AUTOBAHN
CONSULTANTS

BOOK
CLUB

PRESENTS

CREATING VALUE

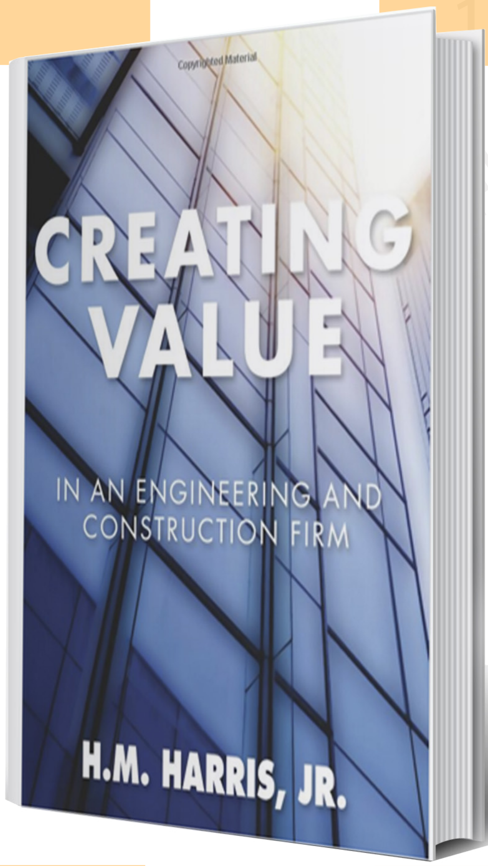
IN AN ENGINEERING AND CONSTRUCTION FIRM

BY H.M. HARRIS JR.

Creating Value In An Engineering And Construction Firm is a must read for built world professionals. So much of the content resonated with me that I had to share it with you. I hope you'll take the time to read this copy, listen on Audible, or download to your favorite device. If you're not a "reader" you can share this copy with another team member and read my notes below. I've tried to extract my favorite nuggets from the book along with a few comments.

Best,

Jonathan Slain



PS-

CHAPTER 1: What is Value and Why Does It Matter?

PAGE 5

"The list of actions that drive an organization for value is the same list of actions needed to run a good business."

JS — In other words, any effort to prepare a business for a future sale will make that business stronger regardless of whether it gets sold or not!

CHAPTER 2: Bringing in Business

PAGE 7

"The vast majority of people who populate the industry (especially firm founders) have wonderful entrepreneurial instincts. These traits serve firms well during the early years of startup and growth. However, these instincts have a tendency to be opportunistic and reactive–the advantage these traits confer during startup wanes over time as the firm's needs change. Many firm leaders struggle with the classic concepts of business strategy, which require making choices and accepting trade-offs. ***Staying with the entrepreneurial war cry "hit, move and be all things to all people" is the death knell of business strategy.*** *The first order of business in value creation is not to fall into this trap."*

JS — Sound familiar?

PAGE 13

"Research shows that clients tend to lean toward working with an incumbent firm. This preference gives project managers, and others who are in regular contact with existing clients, a strong opportunity to win the second job."

PAGE 19

"There are too many contractors that wait until an RFP comes out to start chasing the project. When the RFP hits the street the cone of silence comes down, and it is difficult to get much additional information from the customer. ***Much of the information needed to truly differentiate the firm from competitors needs to be uncovered and developed before the RFP hits the streets.*** *That is the key strategy that the top companies are using to create positioning based on elements of value and not allowing the conversation to degenerate to a "how low will you go" type of pricing strategy."*

PAGE 28

"Contractors cannot afford to have a 1-in-15 hit rate, or even a 1-in-7 hit rate. Engineers can't put the up front time into demonstrating their capabilities and only win 1 out of 6 opportunities. It's just too expensive."

CHAPTER 3: What is Value and Why Does It Matter?

PAGE 30

". . . the economy is emerging from the Great Recession, and the war for talent is on once again.

. . . competition to attract people into firms will be far worse for the industry in the next few years than it was in the 1990s and early 2000s.

The right [employee turnover] benchmark is approximately 5 to 10% annually."

PAGES 37-38

"The best firms have both good management and good leadership.

Firms with strong management but weak leadership tend to become staid and bureaucratic.

