

The “Program Tetrahedron”: A Changed Baseline Control Basis under Strategic Program Management

By Bob Prieto

In a traditional project management approach, control of project dynamics is often described by the project management triangle (Figure 1) that shows the need to balance the competing forces of cost, quality and time. Control bases include estimate, schedules and various definitions of fit for purpose or quality.

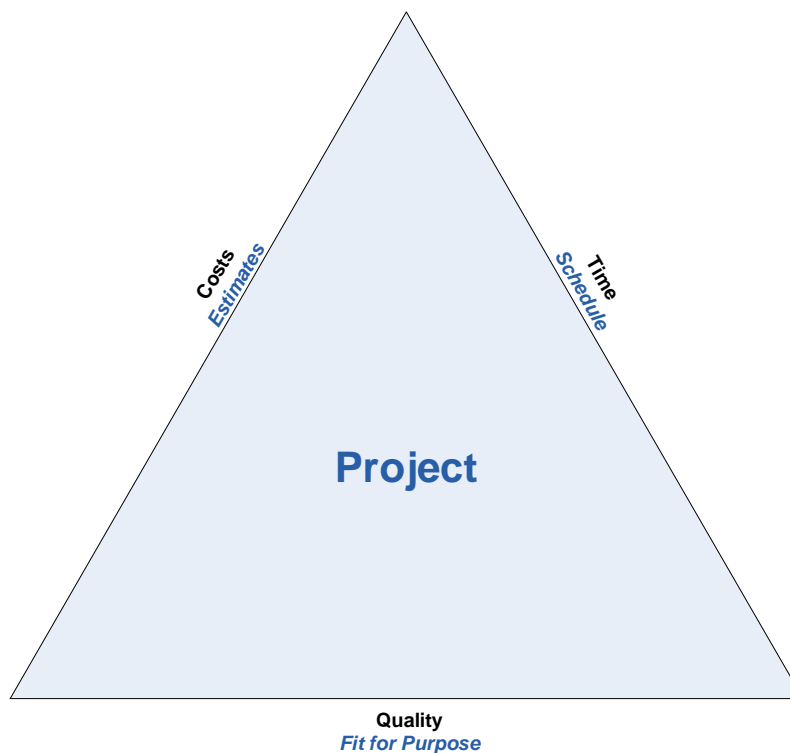


Figure 1 – The Project Management Triangle

Time frames are traditionally those associated with initial delivery of the facility and generally do not consider activities during the operating and maintenance period.

Under a strategic program management approach the control of program dynamics is more robust, corresponding to the increased challenges such programs often face because of factors such as scale, complexity and increased duration. This last factor drives significant changes in program control bases when time durations encompassing the entire lifecycle are considered.

In such programs the traditional project triangle can be replaced with a “**Program Tetrahedron**” where the traditional, three control bases are defined in a more expansive manner and three new control bases are introduced. This can be seen in Figure 2.

