the table beforehand. In a positive sense, ERM provides a wide-angle lens into what opportunities you should capitalize on going forward.

Bowman: ERM does not just deal with the negative. However, most people often view risk as something to avoid or as something bad for the company and do not look at it as a positive thing.

Conrad: Exactly. To your point that some people think of it as contingency planning or insurance, often they will say, "We have a crisis management plan, a health and safety program, and disaster recovery for our IT department." Those

are all valuable components of an ERM program but certainly not the only parts. There is additional risk information across the whole company that enterprise risk management will bring out, which will allow you to compare and contrast and make sure you are focusing corporate resources and effort into the largest risks at the company. You can certainly build on things like a crisis management plan as a good starting point, but that is not all there is. Once the ERM program has brought to the table many of the exposures that a company has, you then have to prioritize what mitigation you will take and how you are going to improve those risks. One

of those mitigations would certainly be insurance, in some cases, but there are also other activities you could take. Insurance works part and parcel of the solutions for some of the enterprise risk that a company faces.

Bowman: While most design and construction firms in the U.S. have risk management measures in place, even formal ones, few utilize ERM, particularly as Linda defined it. Scott, what do you believe has prevented its broader adoption?

ERM is a way to address the main risks that could hinder a company from achieving its strategic objectives every year.

Rasor: I think understanding risk across the enterprise is somewhat of a daunting task. If you had to build an ERM program from the ground up, it would be significant. However, Zurich and many third-party vendors have taken some of the work out of that by developing software and other programs to help identify and quantify the risks that the enterprise faces. I think that many construction firms have thought of ERM as a significant investment in terms of numbers of people, and in this economy, it is difficult to go from just good enough to actually strategically planning and understanding your risk. Therefore, firms have implemented part of our ERM program, like contractual analysis, materials management or other components. What they have missed is the aggregation of risk across the enterprise to try to discover not only what could threaten the livelihood of the firm, but also understand the strategic advantages they may have in their business, say from one division to another division.

When we look at construction firms, they are very good at identifying risk to a project. What they suffer from is that project mentality. Rather than taking the aggregation of risk within the project to a higher level and understanding what the firm is up against or what competitive advantages the firm has, every job is done on a project level and some of the learning, some of the risk and some of the opportunities are missed.

Bowman: That lack of aggregation of the risk across the firm — is it more because firms do not want to take the time to do it, they do not know how to do it, or there is a lack of understanding of the benefits of doing it?

Rasor: I think if they have not seen proof positive that there is a significant benefit from aggregating risks, there is less likelihood of it occurring. However, aggregating risks addresses both positive risks and negative risks — something that is often overlooked otherwise. Obviously, negative risks are easy to understand. The goal is to prevent losses and damages to the organization. However, I think many firms miss out on considering risks in the positive, such as “What risks to the firm do we not want to eliminate?” This is the risk/reward concept. On a division-by-division basis, this is often occurring unconsciously. If a firm can define these positive risks and the means of managing them and extrapolate it to the corporate level, the benefits increase exponentially. In addition, doing so

Obviously, negative risks are easy to understand. The goal is to prevent losses and damages to the organization. However, I think many firms miss out on considering risks in the positive, such as “What risks to the firm do we not want to eliminate?”

highlights the positive consequences of managing these risks appropriately so that there is incentive to “do something” rather than just “don’t do something.”

Bowman: We have already covered the most common misconception about risk management and ERM — that it is not insurance, although insurance may be a solution. Are there any other common misconceptions you see?

Conrad: I certainly think in this economy people feel they have to hunker down and do what is most efficient to try to survive. They are cutting costs at all corners, and ERM is often seen as unnecessary or “nice to have” rather than “need to have.” In fact, identifying risks that could keep you from being successful is really an essential business operation tool. So it is this misconception that ERM is just overhead or an administrative function rather than a critical tool that helps a company be more effective and more profitable. Understanding that — certainly from the CFO and the CEO perspective — is something that can help companies have better results and is certainly a message that needs to be heard.

Often I also see from the insurance industry that people are talking about total cost of risks. In fact, when you hear that term, what it usually means is total cost of risks you can insure, not total costs to the whole company. Of course, we know we have to take risks to have rewards; but in fact, insurance can generally only cover at most about 40% of the risks that a company faces. It obviously behooves the company to help manage the rest of that 60–80% of risks that are out there in an organized way, when they cost less to fix ahead of time than they do when you are in a crisis mode.

As we said earlier, risk is obviously necessary for positive growth. I like to think of it as the gas and the brakes, and ERM is a good way to help balance the gas and the brakes. It provides a good steering wheel to make sure that the enterprise is headed in the right direction, based on all of the analysis that you have, so you can make sure you are going forward on the right road.

Rasor: I think that’s a great point, Linda, and to make it real for design/engineering firms as well as contractors, one of the line items often that is brought down to crunchtime in project bid is the contingency that is necessary to be built into the costing to complete a project. The more the risk, the more the contingency. The more you understand the risk, the more accurate your contingency is. You may actually find that you win jobs more often by understanding and pricing the risks you build into your contingency correctly; and at the end of the day produce the anticipated margins that you had at the beginning of the bid process.

I think that is one of the biggest opportunities construction firms miss. They often come to me and say, “Hey Scott, we want our insurance product to insure our contingency. And I say, “Okay, why?” “Because we don’t understand what the risk is.” I’m paraphrasing what they are saying, but if they perfectly understood the risk, they would be highly confident in their contingency and not ask me to sell them insurance with their contingency, because they would rather accept and reap the benefits from managing that risk appropriately rather than lay it off on the insurance company. Anytime someone asks me for insurance for contingency, my first question is, “What’s wrong with your bid?” because somebody is nervous.

Bowman: Exactly. In my opinion, most design and construction firms have maximized the amount of strategic triage possible over the last several years. There is very little left to eliminate operationally without jeopardizing the very existence of the organization. As such, attention now is being turned to business development and estimating strategies. Estimating strategies in particular seems to be an area where ERM could prove most beneficial, am I correct?

Rasor: If you think about it, if you put a 3% contingency in a \$100M bid versus putting a 1% contingency in a \$100M bid, you may have just guaranteed not getting the work you wanted. Then you rate the competence level of the project team who needs to execute, because it has already thought through the various risks, whether they are insurable or not, so that it can move forward in a competent fashion and the C-suite team will be more confident in the anticipated outcomes.

Conrad: The other thing that is obviously important that you started to touch on is that the landscape of many businesses is changing so greatly now. Because of the economy, because of the changes and cuts firms have made, but also because people are taking on different types of works and different partnerships. Suddenly, what companies used to be confident in delivering, the whole world has changed around them, and the parameters are different. Therefore, if they have not reassessed what their risk landscape looks like, they are less likely to be successful operating in it. ERM allows them to do those types of assessments. As you said, many of the cuts were not strategic — they were survival. Part of that survival would be to understand the new world in which they operate in a better way.

