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Goals and Definition

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Abstract

Starting a development project well contributes greatly to its ultimate success. Key to a good start is recognizing issues that are important and establishing thoughtful policy positions on them that will guide the successive stages of development. Issue-based project definition in Structured Planning uses Defining Statement documents to study issues in depth. Each Defining Statement consists of a single page with a Question at Issue, the Position to be taken, other positions considered, and Background and Arguments supporting the position taken.

Of special note is the use for Positions of three kinds of goal statements, each, by definition, decreasing in force of commitment. ***Constraints*** must *be achieved if at all possible.* ***Objectives*** should *be attempted and achieved if practicable.* ***Directives*** ought to be *achieved, but are recognized as preferences to be observed as appropriate. Clarifying the intention of goals opens the planning process to greater trust and understanding.*

This article is about getting started on a development project. In a way, it is about problem finding. In particular, it is about deciding what is of concern and what is not, and what aspects of policy are important in setting a course toward a plan.

But before I get into that, I have to get something off my chest. It is becoming a real peeve, but it is highly relevant to this article and so worth talking about up front.

Issues vs Problems

The peeve is about the misuse of the word "issue". Issues are *not* problems, but in today's casual use of language, we hear everywhere—from ordinary street conversations to erudite news pronouncements—about people "having issues", "solving issues", "suffering from issues" and routinely treating the words *issue* and *problem* as interchangeable. Problems are *not* issues, and we lose an important distinction when we treat them as if they were.

A problem is an obstacle, an impediment, something to avoid, solve, eliminate or otherwise remove on the way to achieving a goal. Problems are uniformly "bad" in that they confront us with something we want to overcome.

Issues are more neutral. They are like forks in the road where a decision must be made that will take the decision maker one way or another. Issues usually are at a deeper level than problems. "Taking a position" on an issue establishes policy that will determine which problems at a shallower level will appear and how they will be solved. We "take issue" with policy when we think that it reflects a wrong turn on an underlying issue. We look for the way to express "questions at issue" most appropriately when we are trying to pin down the fundamental concerns of a project.

To raise problems to the level of issues is to risk failing to address high-level concerns at the critical early phases of a project. Issues should be sought out as policy guide posts, considered thoughtfully for the alternative paths they present, and recognized for the high-level contributions they make to the form that the plan ultimately will take. Taking positions on issues is one of the first acts of planning. Deciding to go one way rather than another begins the design process.

Issue-based Project Definition

Issues as a focus in project definition has strong foundations in work done at Berkeley, California and Heidelberg, Germany in the 1970's. Under Prof. Horst Rittel of U.C. Berkeley and Werner Kunz of the Studiengruppe für Systemforschung, the concept of IBIS (Issue Based Information Systems) was developed as a means for interactively studying differences and evolving views among stakeholders in a project. From their work, I adopted in Structured Planning the concept of issues as fruitful subjects of research and study at the earliest stages of a project.

From a Charter initiating a project (usually formulated by those with the authority to assemble resources—perhaps, a

Metaplanning department or group as discussed in my article "Reforming the Development Process"), a planning team obtains background, goals, initial direction, methodology and some of the key issues to be considered immediately.

Issues are expressed as a topic and a "question at issue". Over many projects, we have found that anything less simply produces questions anyway; a topic only isolates a potentially troublesome area—it doesn't suggest where the trouble may be. For example, on a project we did for NASA before the Challenger disaster, ***cost*** was the topic of an issue. Without further information, there was little to go on. Obviously, cost should be minimized, or so it would seem; Congress was not in a spending mood. In fact, however, that interpretation would have been shallow to the point of incompetence. A *Question at Issue* was added: "How should the cost of the space station be treated in terms of its impact on design strategy?" Over the course of investigation, that led to a ***Position*** on the issue:

Defining Statement

Issue Topic: *Short title for topic:* **Cost** | *Number identifier* **17**

Project
Name of the project: **Space Station**

Originator
Original producer (sponsor) of this document: **J. Montague**

Contributors
Contributors of additions and/or changes

5 September, 1985 **J. Nielsen**
6 September, 1985 **B. Dickinson**
11 October, 1985 **C. Owen**

Source/s
*If references are used, give complete information. Use **The Chicago Manual of Style** for format.*

Examples:
Financial Models for Large Projects. In **New Economic Planning.** New York: Business/Government Press , 1983.