. . . firms with strong leadership but weak management tend to get out of control. These are the firms that grow too quickly, an obvious and often terminal problem in this industry. The firms that get the balance right – well-led and responsive, but also buttoned down on procedure and controls – will be those that excel over time."

JS

Firms in the built world industry that are led by good managers seem to have a big advantage. If you are familiar with the DiSC behavioral profile, think "C" profiles as great managers for construction firms. If you are a Culture Index aficionado, you are looking for lots of "D" orientation.

CHAPTER 4: Organizational Processess

PAGE 48

"Discovering talent and determining a good fit with the organization are critical to bringing in the right people. ***Some firms are simply better at this than others because of effective systems, tools and processes.*** *This is a competitive advantage in a people business."*

PAGE 50

"People don't leave companies; they leave their bosses."

PAGE 51

"Simply being good at one's work does not make someone a qualified manager without some preparation for stepping into that role."

PAGE 52

"Deferred compensation can encourage people to stay. ***The strategy is to build up a bank of reserves, so that later if a competitor tries to poach one of your key people, it will have to compete with more than just this year's salary and incentives.*** *The competitor will be up against a banked-up reserve of deferred compensation, making it difficult for a person to give up and leave."*

PAGE 55

"Instead of a commission-based, project-based incentive, create individual goals that serve the firm's needs. For a money-losing project, suppose the firm is going to lose $3 million on it, so putting the best superintendent possible in charge is necessary. Structure the incentive so that it drives that superintendent for success: "If you lose only $1 million instead of $3 million, we will call that success, and you will be rewarded for reducing the firm's loss."

PAGES 55-56

"Goals should be relative and binary, by which I mean they are clearly defined; and whether a goal is achieved or not is a yes or no answer . . .

. . . Goals should be customized to the individual and then made simple: yes or no."

JS Goals being relative and binary is important whether talking about compensation, rocks, or anything you really want to accomplish!

PAGE 59

" . . . Many companies, especially midsize and smaller ones have a black box [bonus] plan. There is often a paternalistic figure at the helm of the company, and he seems to work out the plan on his own.

75% of construction companies have discretionary plans, so this is the majority practice. . . At the end of the year, either at Christmas time or after the financial reports come in, the owners arbitrarily decide what bonuses people will get."

JS Old school approaches to compensation will leave you exposed to your competitors poaching your millennial talent. Evolve or go extinct!

PAGE 62

"Deferred compensation programs usually fall into either stock-based or non stock-based programs, depending on the objective of the company. Some firms want to facilitate ownership transfer and management succession. If they have real stock and that is their objective, the plan is usually a complex, stock-based transfer plan. If the owners are a private family with no interest in sharing ownership and the objective is to retain key people, they are more likely to have cash-based or phantom stock types of plans."

JS Stock v. Phantom Stock plans explained very simply and eloquently in this chapter.

PAGE 65

"Our advice [on bonuses] is to continue what the firm does for the hourly people and give them some kind of bonus or a recognition-style payout that's not tied to goals and measures, but has some relationship to the profit of the company . . . The difference is we don't go through the effort of the goal-setting with [hourly employees] because of the time constraints."

AUTOBAHN CONSULTANTS

PAGE 69

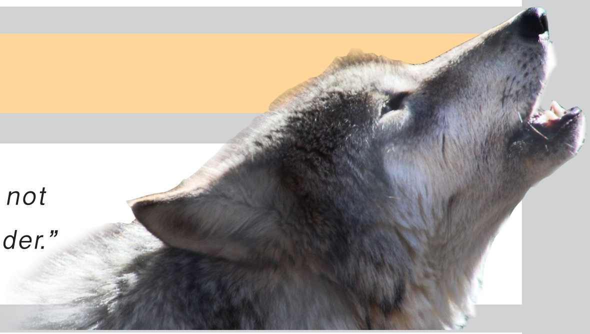
If there is one single element of risk mitigation that is the most important from an outside perspective, it is this: avoiding single-person dependency in the business. Many good businesses in this industry have seemed unable to get past the personality of the founder(s). It is a shame—even painful—to watch someone create his or her life's work but then fail to make the changes needed to sustain it or to create a valuable, enduring legacy. The companies that fail the test here generally struggle to build a real management team at the top; they do not create bench strength in the organization. These companies often do little or no succession planning. ***The presumption is that the outsized personality at the top is not only omniscient, but also immortal."***

JS This idea applies not only to construction but every industry that I've encountered!

