

Predictability Is Power

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Unpredictable

What would you do if you could predict the future? Would you bet on the horses, invest in a tech company? Would you befriend a future movie star, or avoid an accident on the freeway? Would you avoid that lettuce at the salad bar, save a life, or marry the perfect mate? Or, would you pick the winner of the World Series three years in the future just as Ben Reiter of *Sports Illustrated* famously did in 2014? As a baseball fan, that might be my choice.

You see, predictability is power. When trains run on predictable schedules, we make it to meetings or the airport on time. When a stoplight turns from green to yellow, then to red, we know how to react. We stop and then start in a civilized fashion. When Starbucks gets your “Tall, Non-Fat Latte with Caramel Drizzle” perfect every time, even though they never spell your name the same way twice, all is right with the world.

Predictability is power. If those trains do not run on time, you would have to leave for appointments or to catch airplanes hours earlier. You might choose cars instead, further impacting traffic, air quality, accident rates, insurance, and general frustration. If your caffeine of choice is not delivered perfectly every time, well, the world wouldn't change very much, but an amazing business would not exist, a business built on predictable outcomes.

Predictability is not something we see much of in the design and construction industries. In August 2017, *The Economist* reported more than 90 percent of the world's infrastructure projects were not meeting schedule goals, and more than 60 percent of the UK's building projects were not meeting budget goals.¹ In 2016, a McKinsey report documented “large

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projects across asset classes typically take 20 percent longer to finish than scheduled and are up to 80 percent over budget.”²

To experienced professionals in the design and construction industries, these reports are not surprising or unique. In 2010, I wrote in *The Owner’s Dilemma: Driving Success in the Design and Construction Industry* that a Google search with the phrase “buildings over budget” pulled more than 48 million hits, including a hospital over budget by a million dollars and an Olympic village over budget by a \$100 million.³ A similar search in 2018 unearthed a Chinese dam with a budget that quadrupled from \$8.5 billion to \$37 billion, a BBC headquarters with an overrun of 110 million pounds, and a 35,500 square foot, \$13 million dream home that cost \$20 million before it was complete. These data bolster the argument from the article in *The Economist* noted earlier, which also distressingly reported on the ill-fated Berlin Brandenburg airport. That project, self-described as a “shit-show,” was, at the time, six times over budget.⁴



Take it! You should have told me
you're a contractor. **YOUR** future is UNPREDICTABLE!

The design and construction industries are riddled with these unpredictable outcomes, and, unfortunately, most industry professionals appear powerless when asked to dependably deliver projects within budget and

schedule goals. As a result, achieving consistently predictable outcomes has become the holy grail of the design and construction industries. Predictably attaining quality, schedule, and budget goals set at the start of a project should be a minimum standard of performance for any industry. Yet, predictable attainment of goals seems to be an impossible dream in the design and construction industries, known as the least efficient and productive in the world.

This lack of predictability is the most glaring evidence of our industries' inefficiency, which remains the lowest of any major industry type in the world. It is, however, not the only evidence. Amy Edmondson and Susan Reynolds listed a number of unfortunate facts from multiple sources, including the Modular Building Institute, in their book, *Building the Future*, a book about complex super teams. The authors noted,

Research on construction industry efficiency reveals “25 to 50 percent waste in coordinating labor and in managing, moving, and installing materials [...]; losses of \$15.6 billion per year due to the lack of interoperability [...]; and transactional costs of \$4 billion to \$12 billion per year to resolve disputes and claims.”