Most design and construction firms have maximized the amount of strategic triage possible over the last several years. There is very little left to eliminate operationally without jeopardizing the very existence of the organization.

Bowman: I was intrigued by what you said about the insurance only insuring 20%–40% of the risk that a contractor can face. Where typically is the other 60% — where are those risks coming from?

Conrad: Generally, it is operational risks that you can insure — things that are easily quantified or more easily visualized — a building you can touch or feel, those kinds of things. But it's more of those financial risks that there is not necessarily an insurance solution for. Market, strategic risks like protecting your reputation — that is critical to every firm, having a good reputation. ERM allows you to have that early warning system — before risks come and damage your reputation, you are able to take steps to avoid or mitigate them.

Bowman: That's a good point. I think of how many firms have built up brand equity by becoming specialists or market leaders in a particular segment, geography or type of work. Now you see many of these same firms that, in response to the client and revenues and market opportunities, are either expanding into new segments that they really have not been in before or trying to go into new geographies, where they can dilute that brand equity and that reputation you're talking about quickly.

Conrad: That's right.

Rasor: That's a great point, Jay. If you think about what many large contracting and design firms are doing and the new landscape around project delivery — whether it's private-public partnerships, a lot of design-build, integrated project delivery — you're working as a team to deliver a project effectively. So the question would be, “Do you understand your landscape of risk well enough to ask your joint venture partners if they have any unidentified risks to the project?”

The whole practice of understanding your risks in the business leads you to ask intelligent questions around integrating into different businesses, taking on joint venture partners, doing work for new owners. Many of the questions that you ask yourself in a robust ERM program are very appropriate to ask an owner upon engagement with regard to what he or she is trying to achieve in the project.

The whole practice of understanding your risks in the business leads you to ask intelligent questions around integrating into different businesses, taking on joint venture partners, doing work for new owners.

Bowman: The disruption to the design and construction industry by this recession has been dramatic. Things are changing, whether it is the way projects are being delivered; whether it is some of the technologies that are now being incorporated, such as BIM or IPD or aspects of sustainable design and construction with LEED and everything else —

even the markets themselves. Many of our clients are now starting over with their strategic and business planning; and trying to determine what they are going to do and the right direction for the company. I think many assumptions that go into that are not based on any formal analysis of the markets or the risks that are inherent in those. How should ERM, if at all, be integrated into the entire strategic planning cycle?

Conrad: Actually, one of the big thrusts going on right now in enterprise risk management is the fact that this valuable information needs to be built into the strategic planning cycle. That would entail risk assessments of all business activity, and all proposed activity would happen before strategic planning and budgeting time, etc., and then updated continuously. This should inform the decision makers about strategy of what projects to take on, what areas they are going to be working in, what partnerships they are bound together in — all of those things should be analyzed before the decisions are made. Standard and Poor's (S&P) has said for publicly traded companies, there needs to be a demonstration of a risk-based culture, so that people are risk-aware and the risk is transparent — not a negative, but something that can be a positive on a company. So evidence of risk culture as well as a demonstrated link between risk and strategic decision making are the two critical points that S&P looks at in terms of determining whether your company is well-managed and how that impacts your cost of capital. That is important, and not just for public companies; but any stakeholder or surety provider, etc., would be really interested to see that you can demonstrate that there is board oversight of risk. That your C-suite is concerned and aware of what risks are faced and then that is driven down into the business and how it is managed. There is a direct tie to your cost of capital and funding, which is why it is so important to build this into your strategic planning.

Bowman: What is some of the tangible evidence they are looking for in that regard?

Conrad: For example, people will say they have a business continuity plan, but then you look and see that it has not been updated in five years and it's covered in dust. It is not just the fact that you have a risk policy, a chief risk officer or even some ERM software. We need to see that those are actively managed, there is some proof in the company of continuous improvement, and it is part of your regular business process to analyze and review risks and base your choices on that risk information.

People will say they have a business continuity plan, but then you look and see that it has not been updated in five years and it's covered in dust.

Bowman: Some of the intangible aspects I believe would be the risk-aware culture you described. I would interpret that as the culture not being contained into a single risk management department or risk management office, but something that would have to permeate the entire company. How have the most successful companies established that risk-aware culture?

Conrad: Certainly, nobody has a spare capacity of human resources around to say, “We’re going to name one person in every department to look after this.” But we do see that there is some kind of assignment or responsibility for risk in all business areas. Certainly, in the construction world, the project manager might be responsible for risk, but is there someone in HR who is looking after the risk of the company in terms of getting the right resources? A company needs to show that there are people

who, at least in part and on a regular basis, are responsible for bringing risks from other areas together through a corporately organized mechanism, so that the key risks of the company are pulled out of each area, made visible and brought to the top for prioritization. Then the senior management and the board can really put the money where the most risk is.

Rasor: When you do build it into the culture, your component cost of adding resources to implement an ERM program is really nominal. I think what intimidates some companies from venturing into putting some capital behind an ERM program is that, “This is a great idea, you sold me on it, but I can’t afford to hire anyone else. Times are tough and developing a whole new department to do this is out of the question.” But when you go back to the points articulated earlier, that’s not necessary. This can be done in the normal course of business. It takes the right amount of focus as well as commitment from the C-suite that this is important to do as part of our normal work.

Bowman: Going back to something Linda mentioned earlier, too often people look at risk managers as people who say, “No, no, no” to everything. I would think that one of the fears people have when you use a term like risk-aware culture is that you are creating a firm that is perhaps too conservative, which would be a misconception and a wrong attitude in this current business climate.

Conrad: That’s right. Think of it this way — if you were going to step off the curb and cross the street, you would want to know if a car was coming first, wouldn’t you? That does not mean that you aren’t going to cross the street — that just means that you are going to know the car is there and cross at the right time. We like to think of enterprise risk management as more of a consultant, a partner in the business, to help it achieve its objectives by helping avoid wasting time and money on things that could cause it to go off track. In that sense, it is absolutely

positive. We should be asked to the table as good consultants to help review the next project, the next strategic partnership and find out the things that could go wrong, but more importantly the things that could go right that we should focus on building out so that we maximize that chance for success.

Rasor: Too infrequently do we talk about times when things went right because we managed our risks appropriately. Instead, it is too easy to share examples of disastrous events that affected the entire organization or took a company down. They're just so much more visible. If we took the time to talk about the good outcomes and how risk management played a role in them, again, the necessity and benefit of such an approach would become evident.