PAGE 70

"Whenever [the founder(s)] have tried to let go, someone has failed them and probably cost them money, so they live in fear and with the conviction that no one can perform like they can, and no one cares as much as they do. The inability to move past this keeps them on the treadmill and hurts them with the end game."

CHAPTER 5: Internal Processess



PAGE 74

"The skills required to be a great project manager are not the same as those required to be a great business leader."

PAGE 77

"For the senior practicing project managers, one issue is staying motivated. They are energized by large, complex projects and the challenges these present. Because of their abilities and experience, the firm wants to see them become the trainers and developers of the next group of PMs. But often they are so busy generating revenue for the firm or managing huge projects that this mentoring aspect of their work doesn't get their full attention. Some of these highly successful senior PMs are the lone wolves of the firm who probably struggle with delegation.

. . . We can look at DiSC personality assessment profiles . . . and the personality proclivities of individuals and see various patterns emerge. The highly detail-minded folks can get bogged down if given multiple projects; they can manage one huge project effectively, but we do see that issue of people with difficulty delegating becoming overwhelmed on occasion. The PMs who can manage three or four projects at once are also the ones who will probably move up in the organization because they are able to delegate work, such as submittal processing, paperwork processing and day-to-day field management."

JS Don't commit a major sin of leadership: if you try to tame a lone wolf and get them to be a collaborative leader/manager/trainer, you have a very high chance of failing and losing a top performer to boot.

PAGE 80

"[Divisions in a construction business are] like the offense and defense on a football team, but, in some cases, it's as if the offense and defense hate one another. You see that dysfunction on the football field…"

PAGE 80

*" 'Would McDonald's allow everyone in the company to come up with their own way of making a hamburger?' **If you go to a McDonald's in North Carolina and one in California, the product would be relatively the same, in large part because the processes are defined.** There are strong business reasons to have these consistent procedures. Consistent accountability is probably the biggest, yet many companies don't have*

PAGE 87

*"Most people in the industry do understand profit and loss on a singular level or project level. But without training, it is less likely that they see where their project fits with the other 12 projects that are ongoing in their service division. What's the margin contribution for all those projects? What's the overhead rate? Many contractors keep that information somewhat sheltered at a senior management level. Outside that management level, without the information, there is no sense of how to move the needle because they're looking at it from just a small data point. "This is my project. We're making 10%. We'll make 12% if we can get buyout on the electrical contractor." **Most staff members are probably better at understanding the project level, but do not have the training to be financially smart about how to grow a business in a healthy fashion."***

JS Read "The Great Game of Business" by Jack Stack for more on creating a transparent financial culture.

PAGES 99-100

"One of the big differences I've seen between self-performing and people who are subbing out most of their work is, from a risk standpoint, the labor-intensive jobs can just absolutely get hammered; they can go infinitely bad.

Typical general contractors or construction managers, if they've never been in the business of self-performing, don't understand what type of support structure and overhead is needed to run that kind of firm . . . Managing subcontracts is much different than managing labor."

PAGE 102

" . . . contractors are willing to spend real dollars on field issues, but they really resist making an additional investment in project management . . "

CHAPTER 6: Financial Controls

PAGE 105

"Many small and midsize professional service [firms] labor under the delusional notion that the owners should drain the firms dry via owner distributions every year, and that "book value does not matter."

JS Can your balance sheet support your growth or tide you over during a rainy day or rainy year?

PAGE 106

". . . Going into a short-term [credit] line is often a signal that a company is pushing too much volume out of a thin capital base."

PAGE 107

". . . Firms should have a cash flow forecast that looks out three months to a year forward and is updated monthly."

PAGES 107-108

"Being net overbilled is good because it shows the firm operating on other people's money, but it also has to be booked as a liability and has a resultant negative impact on working capital. There are no absolute standards here, ***but large balances of over- or underbillings should be probed for a solid understanding of reality.*** *Projects that show significant underbillings past the 50% complete stage are prime targets for future profit write-downs. Old receivables, unsigned change orders, stated current profits from future unresolved claims, and failure to properly state warranty reserves or contingent liabilities are other common warning areas."*

PAGE 108

"Financial statements are perishable. The longer it takes to produce them, the older and less valuable they become."

