MCX

Member Communication Experience

Any views and opinions expressed in this article may or may not reflect the views and opinions of the Construction Management Association of America (CMAA). By publishing this piece, CMAA is not expressing endorsement of the individual, the article, or their association, organization, or company.

cmaanet.org

Stakeholder Management in Large Complex Programs

Key Points

- Traditional six-step stakeholder management process is described.
- Stakeholder management responsibilities are outlined.
- Multi-stakeholder environments are discussed and the importance of stakeholder trust emphasized.
- Stakeholder engagement strategy guidelines are provided and best practices highlighted.
- The importance of "influencing flows" on stakeholder engagement and the cascading impacts on projects are introduced.
- The evolving project ecosystem is described, recognizing the emergent nature of this complex system.
- Three new management constructs with respect to stakeholder engagement are outlined: sentries, scouts, ambassadors.
- Stakeholder management in both program and project contexts are considered.

Introduction

Large complex programs require more expansive stakeholder programs than what might be traditionally experienced even on the largest single projects. This more expansive approach is driven by the growth in scale and complexity of these programs and by the different constituencies and stakeholder groups who have different views and interests related to the various projects comprising the program. Additionally, these views may shift in subtle but important ways over time, influenced by the progressive development of the project and by perceived agreements with and actions by other stakeholders. In turn, all stakeholders and other external agents are affected and influenced by a broader set of political, economic, and social factors. For example, the decision to minimize certain construction impacts by constructing modules at a remote location may run counter to local job creation objectives of another constituency or regional labor organization.

In undertaking stakeholder engagement in large complex programs, the program manager must undertake a structured process and, equally important, ensure that the roles, responsibilities, and efforts on individual projects meet program standards and objectives and are well coordinated.

Stakeholder Management

Stakeholder management can be viewed as consisting of six principal steps. These steps include:

- Step 1 - Stakeholder Identification
- Step 2 - Stakeholder Mapping
- Step 3 - Stakeholder Issues
- Step 4 - Stakeholder Objectives
- Step 5 - Stakeholder Engagement
- Step 6 - Stakeholder Management

Apportionment of responsibilities between the owner organization (including the owner's Program Management Office), the program manager, and project contractors will vary. The following table provides a typical apportionment of responsibilities between the owner/program manager and the project contractors.

Stakeholder Management Responsibilities		
	Owner/Program Manager	**Project Contractor**
Stakeholder Identification	Key stakeholder identification utilizing a structured framework for stakeholder group identification; initial identification of individual project level stakeholders; identification of cross-program stakeholders based on project input	Complete identification of project level stakeholders consistent with program requirements established by the program manager
Stakeholder Mapping	Construction of one or more relationship maps among stakeholders identified during the stakeholder identification. Typical relationship maps will address the owner's organization; gov't agencies/authorities; financial and investor groups; key external stakeholder groups; key stakeholder identification utilizing a structured framework for stakeholder group identification; initial identification of individual project level stakeholders; identification of cross-program stakeholders based on project input.	Extension of program manager developed relationship maps and construction of new maps as required, understanding how individual stakeholders relate to the various project elements and to each other. Complete identification of project level stakeholders consistent with program requirements established by the program manager.
Stakeholder Issues	For each stakeholder a clear identification of major issues of	Issue identification is carried down to a more granular level by the

	potential interest to them is compiled and a cross-program master issues list is constructed. Construction of one or more relationship maps among the stakeholders identified during the stakeholder identification process. Typical relationship maps will address the owner's organization; governmental agencies and authorities; financial and investor groups; key external stakeholder groups.	individual projects, including identification of areas of particular concern. Extension of program manager developed relationship maps and construction of new maps as required, understanding how individual stakeholders relate to the various project elements and to each other.
Stakeholder Objectives	An initial survey of what stakeholders are trying to accomplish either in the way of program or project outcome or avoided concerns will be identified initially by the program manager and refined through the stakeholder engagement process and feedback from project level contractors. For each stakeholder a clear identification of major issues of potential interest to them is compiled and a cross-program master issues list is constructed.	Refinement of initial stakeholder objectives based on a specific project level view and subsequent engagement with various stakeholder groups. Issue identification is carried down to a more granular level by the individual projects, including identification of areas of particular concern.
Stakeholder Engagement	Identification and confirmation of the level of effort to be assigned to each stakeholder group and the preferred form of engagement and associated frequency. An initial survey of what stakeholders are trying to accomplish either in the way of program or project outcome or avoided concerns will be identified initially by the program manager and refined through the stakeholder engagement process and feedback from project level contractors.	Confirmation of the selected stakeholder engagement approach and implementation in conjunction with the program manager. Refinement of initial stakeholder objectives based on a specific project level view and subsequent engagement with various stakeholder groups.
Stakeholder Management	Overall program coordination and management; cross-program engagement strategies; emerging	Engagement with project level stakeholders based on agreed to strategy with the program manager

	issues tracking, reporting, and strategy development. Identification and confirmation of the level of effort to be assigned to each stakeholder group and the preferred form of engagement and associated frequency.	and consistent with apportioned responsibilities. Confirmation of the selected stakeholder engagement approach and implementation in conjunction with the program manager.