Conrad: I can give you an example of an ERM in action from our own experience. Over the past year, Zurich's operational risk capital efficiency has improved through actually strengthening our ERM process (i.e., risk identification and strategic risk). That included an introduction of this operational risk framework that provides Zurich with tools to specifically identify, assess, manage and actually quantify our operational risks — what things that can go wrong in the business. Through this framework in our ERM process, we increase our ability to achieve efficiency and effectiveness. This allows us to better focus on optimizing our company resources and, in turn, decide what opportunities to fund.

Bowman: That's the primary benefit that I see — a true ERM program really allows a company to become market-agnostic. It does not matter if we are in a bull market or a bear market — there are opportunities to be seized upon in either. They may be different types of opportunities, but opportunities exist regardless.

Rasor: Overall, there is extraordinary benefit to your end customer. Think of it in the framework of presenting your credentials to an owner to do a project. Being able to articulate that you understand the risk of things that could go wrong or could go right, while delivering the project on time and within budget, would be an effective sales tool for any design, engineering or construction firm to be able to demonstrate it is confident. Owners using capital these days, in this economy, need to assure their investors and bankers that they can deliver an asset that is going to produce revenue, in a timely fashion, effectively. Working with a partner who can sit around the table

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and explain to an owner why they know, how they assess the risk, what opportunities exist — gives more confidence to the owner and probably the people who back the owner's investment.

Understanding the risks both ways — upstream and downstream — is extraordinarily important. Understanding the risk to your enterprise helps identify the things that affect the ability to deliver the project — such things as an owner that cannot achieve financing at important points in the project life cycle or subcontractors who have inadequate labor forces or capital.

Conrad: And the suppliers who might not be able to deliver on time.

Bowman: This is particularly true when considering owners of revenue-generating assets — to those owners, that's critical to them.

Rasor: Besides putting the project at risk because you cannot deliver the owners revenue-generating assets and losing that customer, think about the brand value risk to your enterprise. When your firm's name is in the article that this plant or facility will not be opening, who is going to hire you in the future? Those are risks to the organization that need to be identified by pre-qualifying owners, pre-qualifying subcontractors and understanding all of the risks that affect your ability to deliver the project.

Conrad: That's where ERM becomes a competitive advantage and a critical component for survival.

Bowman: How do most design and construction firms currently manage risk, if at all?

Rasor: Certainly, there are quite a few firms that effectively manage some risks to the enterprise — to be fair, a good amount of risk. Someone who has survived the economy we've had the last few years — I would think they'd not be categorized as subpar in managing risks related to the day-to-day operation of their companies and the traditional risks of construction.

I think that the traditional risks that the engineering, design and construction firms face are therefore managed fairly well. Things that affect the contract, risks that appropriately need to be placed for insurance purposes — these items are fairly well-managed in the community, and most firms have someone who is employed to worry about that. The risks that are underneath the surface that affect the entire enterprise need to be managed at an enterprise level. What I mean by that is there are risks that affect all the divisions and all the projects. When those risks are aggregated, it actually threatens the company's future. However, most firms

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accept and take that risk at the project level, meaning very few people who have ownership equity in the firm have actually understood they are taking a bet across the enterprise — perhaps on a technology or on material supply issue, all different things that affect the ability to deliver the project, and say, “You know what, that’s what our firm wants to do.” Instead, those risks all exist and no one’s aggregated or understood the impact on the entire firm. Many of our homebuilders saw this with the Chinese drywall issue. They bought much of their drywall in bulk, representing a significant cost savings. Not a bad deal, right? But what happens when that supply chain component is defective? Even if it gets by equipment and material sourcing scrutiny, what is your contingency plan to factor in repairs when you don’t even know where to put the drywall? On an individual neighborhood build-out situation, this might be curable; multiply that by many home subdivision sites, and you find out real fast that you now have an enterprise situation that was not anticipated. No one in the firm asked the question about the quality control for this large purchase.

Conrad: On the larger-project scale, obviously the same suppliers being shared across multiple projects, there is that multiplier effect if something goes wrong that often is not calculated at all. Just going in with eyes wide-open about the full impact of some issues that might exist in multiple places is important.

Bowman: Linda, you shared how ERM has benefited Zurich with some of the capital risk savings that you have been able to realize. Do you have any examples of contractors or engineering firms that have utilized and benefited from ERM?

Conrad: I can give you an example of an owner that is obviously responsible for building and then coordinating the use of those buildings afterwards. It has a very robust ERM program that allows it to figure out early what the issues might be to on-time and on-budget delivery for those projects. So, if there is something that may be threatening those, it is able to put contingency plans in place for relocating residents who would be in the building or for getting backup supplies or whatever is needed. All of that is identified through its ERM program. It is keeping its finger on the pulse of multiple projects within this company to see if there are repeat offenders or issues that are cropping up in similar places that could not only take one project down but also greatly affect the overall company.

Rasor: On the contractor side, we work with many different issues and many different firms. But in particular, we had one firm utilizing a new technology. It was

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responsible for the design and build, and value-engineered a critical component of the process that it was delivering. That's not bad or good — parts of projects are value-engineered every day. The firm made such a breakthrough in the value engineering of the process that its sales force was able to deliver an incredible

Firm are working for every edge they can gain and still generate the proper margins. All change affects the risk of a project and is related directly to the margin that you achieve.

amount of booked projects in an annual fiscal year that really changed the landscape in terms of revenue of the firm. The firm did not allow enough time to hot test the process, and the technology failed. The company was lucky because it was able to identify where its problem was, but it almost made a big gaffe in that it got part of this right by having this ERM program, in that it was able to identify the process for hot testing the work. What it missed was the aggregation of all this work in process. So while it cost it some money to get back on track, if it was not able to identify where everything was at, the firm would not be around anymore. This is what Linda might term as an “almost-there ERM program.” The firm really tried to do ERM, but it didn't do it across the enterprise. Having one division

do it well but not sharing that across the enterprise and then understanding the aggregation of the exposure was almost a huge mistake. The firm has since corrected that, and now has committees get involved with significant C-suite people, including the CEO, who sign off on new technology. When leaders across the enterprise see the due diligence put around it, they can make the decisions for the firm and exploit the new opportunity — or call for more testing.

Bowman: How do you see ERM as a source of competitive advantage for design and construction firms?

Conrad: I think some of the things we touched on earlier about impacting your stakeholder value and your cost of capital with your investors and your bankers — that's definitely a competitive advantage. The ability to demonstrate a good program that gives confidence to investors and bankers that can give you access to funds at a good rate, that is a competitive advantage for sure. Scott mentioned also the ability to show this in front of a partner when you are in a bid situation that would give it confidence to work with you as a partner.