PAGE 110

". . . companies can be profitable but still go broke, . . .

. . . all sins are forgivable except for one: running out of cash . . . "

RECESSION.COM™

PAGE 112

"One reason companies did well during [The Great Recession] was that they were well-capitalized as the economy entered the recessionary period.

Most firms took quick action to cut back on staffing, thereby minimizing their operating losses, making it at least possible to break even, or for some, generate a modest profit during the toughest years of the recession. This quick action limited damage to the balance sheets. The recession was still tough and the firms contracted in size–many firms emerged from the recession smaller than they were when it began–but they were able to either break even or make some profit, so their balance sheets came through intact."

PAGE 114

"I've been seeking out financial talent through a website called www.ConstructionExecutive.com."

PAGE 114

". . . contractors do three things: They get work, do work and keep score."

PAGE 115

"No one today would dig a trench with shovels when the backhoe is available. Technology and software systems are similar."

PAGES 116-117

"You can't buy exercise equipment, put it in your living room and expect it to, all of a sudden, work miracles---you've got to use it. Technology is the same way."

PAGE 118

". . . there is no system out there that has everything built in for the contractor . . . The perfect software nirvana that companies often hope to find, where everything is integrated . . .

PAGE 125

What contractors try and do, and I certainly encourage this, is to take a look at the number of people who will be impacted by that technology and whether or not their job is improved. Then it is easier to say, "We have five estimators, and we're going to spend $50,000, so that's $10,000 per estimator. If we spread that out over five years, which is usually the payback period, we're looking at $2,000 per estimator per year." Viewed in this way, it wouldn't take much improvement to make that payback work financially."

CHAPTER 7: Firm Continuity

PAGE 128

"Long-term planning for succession and firm longevity is often neglected in this industry."

PAGE 129

"Firms also need a short-term contingency plan for continuing were something to happen to the existing owners.

One exit strategy available to some owners is to sell the firm to an outside party. Most firms in the industry are not externally saleable."

PAGE 132

"A good transition takes a good plan, and a good plan needs at least a 10-year horizon to be implemented."

AUTOBAHN CONSULTANTS

PAGES 134-135

"The stereotypical ownership transition plan is an owner who says, "Look, I want to get out of here in six years, and I think I've got the right guy to help get me out. I want to wind down my involvement in the business while he does that." The irony is that, for most of our clients, they will have to recommit to the business and spend more time involved in it simply due to the whole issue of training, mentoring and getting that next generation of leaders ready. They can't just walk in one day and say, "Hey, I'm ready to go. I'm going to wind down and start heading to the beach." If anything, it's the opposite; and since that's unexpected, it causes plenty of frustration."

PAGE 136

"For the valuation of a construction company selling to a third-party buyer, we always use the notion of three to five times historical EBIT (earnings before interest and tax), sometimes EBITDA (earnings before interest, tax, depreciation and amortization)."

PAGE 137

For a typical internal transaction, the vast majority of the deals that we do are book value with the notion being that the owners will incrementally sell some small portions of stock every year, continue to reap S corporation or LLC distributions, and earn bonuses and salaries over the period of time that they are winding down their interest. When considering a third-party sale versus a typical internal transaction, ***the value of the internal transaction is often going to be much, much higher, but is going to require additional years of high involvement. With the third-party sale, the owner can walk away and it's done."***

PAGE 141

". . . As long as someone is personally indemnified to the bank or the bonding company, that person needs to retain control.

. . . [we] advise owners to keep veto power over a handful of specific things. . . "

JS For more practical application of the veto: email me at Jonathan@AutobahnConsultants.com for an interactive worksheet that I call the "Delegation of Authority Matrix"

PAGE 143

"businesses that happen to have a family are destined for success, whereas I think the opposite is true for families that happen to have a business.

create a family employment policy, basically telling your high school kids that if you want to go into the family business, these are the things you will need to do. This can include graduation from high school, getting a college degree and working somewhere else for three years, for example at a supplier, a subcontractor or another contractor in a different geography."