Key Steps in Stakeholder Management

The activities and their effectiveness in the overall stakeholder management process can have as much to do with shaping overall program success as the "hard" engineering, procurement, and construction activities undertaken. While these stakeholder management activities are required and can have a beneficial effect on project success, they are not sufficient in the world of large complex programs. This will be discussed later in this Executive Insight.

The stakeholder management activities need to have the highest-level visibility. It should be recognized that different people respond to different communication approaches at different rates. The role of the program manager is to develop the most effective strategies given the desired program outcomes. Then, the program manager must insure the strategies are implemented in a coordinated way across the various projects comprising the program. As always, the program manager must be vigilant to the issues that may lie within the "white spaces" (those risks that fall in between well-defined organizational, policy, process, and scope elements) between the various projects as well as potential "black swans" (large, catastrophic events that seem unknown but later prove to be preventable) that may emerge from well outside the program's horizon but that are more likely knowable if a broader engagement effort is being undertaken.

Step 1 — Stakeholder Identification

In the first step of the overall stakeholder management process, stakeholder identification, the program manager undertakes key stakeholder identification utilizing a structured framework for stakeholder group identification. One such framework for stakeholder identification is illustrated in the following table.

Stakeholder Groups	
Stakeholder Category	**Candidate Stakeholders**
Program	Program Executive Sponsors

	Program Manager
	Program Management Advisory Boards
	Program Management Team Members
	Program Staff
	Project Managers
	Project(s) Managers
	Project Team Members
Contractors	Contractors
	Key Suppliers
	Operations Management
Oversight	Program Management Office
	Owner Functional and Corporate Organizations
	Owner's Board of Directors
Financial	Equity Investors
	Debt Providers
External	Local Community Groups
	Special Interest Groups
	Labor Organizations and Trade Unions
	Media
Government	Regulators at All Levels
	Government Agencies
Customer	Customers or Facility Users

This stakeholder identification process is carried out both at the program level and at the project level, with the program manager developing an initial identification of individual project level stakeholders.

Based on this initial project level stakeholder identification, the program manager identifies an initial set of cross-program stakeholders that subsequently will be refined based on project inputs.

The program manager carefully defines the level of detail and characterization required by the various projects of the stakeholders acting upon their individual efforts.

Project contractors then complete identification of project level stakeholders consistent with program requirements established by the program manager.

Step 2 — Stakeholder Mapping

Having identified the universe of potential stakeholders, the program manager must now seek to understand how these stakeholders may relate not only to the program but also to each other. Stakeholder groups with conflicting and complementary objectives must be understood. Stakeholders who provide tacit leadership or financial support to one or more of the stakeholder constituencies must also be recognized in order to design appropriate stakeholder messaging and engagement programs.

Construction of one or more relationship maps among the stakeholders identified during the stakeholder identification process provides an effective tool for understanding these inter-relationships. Typical relationship maps will address the owner's organization; governmental agencies and authorities; financial and investor groups; key external stakeholder groups. An example of one such relationship map is illustrated below.

A word of caution is in order. It is important to remember that "The map is not the territory."
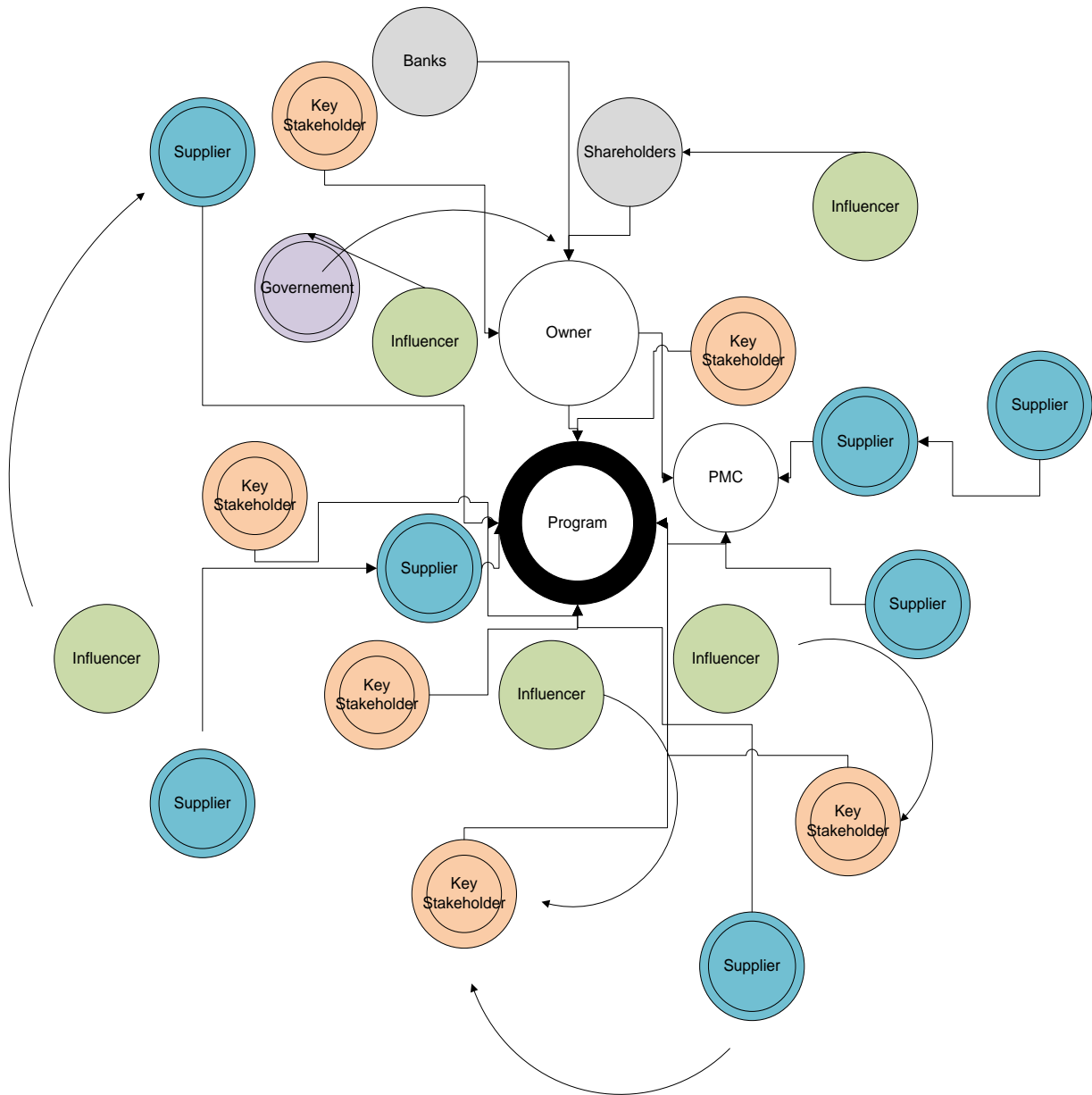
Stakeholder Map shows the program and Owner and PMC relationship to it and each other. Key stakeholders are shown as well as influencers. As you can see in the map, stakeholder's interests and relationships are interlinked. Proximity to the program or other players indicates the relative importance of the particular relationships.