Johns, R. *Space Station: How Much?* **NASA Review** 8, No. 3 (May 1985): 7-9.

Meeting with Jay Cory 8/30/1985.

If there are no references, use:
Team deliberations.

Question at Issue *Question raising an issue that requires a position.*

How should the cost of the Space Station be treated in terms of its impact on design strategy?

Position
*Position to be taken on the issue. Use **must** for constraints, **should** for objectives, **ought to** for directives. Designation of* **Constraint**, **Objective** *or* **Directive** *establishes force to be accorded the Position.*

(●) **Constraint** ( ) **Objective** ( ) **Directive** — Cost must be treated as total cost (vs. initial cost) to accommodate planning for unforeseen problems and opportunities.

Alternative Positions
*Other plausible positions. Should be arguable and may have resulted from discussion or debate within the team. Should also be clearly inferior to the selected position on the basis of the background and arguments presented. State the alternative positions in a form equivalent to the selected position (using **must, should** or **ought to**).*

(●) **Constraint** ( ) **Objective** ( ) **Directive** — Costs must be what is minimally required to put a station in orbit. Follow-on projects should await successful demonstration.

( ) **Constraint** (●) **Objective** ( ) **Directive** — Project costs should be allocated to phases with each phase's targets designed to attract and support further spending.

Background and Arguments
Background material and arguments that explain and defend the position taken on the issue. For a Defining Statement to be useful, something must be at issue, and there must be more than one plausible position that could be taken. The material in this section should show clearly why the chosen position is superior to the alternative positions.

The sheer size of any projected space station as well as its necessarily large cost means that any budget will be severely scrutinized by Congress (Cory 8/30/1985). Competing projects and the general sensitivity of Congress to public concerns about governmental spending demand that the budget be not only thoroughly defendable but also justifiable in terms of a well-reasoned design and construction philosophy (Johns 1985, 27).

Large projects usually are expected to have long enough lifetimes to be productive in return on investment. In the case of the Space Station, its lifetime will last well into the 21st century. To remain productive, however, a space station—unlike many other large projects—will have to adapt frequently and, perhaps, massively to new technologies. This means that, as a fraction of total cost, initial costs may be relatively low—depending on how well the systems are designed to be adaptive. A station designed without regard for adaptation may be a bargain initially, but will cost considerably more over its lifetime if (as is highly likely) major changes have to be made, and they cannot be made easily (New Economic Planning 1983, 133-134).

Projects expected to evolve over time—especially those (like Space Station) in which the directions of evolution are uncertain—are best served with a design and construction philosophy that maximizes the potential for adaptation. This means that more time, effort and money must be spent considering how elements of the system can be used in multiple ways and how configurations can be changed readily to accommodate new components, processes and missions. Extra funding spent early under this design philosophy will reduce funding that will inevitably be spent later to make difficult changes. Overall, total costs, with the unplanned costs of future changes, will be lower under a policy that anticipates change and plans for it in the beginning.

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"Cost must be treated as *total cost* (rather than initial cost) in order to accommodate planning for unforeseen problems and opportunities". In the process of argument and discussion, it became very clear that a low initial-cost approach (cost to the stage where space station would be operable) would save money initially, but cost more in the long run as space station had to be modified and refit for uses unplanned decades earlier. A design strategy that maximized adaptability would cost more initially, but save money substantially over the life of the space station.

