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Understanding the True Cost of Construction in Today's Market

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In recent years, companies have begun to raise concerns about the increase in costs for their major construction projects, looking for clarity as to why costs have doubled from what they were 20 years ago. Industry analysis confirms that project costs have grown about 200 percent in the last 2 decades, but only approximately 60 percent of that growth can be accounted for with inflation. This leaves 140 percent of project cost growth unaccounted for—adding up across a combination of owner costs, indirect construction expenses, bulk material, equipment, home office and engineering and direct construction—leaving many project owners scratching their heads as to why they are paying twice as much today as they did for similar projects in the 1990s.

While overall equipment and materials costs have remained consistent with standard market inflation, and there has been some alleviation of cost pressures with the open global marketplace, overall project budgets are still increasing. There are a number of factors impacting this escalation. It is important for owners and project leads to understand the causes for the dramatic rise in construction costs over the last 20 years. The following will evaluate the real cost of projects today, providing key considerations to plan and measure projects going forward.

Often, companies approach engineering, procurement and construction (EPC) contractors with the expectation that a new project will cost the same or near the cost of a similar past project or budgets pulled from historical market data, and ask for comparable bids. These expectations of cost are based on similar projects from 10 to 20 years ago, and don't take increases beyond inflation into account. In the game to win bids, EPCs may try to meet these expectations for budget at the outset, only to find that costs cannot be contained to it later in the process. As an increasing number of projects exceed initial budgets, it is time for the industry to reset expectations around the true costs of construction. To do this, owners and contractors need a clear view of what factors are driving escalation.

There are some companies, particularly in the oil and gas industry, that have shifted their cost basis expectations to today's reality and are investing in proactive efforts to conduct thorough early cost analysis for projects going forward. My colleagues and I have helped build education around current true costs and their drivers for a handful of clients. Evaluating the key areas impacting current construction costs makes it possible to frame the overall budget from the outset and enable planning. Below is an overview of these key areas, which provide the basis for why today's major construction projects have become so expensive.

- **Projects have grown in size, production and complexity—**This has resulted in increased owner costs, which account for a large portion of overall escalation, according to a report from Westney Consulting Group. Project management and front-end engineering design (FEED) overhead has grown, alongside an across-the-board increase in the number of hours spent on home-office work and engineering. Industry experts have estimated that the hourly rate for this work has risen approximately 40 percent in the last 20 years, balanced only by the increased use of high-value engineering centers.

- **Concrete and steel use has increased—**Larger projects and the use of heavier equipment have led to increases in the amount of concrete and steel used for projects. Because many companies benchmark concrete and steel costs by equipment count, it is important to distinguish that while equipment counts have remained consistent over the last 20 years, equipment is now larger, and therefore has additional costs associated with it. Another example is larger module footprints in liquefied natural gas plants, which now use more concrete than in similar projects 20 years ago. The standard thickness and size for foundations have increased as well, further adding to the quantity of concrete and steel needed.

- **Globalization has complicated materials markets—**The emergence of competitive global suppliers and distribution systems also impacts understood costs. While in some cases this has helped balance escalation, other areas, such as welding and painting, have scaled significantly. Use of competitive global markets also brings the risk of entering into business with less experienced suppliers, which may lead to challenges.

- **Construction site and labor demands have changed—**Contractor management teams have grown, with an emphasis on more headcount to support quality assurance and project controls. This has also led to higher blended rates – with a higher ratio of senior staff and foreman to journeymen and helpers on sites today compared to the 1990s. Labor burdens are also more expensive and impact the total end cost of a project.

- **Health and safety are greatly improved—**Health and safety practices and standards have evolved substantially in the last two decades. With these improvements have naturally come an increase in costs to enable them. Overhead related to ensuring safety, along with better controls around overtime and incentive pay are intangible factors that have contributed to escalation.

- **Requirements in high labor markets—**Due to new and increased labor laws in high labor markets such as Australia and Canada, labor costs are rising for many projects. These markets require a higher percentage of local labor to expat labor (for example, Canada allows a ratio of 70 percent local to 30 percent expat workers). When comparing current to historical figures for labor, we must remember that often a higher number of inexpensive expat workers were allowed in the past, and that is no longer the case. Projects in regions where the local labor rates are much lower or more expats are allowed at a cheaper rate will generally see lower overall direct construction costs. According to a report from The Oxford Institute for Energy Studies, between 2009 and 2012, the cost of labor in Australia "increased by over 40 percent, rising at a rate considerably higher than the U.S. and East Asian countries." We're seeing the same effect with Saudization, and in 2011, the Saudi Ministry of Labour introduced a program to require an increasing number of higher-paid Saudi national workers to replace expat workers.

- **Environmental regulations have become a factor—**Requirements around the globe have become more stringent around how construction projects will impact the environment and the economy of surrounding communities. Obtaining licenses and conducting early technical, legal and field studies are increasingly expensive, but did not historically impact project costs. The costs of the technical and environmental studies and legal work necessary under today's regulations must be considered when realigning budget expectations.

Many projects fail to gain initial traction due to unrealistic cost expectations, or are completed significantly over budget. As discussed, projects are often assumed to cost a certain amount without the factors above taken into consideration. Contractors may bid at higher than these assumed costs, but in many cases, estimates still fall short of actual costs, which will escalate as a project progresses. Projects may face delays, labor challenges and other obstacles that cause costs to increase throughout the lifecycle. At the end of construction, some projects end up at more than 100-percent over budget. However, this is extreme, and we more commonly see excess in the 40- to 50-percent range.

By understanding the factors driving cost escalation, and taking those into consideration, owners can align their expectations with the realities of today's construction market. These factors will vary in impact depending on project type and location, but generally clear up some of the confusion in the industry to date. This clarity is important when exploring financing and new project development, and also supports contractors and EPCs as they communicate budget increases to corporations and bid projects based on the current true costs of construction.

ABOUT FTI CONSULTING, ASSET LIFECYCLE MANAGEMENT PRACTICE

FTI Consulting's Asset Lifecycle Management (ALM) practice streamlines the construction, maintenance, operations and retirement of your assets, helping to deliver optimal lifecycle return on investment. Our seasoned professionals, well-proven processes, and state-of-the-art tools and technology optimize performance, reduce risk and improve collaboration among stakeholders across countless industries. We advise owner/operators, equity partners and EPC firms on the diverse challenges faced throughout the ALM process.

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Lori Hernandez is a Senior Director in FTI Consulting's Asset Lifecycle Management practice. Lori is a seasoned Project Management professional with expertise in Estimating and Project Controls, delivering mega capital construction projects in excess of $30bn USD. She provides professional services related to project management and assurance, portfolio and risk management solutions, engineering and project data solutions, estimating and project controls, analytics and reporting, implementing leading practices, and project systems and tools. Her experience spans multiple industries including Chemicals, Food and Beverage, Manufacturing, Mining, Nuclear, Oil & Gas, Petrochemicals, Pharma, Retail, and Utilities. Her knowledge and deep understanding of all aspects of project execution, from initial concept selection to the transfer of operations, has allowed her to serve in multiple functional roles across projects and in project/program management and oversight.