Other relationship mapping techniques exist and include:

- Classification of stakeholders based on:
    - o power to influence.
    - o stakeholder's relationship with the program.
    - o importance of their issues to the program.
- Mapping stakeholder expectations based on:

- o   value hierarchies.
- o   Key Results Areas (KRAs).
- Ranking stakeholders based on:
  - o   needs vs. wants.
  - o   importance to other stakeholders.
- Ranking stakeholders by their:
  - o   threat potential.
  - o   potential for cooperation.

Various graphical presentations have been developed and include two-dimensional n x n matrices such as the 2 x 2 influence-interest matrix shown below as well as three-dimensional models (power, interest and attitude; Murray-Webster and Simon 2005) and radial models (The Stakeholder Circle; Bourne 2007).
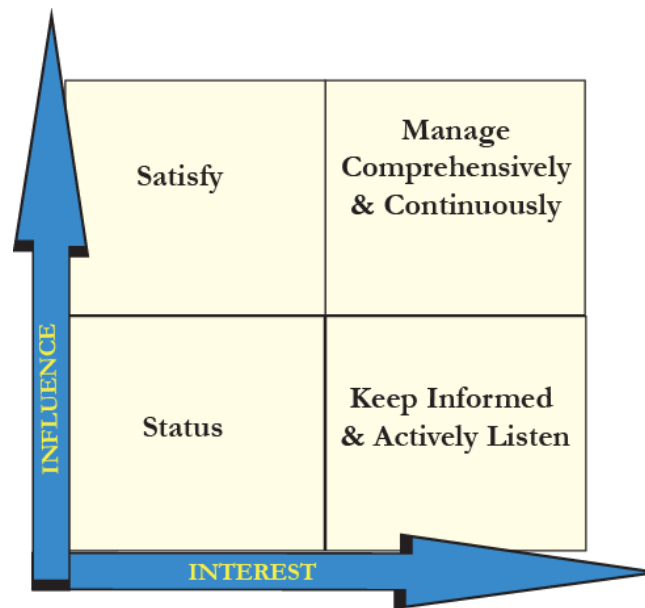
A third dimension may be introduced into the more traditional 2 x 2 matrix through color coding of stakeholders or variance of the circle sizes, locating them in this 2 x 2 space.

Dimensions against which evaluation of stakeholders for purposes of mapping may incur can include:

- Interest (high, low)
- Influence (high, low)
- Power (high, medium, low)
- Support (positive, neutral, negative)
- Need (strong, medium, weak)

Step 3 — Stakeholder Issues

Having identified the stakeholders potentially influencing the performance and outcomes of the program, it is essential for the program manager to understand the various issues that may be important to each of the individual stakeholders. The identification of likely stakeholder issues can be accomplished through a variety of techniques. Most large programs require the use of one or more approaches given the typically broad set of stakeholders involved.

Issue identification approaches include:

- Position statements previously prepared by the stakeholder group.
- Research on prior stakeholder engagements; press releases; public statements.
- Surveys of any fund-raising literature.
- Surveys of potential stakeholders around typical major issue areas.
- Stakeholder interviews.
- Single or multi-stakeholder workshops.
- Online forums.
- Moderated blogs.