Rasor: With the advent of technology and better processes, there is the opportunity to develop a competitive advantage. It is apparent a new technology, a new material, better sourcing, logistics, leaning out the organization have benefits. People think about that and talk about that all of the time. I think the enterprise risk is one level down from the visible eye that people do not see the opportunity

in their daily work. Firms are working for every edge they can gain and still generate the proper margins. All change affects the risk of a project and is related directly to the margin that you achieve. This may determine whether you expand or whether you integrate forwards or backwards into other businesses. With all of the merger and acquisition activity that has gone on over the past few years, I wonder how in that process an enterprise risk management approach to understanding the business you're acquiring or merging and the new partners processes will affect your business two or three years down the road after the merger.

Bowman: ERM, in my opinion, is not a C-level contained activity. Rather, I assume that it is something that is highly dependent on field participation. Is this an accurate assumption? How do the most successful firms drive ERM efforts at the field level?

Conrad: If I were a CEO or CFO, I would love to have this process going on in my company, because frankly I would think that I would be able to do my job better. I would be more likely to hit the targets that I set and to be successful, and that is my fiduciary responsibility. Having the CEO, CFO and the board recognize that ERM is a critical business tool that is of value to the operation of the company is important to the success of ERM. This occurs through giving support, having people with part-time roles look after risks, communicating in toolbox talks about the risk needs and setting that risk culture high. But then from the bottom up, that's really where the risk is — in the daily operations of the business. This is where the day-to-day operational part is as opposed to the strategic that's at the C-suite. So it is important that there's an up-and-down-the-ladder approach to risk — that the tone is at the top and the strategic things are looked at but then the operational risks are bubbled up to senior management so that they are aware. It is often an operational issue that becomes a strategic issue that takes a company down. BP is a good example of that. There was a safety issue that actually ended up leading to this big strategic damage to its shareholder price and ultimately to its reputation.

Bowman: That's a great example.

Rasor: That is a good example. This is no different from how to build a safety culture. Your safety and health program starts with toolbox talks about fall protection, clean work sites, material organization and things like that — it needs to be baked into the culture. You can hire as many safety personnel as you want, but they still cannot watch every worker, every day. It needs to be built into the culture of the organization. A quick example is that an average toolbox talk might involve fall protection today, because the execution of this part of the job

has some work from heights. The toolbox talk would involve lanyards, harnesses and competent personnel to watch the edges — and that’s a great toolbox talk, that’s a safe culture. We really love customers who do that. However, out near the street may be a critical component, like the copper that is being delivered to the project — is anyone talking about how to protect it, how to handle it? Do we trust it all to the vendor who is delivering it? That conversation is often bifurcated and delegated to someone else who may or may not have the competencies to identify that this is in a part of the city where people strip copper components. And the risk there is not so much to the insurable risk of theft or vandalism — but can you get that critical component in time to deliver the project? And what if you can’t? So when this type of thought process is built through the organization like a good safety culture, it’s everyone’s job.

Bowman: We are at a stage now where no company, at least no reputable company, would say, “We are not a safe contractor,” or “We don’t have a safety plan in place,” or “We do not adhere to a certain safety protocols.” It is almost as if the risk management would follow the same thing. At some point, it would be ludicrous for a firm to say, “We don’t manage our risks or keep a focus on those things that potentially risk not only the project but the enterprise in general.”

Rasor: It is one of those conversations about the connection from the top of the organization to the bottom of the organization. It is easy for the C-suite folks to understand the damage to the brand and the ability to organize and achieve good work. Does the person who is out there with a wrench in his hand understand the same thing and is aware enough to boil up the issue and make it visible? Is there a feedback mechanism in the culture of the organization that says, “Yeah, we’re making sure we don’t fall off buildings, because we’re using our harnesses and lanyards and we’re being real safe. But did you notice the trucks coming down the alley with the critical component?” Well, you’re an ironworker, but you notice those things. So how does the organization support that dialogue throughout the culture to where it can be boiled up to a level and the feedback would be complete to say, “Hey, maybe there’s a different way to do this,” and mitigate some of the risks? Or make sure that the risk was actually turned into a competitive advantage by having the critical components delivered at exactly the right time so that it does not have risk of being damaged? Or some sort of

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thought process that actually creates a more efficient project delivery and adds margin to the projects.

Bowman: For a design or construction firm that is interested in incorporating ERM into its business, what do you recommend? Where can people go to get more information?

Conrad: They could go to our website, which is www.ZurichERM.com for information.

Rasor: Right, certainly we work with many customers who request this of us and we do have services to provide. But there are lots of consultants, software, people in the marketplace that can assist with this. It really does not matter what materials you assemble to do this; if you do not have the dedication of the firm to achieve the outcomes, it doesn't matter how much software you buy. Zurich and other third-party vendors have material to assist you, so it is not as if you are starting it from scratch. Certainly, we can always be available to discuss with customers how to build this out and share how some of our folks have been successful in implementing the program.

It really takes the commitment of the organization to build it into its culture, and it needs to be exercised every day. It's fairly obvious whether a firm is just giving lip service or if it really lives it.

In our opinion, risk exposures will become more elevated rather than less. This does not imply that the resulting success of the organization is diminished. Rather, those firms that understand their risk exposure and can build a culture that acknowledges and identifies it can not only minimize losses, but also maximize gains. ■

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Phantom Capital: How Real is Your Balance Sheet?

The old adage that contractors should be measured by credit, character and capacity is quite appropriate.

By Hugh Rice and Tim Sznawajs

A review of the published financial statements for construction companies provides the reader with a comforting sense of accuracy and precision. The results of millions, and sometimes billions, of dollars worth of construction projects are summarized neatly to the closest dollar, audited by a CPA with a deep understanding of the industry and presented in a few concise pages of figures.

Banks, surety companies, project owners and construction company executives and shareholders rely on these financial records when evaluating the financial stability and creditworthiness of the underlying construction business measured in these statements. Return on capital, financial ratios, working capital and tangible equity can be measured and used as the basis for credit decisions. But how accurately do the financial statements genuinely reflect the performance and position of the firm? Are the indicated working capital and equity of the company real or imaginary? Is part of the capital of the business only a “phantom”?

Every industry participant reading this article understands, in general, the eccentricities of the construction process and the unique aspects of construction accounting. While all accounting includes the use of judgment and estimates,

construction accounting, through the application of percentage of completion calculations to work in process, gives rise to large and crucial estimates being included in the financial statements. Detailed understanding of these estimates and how they affect the resulting balance sheet and income statement is essential. The ability to detect phantom capital in a contractor's financial statements is a chief factor in the quality of decisions made by all parties concerned.