PAGE 146

"When owners go down the path of selling to a third party, it's usually something exogenous that causes them to sell. They're not interested in the business anymore. They don't want to sign personal indemnities. They don't have a successor, or their time frame is short. They've taken it as far as they can. They want to do something else. Those are reasons that people sell an E&C firm, not to maximize value. That's an important distinction for people to keep in mind and a set of important questions to ask well in advance of transitioning the business."

CHAPTER 8: Risk Management

PAGE 150

". . . risk management tends to lag in sophistication relative to other aspects of a firm's business management."

PAGES 152-153

". . . The term de-risking is often a foreign term for people, but the notion is that the more a company can stabilize its earnings stream, the more valuable that earnings stream becomes over time.

. . . But this is an industry that has so much inherent risk that many companies have become numb to it."

CHAPTER 9: Industry Trends and Innovation

PAGE 164

"Contracting firms consciously attempting to grow large are usually courting disaster, yet size and critical mass are becoming a competitive issue in a way we have never quite seen before."

PAGE 165

"Innovation is the most likely road away from commodity fee pressure, a trend that has plagued engineering and construction for many years. This innovation may be about the business model and the arrangement of value chain activities, it may offer unique services and value propositions, or it may focus on niche market presence and expertise.

. . . Failure to see the trends and changes afoot and to respond to them in terms of how business is done will be a death knell for many organizations, *especially for those that find themselves caught in the middle."*

PAGE 166

"Good transitions do not happen by accident, and competent leaders do not suddenly appear from the bowels of any organization."

PAGE 166

*"Does a **modern-day building** really require a program manager, an agent CM, a general contractor who subcontracts all the work, an owner's representative, a bridging consultant, an architect and an array of separate engineering firms?*

*Although it remains to be seen, **one has to wonder if there will still be general contractors 20 years from now.** The current business model is questionable in terms of sustainability, and other service providers are continually picking off the management processes."*

PAGE 168

"The marketplace is in search of a better way to deliver and will probably reward those who can innovate accordingly."

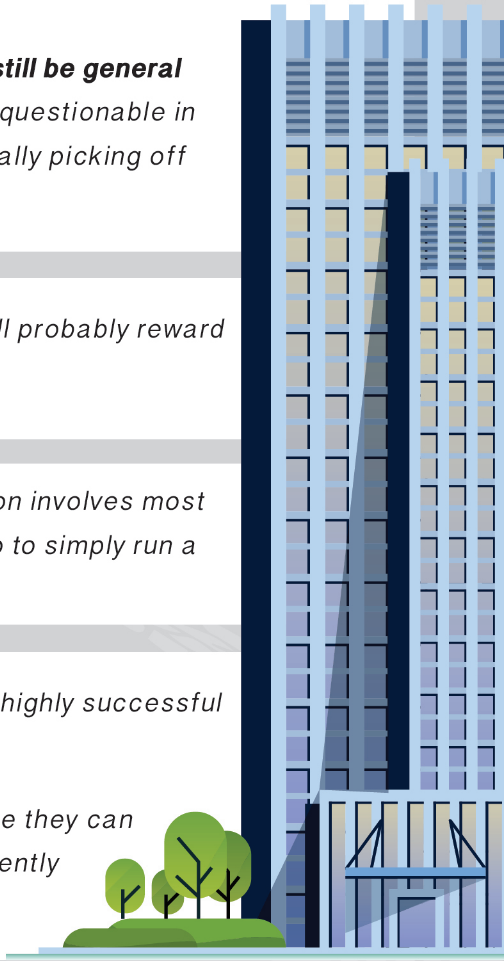
PAGE 171

"By now, you see that building an enduring, valuable organization involves most of the same things that good managers and businesspeople do to simply run a good business."

PAGE 172

"The challenges of the industry make it almost mandatory that highly successful participants have an inordinate amount of drive.

***Highly successful people in this industry have a vision.** Because they can see beyond just building projects, they are able to let go sufficiently and allow others to do things."*



JS

I devoured this book during a weeklong retreat with my wife on the North Carolina coast. I hope you'll spend some time reading this book, purchasing copies for your team, and thinking about the future that you want to create at your firm!

Buckle-up!

Please email feedback to jonathan@autobahnconsultants.com or call me at 216-870-4219!