Defining Statements

Issue-based project definition has evolved in Structured Planning to the use of single-page *Defining Statement* documents to highlight important issues, lay out plausible positions, argue their merits and make the cases for the positions to be taken. In their self-contained form, Defining Statements become little "white papers", concise, to the point, and easy to grasp. A sample Defining Statement (the cost example for NASA) is shown in Figure 1.

Among the subtleties of wording and semantics that have emerged, is a convention that has special value for thinking about policy and goals. Most projects have in their formulations some expression of goals or objectives. Often these are a mix of a few well-focused statements targeting desired goals and boiler-plate statements that reaffirm the organization's commitment to good works. If the goal statements get close to touchy subjects, they may become casualties to the difficulty of negotiating agreement between management (as project initiator) and planning team on sensitive subjects. In that case, goals may become weak compromises or even no-shows—no one wants to commit to a goal that may be difficult or impossible to achieve.

There are also goals (usually held by the planning team) that fit under the "hidden agenda" category—biases or styles of solution that are unexpressed personal preferences of one or more planning team members. A not-so-hidden, directly observable example of this "personal preference" is often seen in architectural planning, where the architectural firm has a strong, highly visible style. The firms of Mies van der Rohe or Frank Gehry are good examples. In these cases, the "bias" goal for a particular visual style is above board, expressed in the long record of buildings the companies have produced. You wouldn't go to either of those firms if you did not want their biased style as an expressed goal. The problem comes when the biases are not so readily visible and not put on the table. Such biases may take many forms.

In either of these cases, goal statements are likely to be watered down, vague, misleading or simply missing, and the project will suffer from the beginning with a failure of trust that may lead to further failures, most especially if results do not measure up to expectations through misunderstanding and the surprises of hidden agendas.

In the Defining Statement document, goal statements are differentiated in three categories to deal with these problems. Each category has its own form of expression with an imperative verb or verb phrase to distinguish it from the others and a "force" of compliance agreed upon by definition.

At the top of the force scale is the ***Constraint***. By agreement, a Constraint is a goal that must be achieved at all reasonable cost. The word *must* implies as much and is the operable imperative verb. Goals given as constraints must, by mutual agreement, be achieved if at all possible.

Next in force is the ***Objective***. Here, the operable verb is "should" and the force is less. Having a goal statement type with this agreed upon force makes it possible for a planning team to "shoot for the moon" but be happy to at least make orbit. The majority of goal statements will be objectives; as an agreed-upon type, the objective brings goals out of the closet. It becomes possible to state that a goal is desirable even though it may be difficult to achieve. This clears the air and builds trust between authority and planning team. Everyone knows that the planning team will attempt the goal, but it won't be held against them if the achievement is less than complete.

Finally, at a relative low level of force is the ***Directive***. The Directive exists to bring biases and special agendas to the surface. Its operable verb phrase is "ought to", a phrase with almost moral or ethical authority, appropriate for expressing a goal that may not be necessary in the sense that a Constraint expresses, but is desirable from an individual or group point of view. Biases, once on the table, become less personal

and far less formidable. They can often be accepted or modified into genuinely valuable strategies agreeable to all.

The ***Position*** on the issue, of course, is the essence of the Defining Statement. It lays down the direction to be taken on the issue and, with the other positions on issues, actually begins the planning/design process. But there is more. The format of Defining Statements as documents allows the "rest of the story" to be told with the Alternative Positions that were considered (but not selected) and the reasoning—often insightful—that led to the selection. In sum, the Defining Statement documents become the first contributions to a project "knowledge base" that will make the project historically transparent and of value to future projects that might cover similar ground.

At the end of a Project Definition phase, a planning team may have assembled a surprising number of Defining Statements. Twenty to thirty are not uncommon, but we have seen over fifty on some projects. Because they deal with issues, they are properly at the front of the planning process. Because they bring refined understanding of the project's goals, they are excellent subjects for review at the first gateway, when the initiating authority needs assurance that the project is on track and that there is understanding and agreement concerning intentions.