Several elements of the application of percentage of completion accounting should cause concern for readers who are interested in seeking to quantify potential elements of phantom capital in a contractor's financial statement:

- The very nature of the determination of revenue and profit for a given period is by definition an estimate. How does anyone really know at what percentage of completion is a large, complicated project at any point in time? The only points at which these calculations are absolutely correct are before the job starts (0% complete) and after it is complete (100% complete). At all other stages, percentage of completion is a judgment call.
- Since the actual percentage of completion is inherently unknown, accounting standards dictate a default to the total actual costs incurred (or invoiced) compared to the estimated total costs at completion of the project. Notice the use of the word "estimate" again. While both numerator and denominator are imprecise, the denominator (total estimated costs to completion) is, by its very nature, an educated guess. If either the numerator or denominator is wrong, then the revenue reported is inaccurate, profits are inaccurate, and several balance sheet accounts are inaccurate. Note that these inaccuracies are not a major issue, unless the estimates noted above are significantly different from the actual results.
- When the estimated costs to complete a project are difficult to determine with accuracy, the margin on that project is equally uncertain. Even if the actual percentage of completion was perfectly knowable at all times, the forecast gross margin in the project is simply a forecast and the actual gross margin is never known for certain until the job is completed, billed and collected and all warranty periods have expired. In other words, even an accurate percentage of completion will not overcome a bad estimate of costs, which is then used to forecast margin.
- Smaller, short-term projects are not so much of a concern, since actual outcomes are known quickly and the result on a single job does not usually

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affect the total company results dramatically. However, in a recent example involving a \$100 million construction firm, a project with a \$15 million contract value ultimately cost \$35 million to complete with no change orders or successful claims. While an extreme example, it illustrates the point — as projects get larger and of longer duration, the risk in the ultimate profit of the job increases and, therefore, the bigger the impact on the reported income statement and balance sheet accounts.

- The contractual relationship between the builder and the project owner, coupled with the complexity of the construction process, gives rise to disputes over who should absorb the cost of specific job items. These disputes often result in change orders, claims for and against, back charges, arbitration and litigation. In such cases, what was already an uncertain situation becomes even more speculative. Further, the inclusion of these unknowns into a company's financial statements frequently relies upon the estimate of an outside attorney or the opinions of management — both of which are subject to significant use of judgment.

Having said all of this, it should be noted that percentage of completion is still the best method of accounting for managing a construction firm. It forces continual re-evaluation of the status of projects and provides an early warning system, enabling mid-job corrections to improve projected outcomes.

While the above scenarios and examples are useful to understand the inherent issues with percentage of completion estimates, let us examine specific balance sheet accounts for instances of phantom capital. First, the assets:

Underbillings. This account is set up to recognize costs and estimated earnings on projects in excess of related billings. If work is done and costs incurred and no invoice is sent to the owner, then those costs are reflected as underbillings — an estimated number itself because of the estimated margin on the projects. However, the bigger concern is that incurred costs go into this account even if they are never billed to the owner. This could happen due to unsigned change orders, scope changes or losses incurred on projects. Without a detailed Work-in-Process (WIP) schedule and knowledge of the projects themselves, underbillings may indicate an asset value that is not true, which produces an overstatement of working capital and equity. Since

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the underbilling account includes estimated earnings, the risk is that the cost to complete is not accurate and therefore the estimated earnings are also inaccurate. Projects showing budgeted margin up until almost the end of the projects and then “profit fade” as the job closes out, cause the reported profit, retained earnings and underbilling numbers to all be inaccurate.

Unsigned Change Orders. Frequently, contractors will voluntarily or involuntarily conduct work on a project that has not been specifically authorized by the owner. The question from a financial standpoint is whether to recognize any revenue from that work since it has not been approved in advance by the owner. Often, these change orders get approved and paid and there is no issue. However, there are cases where the owner says the work performed was in the scope of the contract, and no change order is justified. That dispute may be resolved in the contractor’s favor, or it may just be margin erosion or a loss since no billing can be generated or paid. Knowing the specifics of how change orders are treated is essential to understanding the financial statements, yet audited statements do not present this information in any obvious fashion.

Booked Claims. Some contractors have a conservative approach to accounting for claims. They book the costs and assume no revenue until the claim is resolved. Other firms are aggressive and will recognize revenue and costs at the same level and reflect no margin. Still others may reflect profit on the work based on their belief of a positive outcome, or because they want to avoid reporting a loss for the period. This variety and flexibility in reporting is not visible to the casual reader of the financials. The ultimate disposition of the claim can have a dramatic effect on reported profits, equity and working capital.

Unresolved Litigation. Contractors operate in a litigious industry within a litigious society. Litigation and other dispute resolution processes, whether on contractual issues or other matters, have a significant effect on the financial performance and status of a construction firm. Even those who understand the merits of each dispute cannot be certain of the outcome, given the judgment involved and the use of outside dispute resolution procedures. That uncertainty leads to more estimates in the financial reporting. Understanding how these issues are reflected in the financial statements is integral to knowing the actual company status.

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Accounts Receivable. In most industries, the only issue concerning the accuracy of receivables is their collectibility. While this is also an issue for the construction industry, especially given current economic conditions, there are other issues unique to the industry that make truly understanding the detail behind the numbers important in order to detect phantom capital. Sending an invoice gives rise to a receivable. The question is whether the receivable is an undisputed claim for payment, a billing against an unsigned change order or an amount as part of a claim against the owner. Back charges and mid-contract changes in scope may also result in disputed billings, yet reflected without notation in the accounts receivable balances. Finally, there is the horse trading that occurs at the end of a job that results in not getting paid the entire amount of the final invoice. All of these circumstances make the actual receivable amount subject to question and a defacto estimate. In the private sector, collection of legitimate receivables can be an issue if the owner or the financing source simply refuses or is unable to pay. Lien laws offer the contractor protection unless the constructed facility is not worth enough to settle all of the outstanding claims. Sometimes the account receivable will get converted to a note receivable from the owner in the hope that someday payment may come. At best, in such cases the value of the actual booked amount of the receivable is not knowable with precision.

Loans to Related Parties. It is not uncommon to find such an account in the asset section of the balance sheet. Within many privately held companies, the immediate questions that arise should be: “Is the loan really collectible?” “What is the collateral?” “What is the fair market value of the loan?” Sometimes the uncertainty of these types of assets can be so great that credit providers will assume they are uncollectible. Much more than a typical company financial statement is required to assess properly the quality of such assets.

Value of Fixed Assets. Accounting convention holds that fixed assets are recorded and depreciated at their original cost. Given the market fluctuations of actual values and the arbitrary nature of depreciation schedules, the fair market value of fixed assets is rarely the same as the “book value.” While the accounting is technically correct, it is useful to know whether the value of those assets on the books of the company are actually worth one-third or three times the stated net book value. In such instances, the number that really matters is what the assets could be sold for in an orderly liquidation.

