On the Subject of Systems and Project Management[1]

LETTER TO THE EDITOR

7 May 2023

Ref: *Stretton, A. (2023). The nature of 'systems', and some early systems contributions to modern project management, PM World Journal, Vol. XII, Issue V, May.* Available online at https://pmworldlibrary.net/wp-content/uploads/2023/05/pmwj129-May2023-Stretton-Systems-and-contributions-to-project-management.pdf

Dear Editor,

The nature of 'systems', and some early systems contributions to modern project management[2] by Alan Stretton is a good summary of the early history of the relationship between "systems" and project management. There are a couple of added points/comments that I feel may be worth mentioning. First with respect to Polaris, PERT and McNamara and second with respect to systems and project management today.

First, Polaris, was in my view a better demonstration of systems thinking as contrasted with the systems engineering we saw in Atlas. Success was underpinned by:

- Clearly defined, agreed to, and constantly articulated strategic outcome. The absence of clarity and communication of strategic outcomes is characteristic of every failing large complex program I have looked at. Polaris had the requisite clarity.
- Clarity of understanding and engaging in a multi-stakeholder environment (White House; Congressional Committees; DOD, Navy and other governmental organizational elements).
- Understanding the importance and value of trust in creating the "power of priorities" that comes with the reputation of the organization for accomplishment.
- A sustained focus on governance, not just management, deploying a range of bureaucratic strategies, one of which was managerial innovation which served to

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[2] Stretton, A. (2023). The nature of 'systems', and some early systems contributions to modern project management, PM World Journal, Vol. XII, Issue V, May. https://pmworldlibrary.net/wp-content/uploads/2023/05/pmwj129-May2023-Stretton-Systems-and-contributions-to-project-management.pdf

protect the program from outside interference. PERT sat here, more as a governance-related strategy than a managerial one.

- A range of managerial innovations including:
    - Outcomes focus (Navy ballistic missile capability) versus an output focus (hardware)
    - Integrated management control system that focused decision making on program costs in relationship to program performance.
    - Full system life cycle focus
    - Program Evaluation and Review Technique (PERT) – schedule/time focused. Later called PERT-Time. Original concept of the Program Evaluation and Research Task (original name for PERT) was to describe the optimum relationship among time, cost and performance. Three weeks after the team started development, in early 1958, cost and performance were dropped reflecting post-Sputnik (October 4, 1957) realities.
    - PERT/COST – extension to include costs (1961)
    - Reliability Management Index (RMI)
    - Concept of project management
    - Program management center
    - Program Management Plans (PMP) – hierarchal structure in which each plan is tied to another.
    - Weekly program review meetings

Many of these managerial techniques became contractual requirements imposed by DOD, despite the Special Projects Office's own private misgivings. Perception[3] was institutionalized and some of the factors that contributed to Polaris's strong foundations and success (optionality; matching authority and budget; disciplined flexibility) were lost in the adoption of a readily convenient perception.

Turning now to systems and project management today, Alan notes "There have been some comparatively recent articles connecting 'soft' systems and projects, but this is still work in progress, and therefore not part of this historical review". He is correct. Large complex programs are not well served by traditional PM theory and require a significantly

[3] PERT had little to do with the effectiveness of the effort to develop Polaris. It was not applied at scale until after deployment of initial submarines. In the early phase of program it was applied but did not work and later was applied and worked but for different purpose than officially described.

changed perspective[4]. Their nature more closely resembles open systems first defined as part of General Systems Theory.

All the best,

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