Issues can be categorized, and relative importance assessed. Where possible the core drivers should be identified so they may be monitored through the program's life cycle. For example, a stakeholder group concerned with groundwater quality will become more active if major groundwater impacts are realized elsewhere as a result of broadly similar activities to those undertaken in the program being managed.

In particular, the program manager must understand issues of interest to multiple stakeholders.

Step 4 — Stakeholder Objectives

An initial survey of what stakeholders are trying to accomplish either in the way of program or project outcome or avoided concerns will be identified initially by the program manager and refined through the stakeholder engagement process and feedback from project level contractors.

The identification of stakeholder issues sets the stage for determining the objectives each stakeholder would like to see achieved as a result of the programs implementation. In determining these various objectives, it is important to ascertain when a minimum outcome is dictated by externalities, such as regulation, politics, or targeted rates of return.

Stakeholder objectives must be focused on needs vs. wants.

It is important to recognize that stakeholder objectives compete not only with the maximization of financial returns measured on a discrete project or program basis but also with each other. This last point is often overlooked**.** It may not be possible to satisfy all stakeholder objectives.

With respect to the competition of stakeholder objectives with a program's financial returns, it is necessary to ensure the full life cycle returns are being considered. Meeting stakeholder objectives should act to maximize these long-term returns compared to what the situation would be in the absence of satisfying these objectives. This leads to a more rational framework for evaluating and responding to the objectives of each stakeholder. For example, when dealing with a regulatory authority, failing to meet their bona fide regulatory objectives could result in denial of a construction or operating permit. Such a situation does not result in attractive financial outcomes.
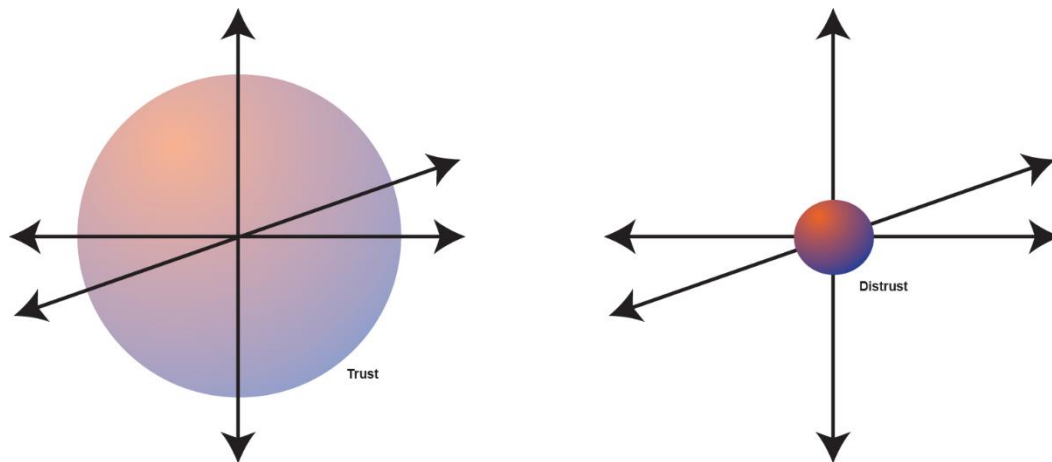
Step 5 — Stakeholder Engagement

The program manager must identify and confirm the level of effort to be assigned to each stakeholder group and the preferred form of engagement and associated frequency.

Early engagement with stakeholders helps set the stage for a constructive process throughout the entire program execution process. Stakeholder engagement can begin in the earliest stages of issue identification at the program level and then be built upon as the program is developed and ultimately implemented through a series of projects.

Proactive engagement allows surprises, issues, and problems to be addressed within a framework in which a high level of trust exists. Contrast this with a reactive situation where the first engagement takes place around a problem or crisis.

Program Execution Plan Options Constrained By Degree of Top Stakeholder Trust

Program managers should scale their stakeholder engagement strategies relative to the risks and impacts the program and its various projects are likely to create. There is no one-size-fits-all approach when it comes to engagement. Stakeholder mapping, such as the Influence-Interest grid, can provide guidance on selection of engagement strategies as reflected in the following table. Again, caution is urged. Stakeholder aspirations and needs are not static. They will evolve throughout the program.

Similarly, stakeholder-stakeholder interrelationships change as project and broader environmental context change. Failing to recognize this evolving "territory" allows new "influencing flows," where no preparation for response has been considered.

Stakeholder Engagement Strategy Guidelines		
Influence	**Interest**	**Strategy**
High	**High**	**Manage Comprehensively and Continuously** Engage these stakeholders comprehensively and manage engagement and relationships continuously. Include in general program communications sent to broad stakeholder constituencies. Complement with targeted communications focused on their individual issues. Meet with regularly.
High	Low	**Satisfy** Respect degree of influence these stakeholders can bring to bear. Engage and build relationships so they may assist in areas where the program manager's control or influence is not sufficient in and of themselves. Include in regular program communications. Meet with periodically to establish relationship as an ally in case required in the future. Build trust and seek their counsel.
Low	**High**	**Keep Informed and Actively Listen** These stakeholders have significant ability to influence program schedule (execution efficiency) and emphasis should be on motivation. Include in regular program communications. Actively solicit program feedback, suggestions for improvement, and areas of concern for the program. Survey and solicit feedback on communication approach and effectiveness and adjust communication methodology based on feedback. Demonstrate what stakeholders are saying is being heard.
Low	Low	**Status** Include in regular program communications.