Edmondson and Reynolds added, “Studies suggest that up to 75 percent of construction activities **add no value.**”⁵

Where other industries have been able to restructure and reinvent, the design and construction industries continue to slog along, refusing to address their fragmentation, supply chain weaknesses, labor challenges, and communication barriers. The McKinsey Global Institute reported in February 2017 that “Globally, construction sector labor-productivity growth averaged 1 percent a year over the past two decades, compared with 2.8 percent for the total world economy and 3.6 percent for manufacturing.”⁶ Despite technology advances, according to McKinsey, productivity continues to disappoint in the construction industry, yet, if we were able to match the efficiency of the rest of the economy (manufacturing, retail, and agriculture), we could add \$1.6 trillion annually to the world economy. This amount would “meet about half of the world’s annual infrastructure needs or boost global GDP by 2%.”⁷ That number reflects impact and opportunity. There is no doubt that Katerra, Convene, UniSpace, and other bright non-traditional companies have their eyes on precisely that target and those opportunities.

When I wrote *The Owner’s Dilemma* with Canan Yetmen in 2010, I was already aware positive outcomes in design and construction were related to the predictability of those outcomes. You see, owners need to understand

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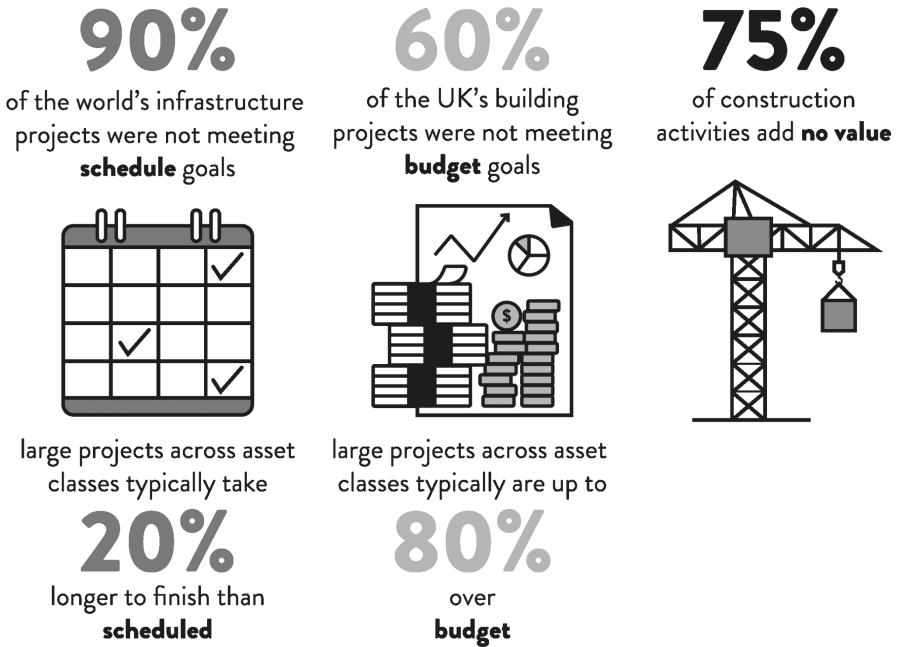


Figure 1.1 Data demonstrates lack of efficiency of the design and construction industries

what they are getting as far as cost, schedule, and quality at the beginning of each project. The results don't always need to be the cheapest or the quickest, but sometimes they do. There is no doubt, though, owners always know precisely what product—what building—they need for their business, and if they are not going to get that product, they need to know as soon as possible. That product—that building—impacts their business plan. The need to understand what you are getting as an owner is consistent for universities, hospitals, corporate owners, developers, and other business owners, large and small. COVID-19 has brought this priority into even clearer focus as business plans have critically tightened.

Unfortunately, for most industry professionals, the search for stability and control in the industry starts with the selection of process. By process, I mean delivery processes such as Design-Bid-Build, Integrated Project Delivery (IPD), Design-Build, or GMax. Many in the design and construction industries still mistakenly believe in the magic of selecting the perfect delivery process. We are obsessed with this choice. Inevitably, the very first question I am asked when I speak at industry events is, "What is the best delivery process?" Many industry self-help books spend most of their pages

analyzing delivery processes and related contracts that only incrementally improve the industry. Some books are dedicated entirely to a single process like design-build or IPD. This obsession is tantamount to Nero fiddling while Rome is burning.