Goodwill. More and more frequently, contractors create goodwill on their financial statements through an acquisition of another firm at a price, which is in excess of the tangible assets of the acquired company. While there are prescribed methods performed by the financial statement preparer to annually review the accuracy of these goodwill estimates (“impairment tests”) which are built into the

financial review process, it is a judgment call as to whether the goodwill remains on the books, is written down or written off. One thing that is certain is that the goodwill is not a tangible asset and has no intrinsic value. Knowing the details of the impairment tests would be necessary to evaluate the asset.

Capitalized Items. There is judgment applied in most construction firms on which purchased items to capitalize (i.e., put on the balance sheet) versus expense (i.e., include in the income statement). Over a longer period, it does not matter, but current period financial performance can be affected depending on how aggressive the firm is in one direction or the other.

The liabilities side of the balance sheet also deserves scrutiny for potential instances of phantom capital:

Overbillings. Actual billings in excess of incurred costs and estimated earnings is the accounting treatment for invoices sent to owners and receivables recorded for work that has not yet been performed. Generally, overbilling is a good thing, if it results in receivables that are turned into cash in a timely fashion. Overbillings are subject to estimates in the same fashion as underbillings. If a contractor has substantial net overbillings, but does not have substantial cash balances, that condition should raise additional questions. While underbillings can be an indicator of unreported losses, overbilling is sometimes reflective of unreported profits. The reason for such a state could be conservatism on the part of the contractor, an attempt to minimize current taxes or an effort to “manage” earnings from one period to the next. While these are all rationales that are discouraged by the accounting rules, there is significant variability from one firm to the next. For example, a \$300 million general contractor whose audit was conducted by a large, highly reputable CPA firm used a percentage of completion method of accounting where revenue was determined by the actual billing to the owner, and the overbilling was reflected in an accrued cost in order to state profits more

accurately. Clearly, if the company is net overbilled, this will result in a higher profit, equity and working capital than if the firm were using the more generally accepted cost-to-cost method at a given point in time. Once again, knowing the details behind the numbers is paramount to being able to interpret the reported financial statements.

Failed Subcontractor. Like an owner who cannot or will not pay a billing can affect the accuracy of the receivables, a subcontractor who cannot deliver what was promised under its contract can affect the estimated costs to complete, profit reported and accounts payable items. Given the

current economic conditions, subcontractor failures are becoming more common. Evaluating a general contractor's financial statement requires some knowledge of the financial status of its subcontractors, which may vary from project to project.

Contingency and Reserves. Due to the uncertainty and the risk associated with the construction process, most contractors include contingencies in their cost estimates to cover unknowns. Those contingencies may represent future profits, be absorbed by cost overruns or shared with the owner. How these contingencies are treated and when they are released will affect the percentage of completion calculation and profit recognition in a given period. Some firms will include balance sheet reserves to cover these and other unknowns; others do not.

Contingent Liabilities. By definition, contingent liabilities are not explicitly reported on the financial statement. They are unknown as to amount, timing or realization. However, prudent readers should attempt to discern the existence of any specific issues that may affect the contractor's financial position. Of course, every firm is exposed to possible risks in the normal course of business and those risks will be factored into any credit analysis in a general sense. However, there may also be specific issues related to a firm. Some have already been covered previously, such as actual or impending litigation, claims status and potential margin erosion. Others could be items such as inadequate liability insurance coverage or unfunded buy-sell obligations. Each situation will be unique, and there can be significant risks.

Simply reading a contractor's audited financials and the footnotes is not adequate to understand the real financial performance and status of the firm. Basic ratio analyses, conducted on the basis of reported numbers taken at face value, could lead to an erroneous conclusion about a construction firm's financial health. Here are a few questions to ask about a contractor's financial statements in order to gain more insight into the potential existence of phantom capital and, ultimately, the correlation of the numbers to reality:

- What is the specific method of determining percentage of completion for a given project?
- At what point in the project does profit recognition begin?
- What is the company's history of actual versus estimated/budgeted profit?
- How does the profit margin reported at 90 percent complete compare with the final margin?

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- How often are estimated costs to complete updated and how thorough is that re-estimate?
- What is the company's experience with warranty and callback on completed projects?
- What is the detail behind the underbilling number? How much of it is on T&M jobs? How much on projects that are 80% or more complete? How much of it is due to unsigned change orders, claims, back charges or other unresolved issues?
- What is the detail and total amount of revenue and profit recognition related to unsigned change orders? Which unsigned change orders are in dispute or subject to scope issues?
- What portion of the revenue, profit, receivables and underbillings/overbillings is related to claims against the owner? What is the detail on those projects? Are other claims recognized in other accounts such as notes receivables or other assets?
- What are the details behind all items in dispute involving actual or threatened litigation, arbitration or mediation?
- What are the details behind any receivables or billed retainage outstanding for more than 60 days? What is the status of the funding for all projects larger than a certain size for private owners? Which receivables are related to unsigned change orders, booked claims or back charges? What is the history of the firm not receiving full payment for the final pay request on a project? Are there any liens filed on projects? Are there any notes receivables related to old project receivables?
- Are there any loans to related parties? What are the details? Is there adequate collateral?
- What is the real fair market value of the fixed assets and other assets? Is there a ready market for the assets?
- What is the detail behind any goodwill on the books? What are the results of the impairment tests?
- What is the company policy relative to capitalizing versus expensing costs related to fixed assets?
- How much of the overbilling is related to projects 90 percent complete or more? How much of the overbilling is on jobs that are substantially complete? How much of the overbilling has actually been collected and converted to cash at any given time? Where is that cash?
- Are there any subcontractors that are at risk of default? Are there any subcontractors who have billed and been paid a higher percentage of the contract amount than has actually been performed? Have any subcontractors filed liens

against existing projects? Are any subcontractors getting special payment treatment, such as weekly or twice monthly? Special payment terms may indicate weak subcontractors or skillful negotiators.

- What are the status and historical performance of project contingencies and reserves in projects or on the balance sheet?
- What is the portion of profit, equity and working capital that is directly attributed to projects in progress = more than 12 months?
- What identifiable contingent liabilities exist, and what is the risk of them occurring?

Getting good answers to these questions (and others) will certainly give you a better understanding of the financial statements being reviewed. However, if this article has demonstrated anything,

it is that knowing the “real” numbers is inherently impossible.

Consequently, view the financial status of any construction firm conservatively. Whether you are a credit provider, an acquirer of construction firms or selecting subcontractors or general contractors for a project, relying solely on historical financial statements to provide evidence of financial stability can be a dangerous game.