Like any program function, stakeholder engagement needs to be managed and driven by a well-defined strategy. Clear objectives must exist together with a timetable, budget, and allocation of responsibilities.

Good stakeholder engagement programs are characterized by:

- Timely and Comprehensive Information Disclosure
  - Factual information
  - Earliest possible disclosure
    - Understand timing related risks
  - Readily accessible
  - Respect for sensitive information
  - Structured to facilitate engagement
- Early and Ongoing Stakeholder Consultation
  - Founded on well-developed and well-communicated plan
  - Consultation well-defined
    - Purpose
    - Any pre-conditions for consultation
    - Affected stakeholders
  - Issues prioritized
  - Carefully selected engagement methodologies
  - Clearly identified responsible individuals in program and project levels
  - Document consultation process, actions, and feedback to stakeholders

Stakeholder Engagement Best Practices
Emphasis placed on those stakeholders most directly affected by the program or respective projects.
Early engagement fosters key issue identification and assessment of the impacts they could have on both overall program outcome achievement as well as project objective accomplishment.
Early dissemination of fact-based, comprehensible information.
Information context, language, and methods of display reflect appropriate cultural sensitivity.
Engagement is conducted as a two-way process, fostering exchange of information and views.
Active listening is practiced.
Gender inclusive approaches are utilized, reflecting different needs, concerns, and views.
Recognize that all communication is local; ensure to reflect local communication methodologies, language, context, and real or implied hierarchies.
Recognize a different "sense of time" may exist at each of the various program locations.

- Stakeholder Negotiation and Building of Partnerships
    - Well-defined framework for determining when negotiation is appropriate
    - Involvement of empowered representatives
    - Engagement free of intimidation
    - Agreement on key issues
    - Full disclosure of complete relevant information
    - Participatory not adversarial negotiation approach
    - Negotiating style focused on building partnerships
    - Sufficient time for decision-making
    - Sensitivity for cultural differences
    - Flexibility, consideration of multiple options
    - Commitment to compromise
    - Agreed to and documented outcomes
    - Establish basis for strategic partnerships
- Timely Concern or Conflict Management
    - Well-established process discussed with stakeholders before issues arise
    - Process formalized, documented, and communicated
    - Provisions for third-party involvement
    - Timely
    - Transparent
    - Documented and reported back to stakeholders
    - Preserve legal remedies
- Stakeholder Involvement in Program and Project Monitoring
    - Promote participatory monitoring of program activities related to key issue areas
    - Evaluate use of third-party monitors to add credibility to program actions
- Feedback to Stakeholders in the Principal Areas of Interest to Them
    - Pre-identified (and agreed to) information, format, and frequency
    - Report on overall stakeholder management program
    - Consider international standards for reporting stakeholder engagement

International Standards For Reporting Stakeholder Engagement
AA1000 Stakeholder Engagement Standard
Dow Jones Sustainability Index
FTSE4Good Index Series
Global Reporting Initiative (GRI)
Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises
SA 1000
UN Global Compact

Step 6 — Stakeholder Management

Responsibilities of the program manager in stakeholder management typically include:

- Overall program coordination and management.
- Cross-program engagement strategies.
- Emerging issues tracking, reporting, and strategy development.
- Mentoring, developing, and coaching project level contractors on stakeholder management
- Comprehensive stakeholder identification and identification of emerging and exiting stakeholders.
- Comprehensive issue identification and tracking of issues and concerns to identify emerging, migrating, and exiting issues and concerns.
- Relationship building with key program level stakeholders.
- Design and leadership of stakeholder communication and engagement programs.

Project level contractors complement the program manager-led effort by:

- Engaging with project level stakeholders.
  - based on an agreed strategy with the program manager.
  - consistent with apportioned responsibilities.
- Stakeholder and issue tracking at the project level.
- Implementing program strategies for stakeholder engagement and issues management among project level stakeholders

Stakeholder Engagement — A Focus on Influencing Flows

Large complex projects demand a different type of relationship and management approach to the broader, ever-changing stakeholder environment, which is acted upon *by* the project and which in turn acts *upon* the project. The disruptive effect of stakeholder-driven change is illustrated in the following two figures.

The first figure shows a sense of the normal transformational flows which a project experiences as it moves from early process design through to construction. For the purposes of this illustration, inter-task flows that require increased focus and emphasis in large complex projects have been eliminated.