It's Not About the Process

I will not argue that some processes do not lend themselves to greater predictability than others through increased communication and lowered risk. I am not saying that process is not essential in our industries. However, it is well documented that a **lousy team can screw up a great process**, and, conversely, a **great team can overcome even the worst processes and contracts**. I've learned this lesson repeatedly during my career, as many professionals have. I have seen great teams deliver Design-Bid-Build projects successfully, and terrible teams screw up the best collaborative IPD contract. Certainly, good processes can help support a great team, a team with values, and a team actively collaborating. Still, no process can ever overcome the deficiencies of a lousy team or an owner/client that does not take their responsibilities seriously.

Something that significant and progressive architectural firms of the world like KieranTimberlake know, daring and innovative companies of the world like the Broad Company know, as well as forward-looking enterprises like McKinstry know, and emerging property technology companies know, is that a **great team can reinvent and create transformational processes**. I wrote an article a couple of years ago called "The Future of Architects: Irrelevance or Extinction" as a call to action.⁸ I worry our resistance to change in our profession will be our undoing. It is important to recognize that our professions are not sacred and our places in these industries are not guaranteed. We in the design and construction industries must wake up and understand that incremental change is no longer sufficient.

Do not confuse predictability with the ordinary in the design and construction industries. Predictability in our industries would be extraordinary and remarkably valuable. Time after time, owners and project teams are disappointed by delivery processes and deeply confused by the number of ways projects can go wrong. This confusion stems from the fact that predictable outcomes for projects are primarily a **product of culture, not process**.

When I read General Stanley McChrystal's book *Team of Teams*⁹, about creating new kinds of resilient teams to respond to a new type of warfare, I had a critical moment of insight. I realized many people in our industries approach designing and building projects as if they are going to war with the members of their teams. These adversarial relationships have long undermined our

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ability to fight the real enemies of our industries, the fragmentation, the complex challenges, the unexpected problems, the changing conditions, the lack of knowledge, the lack of decisions, and the lack of communication. We have all experienced this destructive dynamic emerging from the overwhelming desire and responsibility to protect our businesses or our interests above what is right for the entire team and the entire project. Owners do this all the time, treating the project team as the enemy. Nothing good comes out of war. As Pulitzer Prize-winning author Barbara Tuchman said, “War is the unfolding of miscalculations.”¹⁰ We have enough confusion and miscalculation in our industries with which to grapple without creating more. These are the teams that destroy processes, even great processes. Mark Linenberger from Linbeck observed IPD team members having trouble building trust on Cook Children’s Medical Center because it’s “easy to become protective of your interests and forget that in IPD the team wins or loses together.”¹¹ When we join a team, we must be fully committed to that team and to creating a culture that leverages processes and produces great outcomes.

A Culture of Predictable Outcomes Drives a Project to a Set of Clear Goals and Achieves Those Goals

The Owner’s Dilemma was as much a leadership book as a project management book. However, it also addresses two other key points impacting project success: collaboration and decision-making. It was not until years later and additional research I understood that predictable outcomes are a product of a working culture created by the convergence of excellence built into each of these three areas, Leadership, Collaboration, and Decision-Making. More specifically, a Culture of Predictable Outcomes is a culture built from sophisticated-caring **leadership**, high-performing **collaborative teams**, and master-level **decision-making discipline**, all supported by skills, processes, and tools (See Figure 1.2). If any of these elements are missing, predictable outcomes will be compromised, even corrupted. With these elements, predictable outcomes, barring natural disasters, are guaranteed. I found this pattern repeated again and again in a variety of successful teams, whether it relates to a campus construction project, a Chilean mine disaster, or the Astros 2017 World Championship Baseball organization.

