

How to transform a fractured industry – Embracing forward thinking collaboration – by Nancy Greenwald

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Every construction project, from high-rise offices, to power plants, to roads and bridges, to individual homes, requires a coordinated effort. The cast of characters needed to move a project from design to reality is long and typically includes the owner, architects and engineers, contractors and subcontractors, construction managers, and suppliers, among many others. The smooth transfer of information and coordination of participant's efforts is crucial to a successful outcome. Yet relationships among participants are most often defined by linear processes, with inefficient communication, strung together by a disjointed spider web of contractual and insurance relationships that treat the allocation of risk among the parties like a game of hot potato. All too often, the resulting inefficiencies increase costs and result in delays in project completion. And those pre-completion cost overruns and delays are just the tip of the iceberg. The resulting problems negatively affect the utility and performance of the construct, whether vertical (building), or horizontal (infrastructure), over its useful life.

How do we change this picture?

The answer is that we need to change the way we do business as an industry. We need to embrace forward thinking collaboration. As long ago as 2009, a special committee of the National Research Council published a study "Advancing the Competitiveness and Efficiency of the U.S. Construction Industry." They concluded that the best way to effect change was to "drive change strategically through collaboration." In 2014 a study on integrated project delivery systems concluded that the specific delivery system was not the driver in [project] success. The driver of success is "Highly integrated teams engaged in practices that brought individuals together, in multidisciplinary interactions."²

The Project Lifecycle Approach

One way to adopt a more collaborative approach is to shift our thinking away from the traditional notion of project development as a linear process with participants essentially plugging into the process at various points. We need to adopt a Project Lifecycle Approach and recognize that the long term success of a project over its useful lifetime should be the shared goal that informs the participant's roles from the very beginning of the process.

The numbers are compelling

Case after case, study after study, tells us that the per project savings of adopting collaborative processes as early as possible are measured in the millions to tens of millions of dollars and the time savings in months if not years. This is why so many countries, including the United Kingdom, Finland, and Denmark, to name a few require the use of BIM on government



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projects. BIM is not just a powerful technology, BIM causes a fundamental change in the way participants interact with each other. Collaboration is also why 80% or more of owners that have used Integrated Project Delivery (IPD) report that it increased process efficiency, reduced the risk of litigation, improved construction quality, improved sustainable building performance and reduced construction costs.

The importance of a Project Life Cycle Approach becomes clear when you consider that 75% – 82% of the cost of a facility is operational and lifetime costs, and, of course, 100 % of the use occurs when construction is complete. The typical design and construction process is simply not sufficiently focused on the long term success of the product. To be successful, the process must consider and incorporate the needs of those charged with operation and maintenance, the experience of the end user, and the future of the construct.

The value to be gained is not just about the numbers. It's about better projects that create a better experience for humans who use them. It's about resulting improved performance over the lifetime of the construct with respect to energy efficiency and maintenance. It's about projects that are better for the environment, and buildings that are ready for the future in that they are adaptable and smart.

Multi-disciplinary Collaboration

What's needed to achieve Project Life Cycle success is a project-oriented approach that incorporates multi-disciplinary, forward looking collaboration from the beginning. Relationships among parties need to be open, collaborative, and project focused. Risks need to be identified, discussed openly, shared fairly, and problems resolved cooperatively, through processes like mediation. Changes in contract language, insurance coverages, integrative dispute systems design, and improved communication methods form the practical foundations that need to be adapted so support this approach.

It's time to step into the future.

Footnotes:

¹This article is adapted from keynote speech presented at the conference "Building Smarter with Big Data," co-hosted by the Stanford Center for Integrated Facility Engineering (CIFE) and LKG Advisors LLC, November 9, 2015, Santa Clara, CA.

²Leicht, R. M., Molenaar, K. R., Messner, J. I., Franz, B. W., and Esmaeili, B. (2015). Maximizing Success in Integrated Projects: An Owner's Guide. Version 0.9, May. available at <http://bim.psu.edu/delivery>

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