Each task along the project chain is associated with more normal types of uncertainties that are regularly encountered, and the notion of a certain level of rework as being part of the regular project process is shown. The task-related activities shown are relational considerations rather than the sequential transformative steps one would expect.
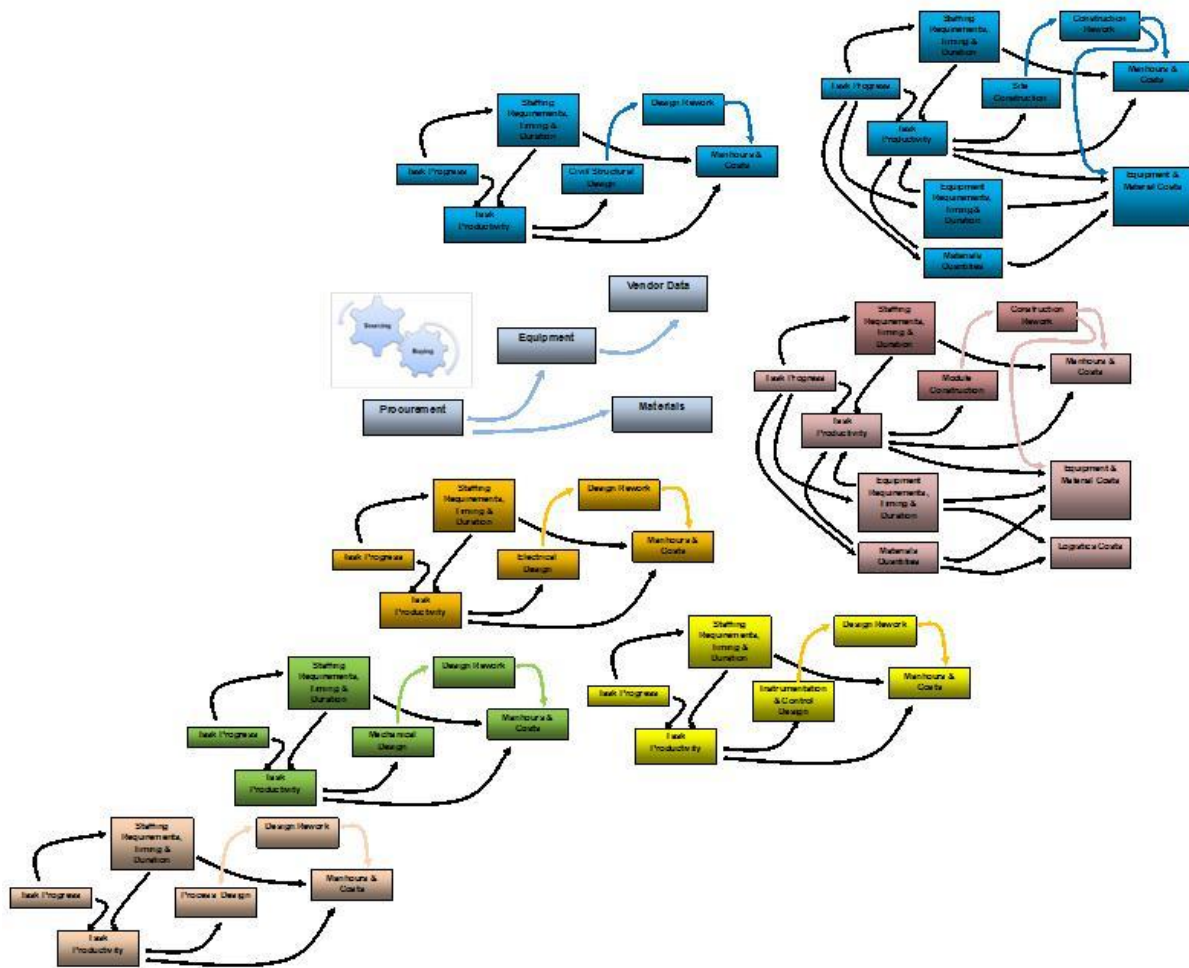
Simplified Flows in a Project without Shareholder Driven Disruption

Although extremely simplified, the figure above illustrates that a certain level of turbulence exists even in well-planned and executed tasks.