A Parable

On June 30, 2014, the only thing that seemed predictable about the Houston Astros baseball team was its losing record. Ben Reiter, sportswriter and,

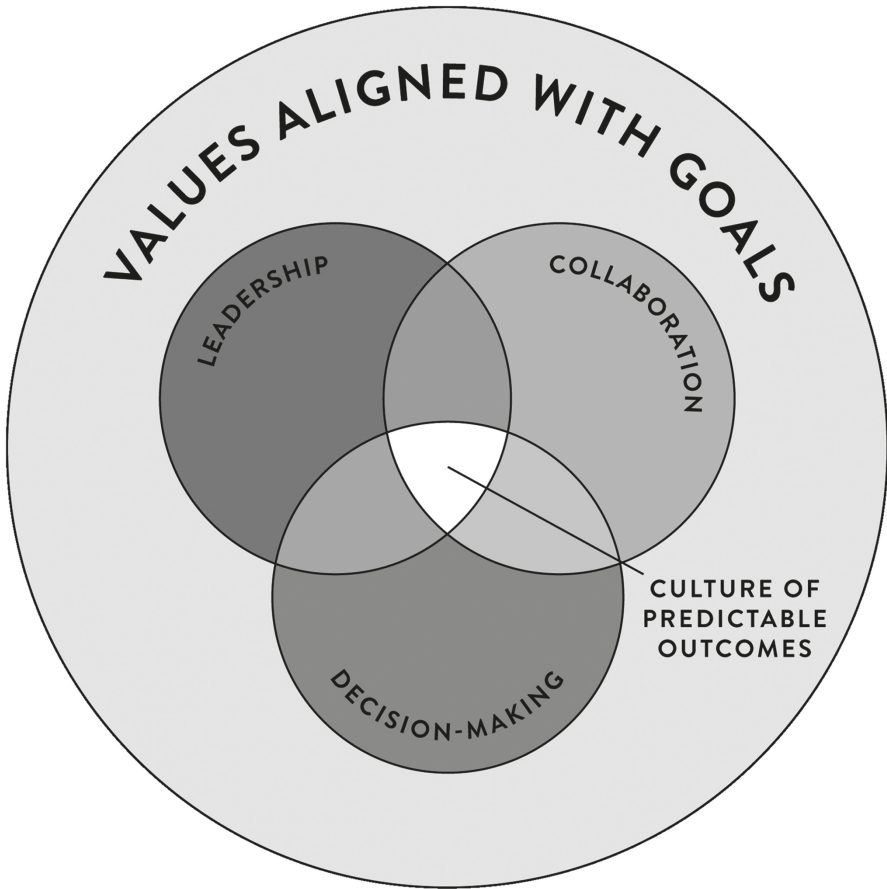


Figure 1.2 Model for creating a culture of predictable outcomes

later, author of *Astrobball*, described the team as “ludicrously bad.”¹² In 2017, Ben reflected, “Since the start of the 2011 season, the Astros had lost nearly twice as many games, 358, as they had won, 187.”¹³ Regardless of the Astros’ record, Ben went back to New York in June 2014 after meeting with the Astros organization and wrote a cover story for *Sports Illustrated* predicting the loser Astros would be World Series champions just three years later in 2017. The rest of the world was stunned when the Astros won the World Series championship exactly three years later, and when George Springer, the man featured on the 2014 cover of *Sports Illustrated*, appeared again on the 2017 cover as the World Series MVP.

What did Ben Reiter see when he visited the Astros that June? What does Reiter’s prediction have to do with the design and construction industries?

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How does the Astros' story also offer a cautionary tale? Our journey to building a Culture of Predictable Outcomes will start with these questions.