The old adage that contractors should be measured by credit, character and capacity is quite appropriate. This article focuses on the “credit” piece only. The experience, record of accomplishment and trustworthiness of the firm obviously have a huge affect on the evaluation of any construction company. However, understanding the underlying approximations, which compose the stated “real” financial position of the firm, is quite helpful in anticipating future performance. ■

Relying solely on historical financial statements to provide evidence of financial stability can be a dangerous game.

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Corporate Governance

MY PERSPECTIVE SERIES:
REPRESENTING THE AUTHOR'S
PERSONAL PERSPECTIVE

Firms are clearly able to adapt to changing conditions successfully when a responsible board is doing its job.

by Louis L. Marines

Enron. Liz Claiborne. Lehman Brothers. AIG. BP. The roster of firms whose boards have failed them, or even driven the companies under their care out of business, grows every year. While the titanic crashes of major financial, product and oil companies may seem distant from the world of a typical engineering, architecture or construction firm, the A/E/C industry is just as vulnerable as other businesses to the flaws that plague boards of directors around the world.

I look around the industry and see firms whose board seats are more of an honorarium than a working directorship, some whose board chairperson is also the firm's CEO, and yet others whose boards may fulfill one role successfully (overseeing risk or leadership development) but lag in other important areas.

In this series of articles in the 2011 *FMI Quarterly*, I will address the responsibilities of boards of directors, what the relationship with the CEO should be, and how a board can best ensure success for the firm.

MARKETPLACE ALIGNMENT

Boards must take oversight of the firm for both the short and the long term.

The primary responsibility of the board is the immediate and continued health of the firm, including financial performance, operations, risk, strategy and CEO oversight and compensation. Failing to align the firm with changing marketplaces and their needs and opportunities is the reason firms fail. Too many boards blame the market or excuse the CEO, when it is their job to ensure that the firm is led by an entrepreneur who can adapt the company to thrive versus riding it down the hill to oblivion — or selling/liquidating before there is nothing left but smoking embers. If the board cannot get performance, risk, strategy, succession and oversight right, nothing else matters. In 2009 Paul Zofnass, president of The Environmental Financial Consulting Group Inc., reported at the annual FIDIC Conference that out of 31 of the top design firms in the U.S., 52% (16 firms) had gone bankrupt or been sold; 23 of the 31 firms, or 74%, had undergone a major ownership change.¹ How many other firms have closed their doors in the past three years? Their boards have failed them.

IS THE BOARD ITSELF A RISK?

When the board looks at the near future, it must consider what risks are present and how the firm should handle them. If the firm cannot handle those risks, the board must evaluate what competencies or processes are needed to manage those risks. Among these risks are the board's own composition, relationship to the CEO and behavior. As reported in the *Harvard Business School Alumni Bulletin* of June 2010, when Lehman Brothers failed in September 2008, only one of the 10 nonexecutive directors had any recent banking experience.² The other nine were from unrelated fields, and according to Bryan Burrough and John Helyar, authors of *Barbarians at the Gate (1990)*, had been handpicked by CEO Richard Fuld on

the basis that these individuals would not challenge him. Among the board members were a retired rear admiral who had previously headed the Girl Scouts; a retired art auction company executive; and 83-year-old actress Dina Merrill, who filled a seat on the board for 18 years, and as a member of the compensation committee, rubber-stamped Fuld's \$484 million salary, stock options and bonuses from 2000 to 2007. Ms. Merrill, in spite of being the daughter of E.F. Hutton and Marjorie Merriweather Post, was unqualified to understand the complexities of credit default swaps or the dangers they posed.³

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OPERATIONS AND STRATEGY

A responsible board must consider how and whether the firm's operations match up with its strategy and needs.

The board must ensure that the company's talent and capabilities are aligned to the client needs that the strategy says it will address and are constantly being developed, so the response to clients remains current and advantageous. The staff must be engaged with the firm and rewarded. Project delivery mechanisms must be aligned with the strategy; consultants and subconsultants must be chosen to leverage the strategy; and pricing must be consistent with the strategy. The board must see that internal feedback systems are in place to ensure consistency in operations, practice and learning; provide quality assurance; and leverage good ideas.

The firm's strategy for the future should be a primary concern of the board and under constant evaluation:

Is the firm drifting away from the stated strategy? Is the strategy still serving the organization? Do changing conditions require a shift to one of the

alternate or emergency strategies? A company should have a primary strategy for gaining work now and contingent strategies that prepare it to respond rapidly when conditions inevitably change. Every firm should develop an emergency strategy for operating during disasters and unexpected problems.

For many years, the strategic focus of Liz Claiborne clothing was to provide high-quality, well-designed women's clothing through high-end department stores. The firm was an astonishing success, with Ms. Claiborne becoming the third female CEO to reach the Fortune 500. With this success, the board led the company into aggressive expansion, opening a chain of company stores and adding a large number of other lines. In 1989 Claiborne and her husband, Art Ortenberg, retired from active management of the firm and the decline began. The board's chairman chose the strategies of making acquisitions and producing cheaper clothing, but his strategy backfired. The brand became confused and diluted while profits and share prices dropped steadily for the next decade, yet the board continued to pursue the failed strategy, compensating themselves and CEO William L. McComb as though they were successful. In August 2010 the firm reached a new nadir, announcing that the Liz Claiborne brand would be turned over to J.C. Penney for the next decade. By choosing a poor strategy and following it relentlessly into a downward spiral, the once-proud brand has been ruined.

THE BOARD AND THE CEO

The Liz Claiborne board also failed to oust a CEO whose leadership has been disastrous. McComb and the board members are highly compensated in spite of their failures, yet CEO oversight and compensation are key responsibilities of every board of directors. Many boards have felt the wrath of both stockholders and the public over the obscenely high compensation received by CEOs, who were complicit in creating the current worldwide financial crisis. Holding the

The firm's strategy for the future should be a primary concern of the board and under constant evaluation.

CEO accountable for his or her leadership and managing that CEO's compensation accordingly should be a particular focus for every firm's board.

The board also has key long-term responsibilities: CEO succession, watching the horizon for future direction, leadership development, corporate social responsibility and board succession.

It is a major responsibility of every CEO to identify and prepare a future successor. The board of directors should take a key role in helping the CEO with

this task. Larger firms may want to prepare several people with different talents, so that when the time comes, a CEO with the abilities best-suited for that time will be available.

During an economic crisis, a more management-oriented CEO might be chosen, while during an economic boom, an entrepreneurial individual would be the best choice.

Another major responsibility of the contemporary board of directors is in leading the social responsibility efforts of the organization.