In the figure below (page 16), the impact of a process change driven by one or more stakeholders is shown. Affecting stakeholders could have been political, regulatory, or judicial in nature or alternatively the process change could have been driven by boards and investors as a result of changed market or financial circumstances. Irrespective of which stakeholder originated the change, its impact is significant as seen in the second figure. The particular change illustrated is shown to happen early in the project development process, but the impacts of the change cascade through the entirety of project execution.
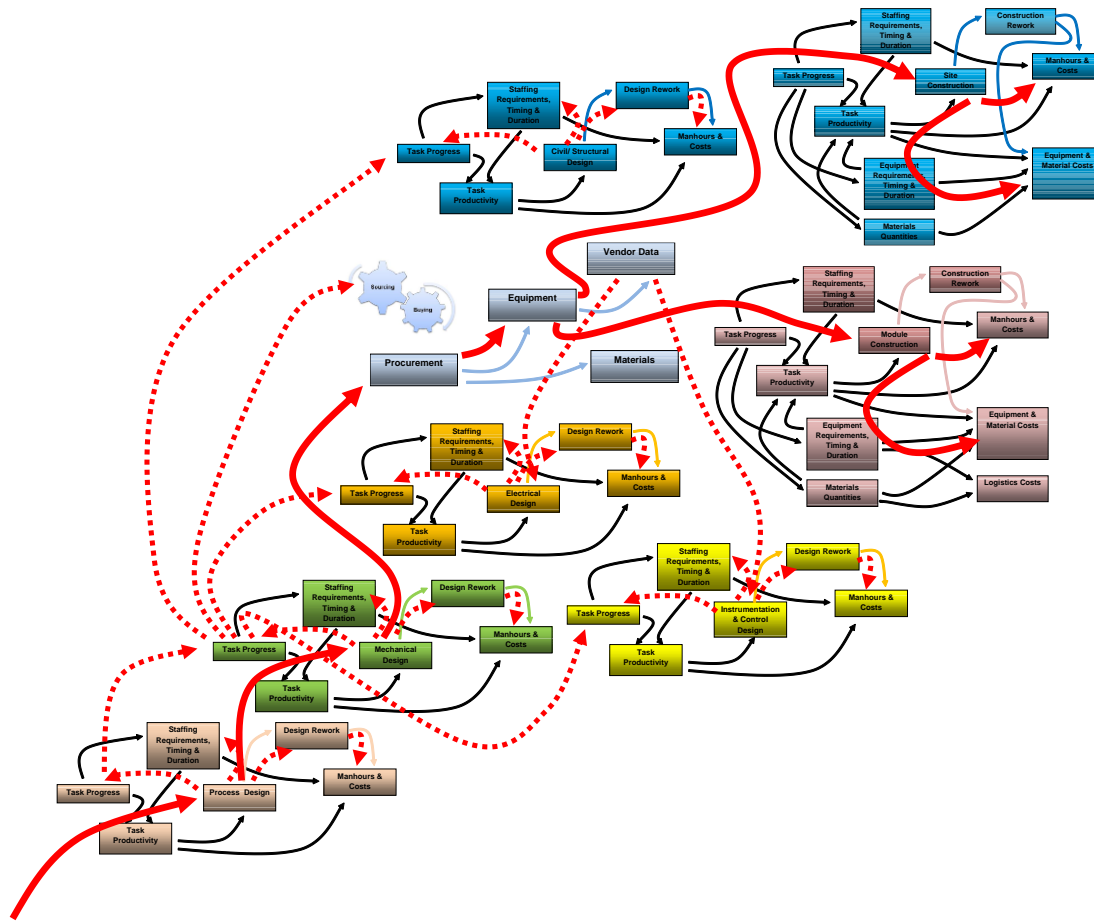
Stakeholder Driven Process Change

Cascading Disruption in a Project Experiencing Shareholder Driven Changes

Task level activities are reconfigured, delayed, or experience more extensive rework as a result of stakeholder-driven change. Such changes may happen at any point in the project development and execution process and a multitude of changes may arise from different stakeholder sources throughout the project. Addressing this significant disruptive risk requires a new approach to engaging the project stakeholder environment and a refocusing of efforts from merely identifying the impact of stakeholder-driven changes earlier on in the project's progress and forecasting likely impacts. Increasingly, large complex projects need a more outward and engaging focus together with new metrics targeted at potential drivers of change rather than earlier detection of negative trends.

- **Including the project itself as an *equal* actor in this complex ecosystem.** This is a key point as the project de facto commands no higher position than any other potential stakeholder. The illusion of preeminence or priority has degraded stakeholder relationships on many large complex projects with corresponding poor outcomes.

- **Comprised of a web of stakeholder-stakeholder relationships,** which are affected not only by changing binary wants, needs, and relationships, but also by the multiplicity of "tugs" from other parts of this complex web. Large complex projects that focus only on their binary stakeholder relationships are apt to be surprised when these relationships and agreements are "tugged." Even the best stakeholder maps need to recognize that "the map is not the territory."[1]
- **Complex, turbulent, and emergent in nature**. The very multiplicity of direct and indirect stakeholders associated with large complex projects is daunting at first glance but becomes even more so considering the range of external stakeholders acting upon each supplier, link, and flow in a global supply chain. Change is the norm in all human endeavors, unlike what Taylor and Gantt sought to achieve in their early management efforts in a repetitive industrial setting. This continuous, multi-directional, and ever-evolving set of changes results in turbulence in the broader ecosystem, of which the project is a part. This turbulence shapes the stakeholder ecosystem and drives that system to change. New patterns and relationships begin to emerge. This emergent behavior is a key characteristic of the stakeholder environment of which the project is a part. This emergence does not stop at the project boundary. It acts on the project as well.
- **Giving rise, from its inherent turbulence, to "influencing flows"** that shape the stakeholder ecosystem; drive it to a new and emergent state; and transverse the project boundary-shaping and impacting planned transformative flows within both project activities and tasks, and also the flows between these activities and tasks.
- **Observable and fungible, but only to the extent that program and project management become part of it** and understand its flows and patterns. Engaging the stakeholder ecosystem at least achieves earlier detection of new influencing flows and in some instances acts "in" this web of relationships to shift forces in more supportive ways. This leads to a new engagement construct focused on sentries, scouts, and ambassadors.
- **Requiring a more comprehensive assessment of project success "that takes into account the views of multiple stakeholders over multiple time frames."[2]** New measures are required to anticipate stakeholder perceptions of project actions and impacts. These new measures represent a key portion of an expanded set of control points focused externally to the project. Stakeholders throughout the full project life cycle must be considered since success or failure is often judged well after initial construction has been completed. Work on project success factor scales[3] has shown, however, the strongest correlations to be with:
  - Public stakeholder satisfaction
  - Contractor satisfaction
  - Supplier profitability