What Reiter observed in Houston in 2014 was an organization developing some of the elements of a Culture of Predictable Outcomes. After the success of the Astros in the 2017 World Series, Reiter wrote about their journey from loser to victor in his book *Astrobball*, in 2018. As the story unfolds, it becomes evident that something unusual was happening in Houston. It started with Jeff Luhnow, a freshly minted general manager from the Cardinals scouting organization. Luhnow had leadership abilities built from an eclectic background outside the world of sports and, with a personal history split between Mexico and the United States, “an ability to build a bridge between two cultures.”¹⁴ Jeff also had something else that other major league organizations did not: Sig Mejal, a former NASA rocket scientist. In this fascinating story, Reiter documents critical elements that can create predictable outcomes, sophisticated leadership, high-performing teams, and disciplined decision-making. For the Astros, decision-making came in the form of combining *Moneyball* practices with human understanding and expertise.¹⁵ In June 2014, Reiter didn't quite know how to define what he saw, but he knew it was extraordinary. What Reiter did not know in 2014 or in 2018 when he wrote *Astrobball*, was the Astros organization was missing a critical element to success, one that made their long-term future very unpredictable, even scandalous.

The Elements

The three critical elements of a Culture of Predictable Outcomes are sophisticated-caring **leadership**, high-performing **collaborative teams**, and master-level **decision-making discipline**. The formula is that simple, although specific qualities of each element are important. These qualities will be outlined in Chapters 2, 3, and 4. Although daunting, these elements are straightforward and achievable on any project. So why is creating a Culture of Predictable Outcomes so difficult to attain?

There are four reasons for this failure grounded significantly in a lack of business training for professionals in various parts of our industry. Because business skills are not generally part of an architecture or engineering education, these professionals often default to tactics rather than strategies. These tactical approaches have created barriers to success:

- 1) The first barrier to success is the **design and construction industries' obsession with delivery processes**. Many in our industry believe processes drive collaborative behavior, yet there is ample evidence demonstrating this is not the case. Collaborative team behavior is supported by process not driven by process.

In addition, delivery efficiency has been confused with procurement efficiency and, as a result, often creates the opposite outcome. There was a time where the architect was also the master builder. The entire team worked together to meet the project goals. Once specialists emerged and architects created contract drawings to communicate design intent to general contractors, the procurement process changed. Boards and legislatures believed they had a tool for competitive procurement.

This history is well documented in *Program Management 2.0* by Thomsen and Sanders, "Governments at all levels mandated competitive bidding with legislation and procurement regulations. Now that there were drawings and specifications that described the project and owners could ask several builders for a price, they could award the job to the lowest bidder. That was particularly attractive to public owners who wanted to demonstrate an objective use of public money. Although it was far from a universal fact, it gave the appearance of buying the project for the fewest tax dollars. Conventional wisdom was that design-bid-build gave everyone an equal opportunity to do business on the public dollar and the process precluded graft."¹⁶

Unfortunately, this new procurement process had the unintended consequence of creating adversarial relationships. It also led to a dynamic where many contractors felt forced to bid low and use change orders to make a profit. So began the myth that delivery processes are the primary source of success and failure for the industry. Unfortunately, change in delivery processes represents only incremental steps, distracting from the other enormous challenges of the industry, the fragmentation, one-brick-at-a-time construction, start-from-scratch-every-time design, resource-consuming end products, and incredibly expensive and inefficient traditional practices. No delivery process by itself, Design-Build, Progressive Design-Build, G-Max, CMAR, or IPD, effectively addresses these issues.

- 2) The second barrier to success is a lack of understanding that **all three elements of Creating a Culture of Predictable Outcomes are critical to success**. Sophisticated-caring leadership, high-performing collaborative teams, and master-level decision-making are essential and

synergistic elements to creating a culture of predictability and success. Yet, many organizations focus only on one or two of these elements with disappointing results:

- **Leadership and Collaboration alone**, not supported with disciplined decision-making, is unproductive—Project teams focused solely on leadership and collaboration are doomed to frustration without disciplined decision-making. Unless leaders and team members understand how and when decisions will be made along with what information will be required to make those decisions, projects will stall under decision weight.
 - **Leadership and decision-making alone**, without collaboration, destroys teams—Project teams relying on leadership and decision-making without focusing on collaboration undermine their teams, ultimately destroying team effectiveness, causing mistakes and delays. Leaders making decisions without teams will not get team buy-in to decisions and may find those decisions undermined. Teams are needed to provide decision-ready information; therefore, decisions made without team involvement will be less informed and highly suspect.
 - **Decision-making and Collaboration alone**, without leadership, will simply break down—Project teams that rely on decision-making and collaboration are missing critical leadership support providing a clear path to success. Without sophisticated-caring leadership, even the most collaborative teams will stray off course, and some critical decisions, decisions owned only by leaders, will not be made. In the end, teams and projects without leadership will break down.
- 3) A third barrier to pursuing a Culture of Predictable Outcomes is our traditional **need for control in the design and construction industries**. We tend to be incredibly hierarchal and spend a great deal of time worrying about who is in charge. Is it the architect, owner, contractor? This interest in control is very old-fashioned and is counterproductive to creating great, nimble teams. Control slows down knowledge-building, innovation, and decision-making at the very moment that we need more speed. Stanley McChrystal spoke about a similar challenge in his book *Team of Teams*,

“In the course of this fight against terrorism, we had to unlearn a great deal of what we thought we knew about how war—and the world—worked. We had to tear down familiar organizational structures and

rebuild them along completely different lines, swapping our sturdy architecture for organic fluidity, because it was the only way to confront a rising tide of complex threats.”¹⁷

Holding on to control will kill innovative cultures.

- 4) The last barrier to success in achieving a Culture of Predictable Outcomes is not necessarily learned in business classes. However, this element is often the missing ingredient in many leadership, collaborative, and decision-making cultures, ensuring they will fail. The missing ingredient is “**Values Aligned with Goals.**” This was the missing element for the Astros in 2017 when they began their ill-fated sign-stealing activities alongside their run to the 2017 World Series. It was the missing ingredient as the Astros manager, Hinch, found himself sabotaging the illicit monitor in the dugout but never confronting the players,¹⁸ and it was the missing component as the players took control of the Astros’ future while leaders turned a blind eye.

“Values aligned with goals” is an overarching ingredient in creating a Culture of Predictable Outcomes (See Figure 1.2). Let’s be clear, the Astros team had a set of values in 2017, but those values were aligned with winning at all costs. They did not align with maintaining credibility for the club’s leaders, building a future for the club’s players, or even maintaining the championship they won in 2017, which might have been at risk. General Manager Luhnow stated that he was not aware of the activities of his organization. Yet, the evidence clearly showed that the baseball operations employees and the players consistently believed that Luhnow, like Hinch, endorsed their actions through his silence and inattention. Values must be articulated.

In the design and construction industries, many firms and companies spend little or no time discussing values and the manifestations of those values. The lack of aligned values to goals undermines our ability to create cultures that operate in a predictable and innovative manner.

What’s Ahead

This book is designed to help project teams and other stakeholders in the design and construction industry overcome these barriers by introducing you to each of the elements and underlying qualities of Creating a Culture of Predictable Outcomes.

Chapter 2—In this chapter, **Sophisticated-Caring Leadership** will be carefully defined, addressing both character and responsibilities.

Chapter 3—In this chapter, **High-Performing Collaborative Teams** will be provided with a guide to success.

Chapter 4—In this chapter, **Master-Level Decision-Making Discipline** will be framed and detailed so team members can use these tools to effectively drive outcomes.

Chapter 5—In this chapter, **Aligning Values and Goals** will be introduced as the heart of the Culture of Predictable Outcomes.

The challenges and the opportunities related to **Risk and Contracts** will be discussed in Chapter 6. In Chapter 7, the **Twenty Freight Trains of Disruption** will be a fitting backdrop for considering a culture of innovation. In Chapter 8, the **Case for Research** will be presented (again).

By the time we get to Chapter 9, you will better understand not only how to remove the barriers to Creating a Culture of Predictable Outcomes but how you can **predict a better future for your projects and organization**.

Chapters 2–9 have supplements to provide you an opportunity to consider and discuss how a Culture of Predictable Outcomes applies to real situations in the design and construction industries.

Notes

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