SCANNING THE HORIZON

The board is responsible for the firm's current strategy and for doing what the CEO may not have time for: watching the horizon for changes that indicate future direction and determining possible long-term strategies. Understanding how trends will play out over time is both

challenging and time-consuming, but with technology, economics, demographics, politics, environmental and other factors changing at an ever-more-rapid pace, this watchtower function of the board and CEO must be constant. New tools for creating more robust and flexible strategies and contingencies are now available for engineering and architecture firms, such as the scenario planning process and the A/E Future Scenarios developed in 2009 by FMI. Scenarios offer a look at how current trends could play out in alternative futures, and help firms determine how those futures will affect the marketplace and what strategies will be most effective under different circumstances.

LEADING SOCIAL RESPONSIBILITY

Another major responsibility of the contemporary board of directors is in leading the social responsibility efforts of the organization. Taking action to contribute directly to the firm's community, to address environmental concerns and to exhibit leadership in both areas is no longer optional. Corporate social responsibility is now a fundamental need for every firm, and done well, it reaps many benefits that include:

- Building a stronger community creates a more robust market for the firm's services.

- Giving employees opportunities to take direct community action builds engagement and loyalty.
- Incorporating sustainable materials, energy efficiency and smart building features into every project has positive long-term effects for coming generations and can give clients immediate financial value.
- Aggressively advocating for sustainability and environmental responsibility positions the firm in a leadership role. Aggressive advocacy may also include refusing to take on projects that violate the firm's green/sustainability principles.

In October 2010, *Architectural Record* published a feature article about New Songdo City in South Korea, an entirely new city being “built from scratch” near the Incheon International Airport, incorporating U.S. LEED design standards, which are new to Korea. However, the article reports that the city lacks “a viable downtown where people do business” and that “the townscape seems under-inhabited.” In a letter to the editor published in the December 2010 issue, Diane Elliott Gayer, AIA, says of the project that after visiting the site, “Creating 1,500 acres out of tidal flats and estuaries is anything but green, especially when developed solely on spec... Instead of the question raised in the article of ‘How will it finish?’ I ask, ‘How did it start?’ and ‘What is our responsibility as architects, urbanists and planners to the health of our planet beyond the adoption of declarations and certifications?’”⁴ The board should take responsibility for guiding the firm in manifesting social responsibility and be aware of the risks involved in saying one thing but doing another.

WHEN BOARDS DO THINGS RIGHT

Psomas Engineers has a sustainability declaration on its website and in anticipation of marketplace changes, the firm diversified into solar and renewable energies. That strategy has paid off during the economic downturn.

The firm also provides complete design/finance/build/operate packages to clients, which are highly attractive to cash-starved municipalities. Psomas is now in a strong position to take advantage of the recovery, as it gets under way. “We are strategically planning to be in the best position possible when the economy turns the corner,” said Jacob Lipa, the firm’s president. “As our country begins to emerge from this recession, new initiatives like our entry into the energy market will ensure Psomas is well-positioned for strong growth in the years to come.”⁵

Firms are clearly able to adapt to changing conditions successfully when a

The board should take responsibility for guiding the firm in manifesting social responsibility and be aware of the risks involved in saying one thing but doing a nother.

responsible board is doing its job. SERA Architects, Inc. of Portland, Ore., is achieving success by combining urban revitalization with sustainable design. The combination proves highly attractive to urban centers in need of infill, reuse and redevelopment. The firm has created a white space that distinguishes it from competitors. SERA's sensitivity to historical preservation and context, and its application of the belief that green design means much more than just a certification, help attract clients who care deeply about these concerns.

Altoon + Porter recognizes that while architecture has universal

principles that apply to every project, every community has a specificity, local culture and unique psychology. The firm is known for projects that adapt and enhance urban streetscapes, and the firm's design professionals know that any work they do must be flexible to accommodate future changes as a building's use changes over time. By placing the commitment to local context, culture and community at the center of the firm's philosophy — and embodying this commitment in the practice and its project — A+P has become highly successful in the international marketplace and is widely renowned for the humanist appeal of its mixed-use and retail projects. [See Sidebar]

COMING UP IN THIS SERIES

Going forward in this series of articles, I will outline what boards can and should do right, explore best practices of highly successful boards and discuss how the boards of architecture and engineering firms can achieve such success. ■

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HOW ALTOON + PORTER EXPRESSES CORE VALUES IN ALL OF ITS WORK

Ron Altoon, one of the founders and a partner of Altoon + Porter, explains how the firm established and maintains commitment to embodying the partners' core values in all of the firm's work:

"The culture of the firm, our core values which affect everything we do, comes out of a covenant that all partners embraced from the outset. Three partners formed Altoon + Porter in 1984, one with a background in management, one in tectonics and one in design. Noting that Vitruvius, writing in the Ten Books on Architecture in the first century, spoke of three essential aspects of architecture — firmness, commodity and delight — we adapted (perhaps paraphrased) these irreducible elements as we structured our practice and the interdependency between us. Each partner would have "last word" authority over one of these aspects applied throughout the practice, no matter who the partner in charge of a specific project may be.

Firmness became the business aspects of our practice: firm corporate (and later partnership) structure, contracts, legal, accounting, leasehold, tax, human resources and banking as well as all project management responsibilities such as scheduling, manpower, workload, profitability, etc.

Commodity became the technical aspects of all projects: engineering consultants, code research, fire/life safety compliance, construction documents and construction administration.

Delight became all aspects of design: master planning, urban design, architectural design, interior architecture and design consultants; outreach, such as marketing, business development, public relations; and education, profession, industry and community engagement.

We fashioned a matrix-management system, whereby the client was at the top, and on one side of the angled matrix was a partner-in-charge of a particular project with responsibilities to assure fulfillment of the client's mandate. The other side of the matrix had partners-in-charge of these three designated aspects of the practice, responsible to the partnership. They intersect on every project, making each of the partners accountable for his aspect of another partner's project. It works because the partners of both sides of the matrix are the same people. In my case, someone else is responsible to ensure that one of my projects has proper contracts in force, tax laws are being observed, etc., and that the project is properly staffed and budgeted. He holds our feet to the financial fire. Another partner assures that all applicable codes are respected during the design process, that the documents reflect the design intent, etc. If it violates good practice, he trumps the design to assure quality and compliance. I keep the responsibility for the design and communications aspects of the project. If the project were another partner's, I would assume last word responsibility for the design of his project. My design, not his, would prevail, as I set the design approach of the practice.

In short, we formed the firm as one architect in three bodies, with remarkable perspective vision. As we have grown, we have maintained this practice model and culture. We have filled in additional partners between the original three, dividing responsibilities such as practice management from project management, and technical documents from construction administration. However, the biochemical approach prevails.

Does it work? Since 1984, we have constructed projects valued at \$11B (in yesterday's dollars), with no legal judgments against us. We have worked in 42 foreign countries, with a relatively small staff. We are not smarter than anyone else, no more experience. But, this culture of collaboration, ceding to others what is defined within their domain, has served us well. Ego absent, so to speak."

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