The influencing flows described above are observable but only when an aware program and project management team is looking for them. Project management today often focuses all its management

---

[1] Alfred Korzybski, who developed the field of general semantics
[2] Forecasting Success on Large Projects: Developing Reliable Scales to Predict Multiple Perspectives by Multiple Stakeholders Over Multiple Time Frames; Rodney Turner, Roxanne Zolin; 2012
[3] ibid

and project control efforts within the project context. Developing efforts in predictive analytics will reveal degrading performance earlier and likely quantify its impacts if not addressed. But both efforts fall short of what large complex projects demand, namely awareness and, where possible, influencing the drivers of change themselves. Take caution when looking in all the wrong places, which may further blind program and project management through assumptions that have been made at project outset and that are taken as a "constant."

Stakeholder management, as described previously, at least gets beyond the four corners of the project but still must focus on watching for, finding, and, where possible, modifying the influencing flows that will arise.

Sentries, Scouts, and Ambassadors

The nature of stakeholder engagement required by large complex projects requires three new management constructs: sentries, scouts and ambassadors. Although these roles are undertaken individually today, the degree of attention placed on them is inadequate for the level of stakeholder risks faced by large complex projects.

Sentries is a term used to describe a set of outward facing project management efforts that go well beyond environmental scans and stakeholder management. Sentries are on alert, constantly scanning the horizon for new influencing flows and any changes in direction or strength. By their nature, sentries will see such flows as they are approaching the project boundary, well before such influences have crossed the boundary and begun wreaking havoc on the project activities within. Looking for impacting changes arising external to the project is a significant first step. While some large complex projects do make efforts in this regard, they often suffer from two shortcomings:

1. Failing to post sentries continuously along the entire border of the project.
2. Being blinded by assumptions that cause notice not to be taken of the gradual migration of flows or, even worse, not even tracking influencing flows or changes in direction or strength.

Scouts help program and project management to become one with the territory and not merely a reader of maps. Scouts move about, observe, test, confirm, and pay attention to changes in the broader stakeholder ecosystem. They provide an earlier detection system as well as a feedback mechanism to allow management to plan for contingencies. Contingent execution represents an important capability in the management of large complex projects. Scouts allow contingency planning to translate from a purely academic exercise to one founded on observation and suspicion. Finally, scouts provide that over-the-horizon observational capability that sentries alone cannot. They offer hope in preparing the project to respond to upcoming changes driven by influencing flows rather than just recognizing the impacts of these flows after they have already affected the project.

Ambassadors represent existing stakeholder engagement efforts. These efforts are not sufficient in many cases. Ambassadors must:

- Move beyond a binary understanding of a binary relationship. They must understand all those acting upon the targeted stakeholder and the "regional" type issues this and other stakeholders face.
- Be part of the territory, not just be periodically passing through. They need to live, breathe, and feel the pains and anxieties of those affected by the project. In many ways they advocate not only *for the project* with sets of stakeholders, but also *for the stakeholders* with the project. This duality of roles requires a level of organizational and management maturity and is associated with a high level of owner readiness and a long-term commitment to the project's setting and performance.

Together, sentries, scouts, and ambassadors provide a significant shift in project control efforts from primarily internal ones, underpinned by the notion of a bounded project associated with classical project management theory to a more balanced internal and external focus reflecting the semi-permeable project boundary that is observed on large complex projects.

Emerging Actors and Non-Networked Agents

It may be tempting when considering both internal and external project actors to think in terms of complex adaptive systems theory.[4] While this does well in describing many internal project activities and response to changes, it falls short when a multiplicity of influencing flows arise simultaneously or when these flows interact with planned transformational flows, creating new "induced flows" within the project context. Knowledge flows in a networked multi-agent setting struggle to keep pace with change. Here is where earlier awareness derived from scouts and sentries facilitate contingency planning and better prepare the project to respond and adapt.

With respect to the external stakeholder ecosystem, the story is much different. Closer examination may lead to two or more independent networks, breaking down the networked notion of complex adaptive systems theory. Additionally, new non-networked agents may emerge with highly self-centered and non-networked agendas. These non-networked agents have a highly disruptive effect not only on the project but also on the entire stakeholder web.

Stakeholder engagement and adoption of new and expanded management constructs (sentries, scouts, and ambassadors) that complement internal project management and control efforts are not optional

---

[4] Complex Adaptive Systems Theory; An Introduction to the Basic Theory and Concepts; John Cleveland; Innovation Network for Communities; March 1994; revised November 2005

on large complex projects, but essential and must be continuously applied for program and project success. Stakeholder management is a continuous and evolving process, not a one-and-done approach.

Reference

Prieto, Robert. *Theory of Management of Large Complex Projects*; Construction Management Association of America; ISBN 580-0-111776-07-9; 2015.

About the Author

Bob Prieto was elected to the National Academy of Construction in 2011. He is a senior executive who is effective in shaping and executing business strategy and a recognized leader within the infrastructure, engineering, and construction industries.