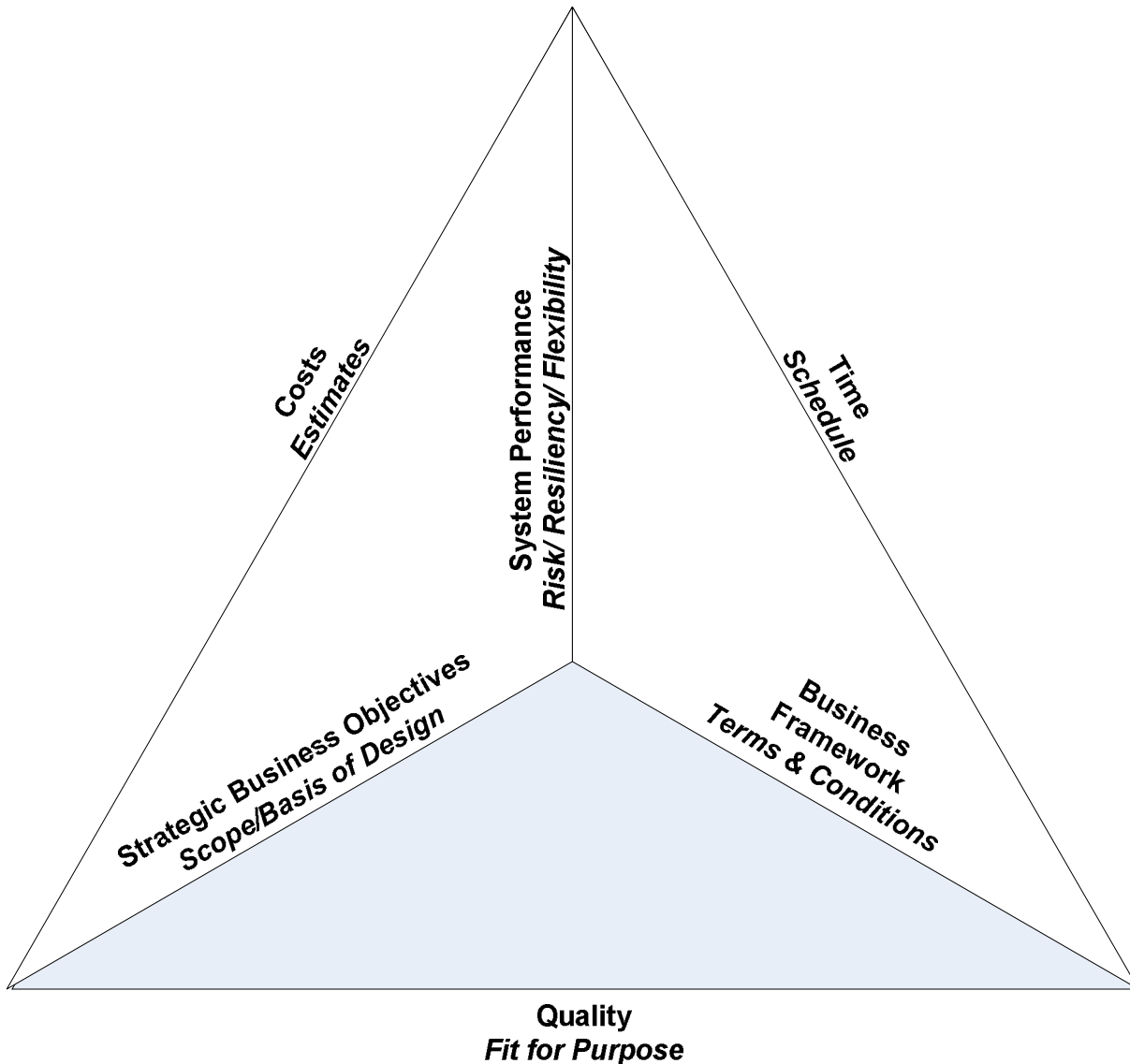


Figure 2 – Changed Control Basis Under Strategic Program Management

Here, programs may be defined to encompass initial delivery only, or increasingly, life cycle delivery of an “outcome”. Costs will encompass all lifecycle costs but also other “costs” such as environmental and social impacts associated with the other two axis of the triple bottom line. Time frames will now extend throughout the lifecycle and tradeoffs between initial schedule and lifecycle performance will come into play. Similarly, quality will take on new meaning, no longer focused on the initial set of program outputs, but

more focused on the quality of lifecycle performance and the quality of outcomes realized.

While significantly changed, these three control bases will be recognizable to project management professionals.

Under strategic program management three new control bases are added that may be more or less recognizable. These include controls around strategic business objectives, business framework, and system performance.

In more conventional project settings it can be argued that scope and basis of design serve as surrogates for strategic business objectives. To some degree this is true, but in large, complex, long duration programs, major failings have been associated with weaknesses in clarity, articulation and alignment around strategic business objectives. As a control basis it may represent the most significant challenge in large complex programs.

Similarly, business frameworks are considered in the form of terms and conditions in more conventional projects but in large programs these frameworks will evolve, driven by externalities such as regulatory or tax changes; technology obsolescence; and changed competitive environments.

The final new control basis to be addressed goes very much to an outcomes focus by assessing, measuring and controlling factors such as resiliency, asset flexibility (future proofing) and risk. Risk should represent a control basis even in the more traditional project management “triangle” but in a lifecycle program context it takes on more importance and an expanded set of possibilities to consider.

Conclusion

While the project management triangle has served the industry well, today’s project challenges and the use of outcomes driven lifecycle program management, considering each of the triple bottom lines, suggests that a new descriptor may be in order. The “Program Tetrahedron” reflects the broader set of control bases that today’s programs require.

About the Author



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Bob Prieto is a senior vice president of Fluor, one of the largest, publicly traded engineering and construction companies in the world. He is responsible for strategy for the firm's Industrial & Infrastructure group which focuses on the development and delivery of large, complex projects worldwide. The group encompasses three major business lines including Infrastructure, with an emphasis on Public Private Partnerships; Mining; and Manufacturing and Life Sciences. Bob consults with owner's of large engineering & construction capital construction programs across all market sectors in the development of programmatic delivery strategies encompassing planning, engineering, procurement, construction and financing. He is author of "Strategic Program Management" and "The Giga Factor: Program Management in the Engineering and Construction Industry" published by the Construction Management Association of America (CMAA) and "Topics in Strategic Program Management" as well as over 400 other papers and presentations.

Bob's industry involvement includes recent and ongoing roles on the National Infrastructure Advisory Council's Critical Infrastructure Resiliency Workgroup and the National Academy Committee "Toward Sustainable Critical Infrastructure Systems: Framing the Challenges". He is a member of the ASCE Industry Leaders Council, National Academy of Construction and a Fellow of the Construction Management Association of America. Bob served until 2006 as one of three U.S. presidential appointees to the Asia Pacific Economic Cooperation (APEC) Business Advisory Council (ABAC), working with U.S. and Asia-Pacific business leaders to shape the framework for trade and economic growth and had previously served as both as Chairman of the Engineering and Construction Governors of the World Economic Forum and co-chair of the infrastructure task force formed after September 11th by the New York City Chamber of Commerce.

Previously, as a senior industry executive, he established a 20-year record of building and sustaining global revenue and earnings growth. As Chairman at Parsons Brinckerhoff (PB), one of the world's leading engineering companies, Bob shaped business strategy and led its execution. Bob Prieto can be contacted at Bob.Prieto@fluor.com.