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Workplan Development

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1.0 Introduction

More software projects have gone awry for lack of calendar time than for all other causes combined. Why is this cause of disaster so common?

First, our techniques of estimating are poorly developed. More seriously, they reflect an unvoiced assumption which is quite untrue, i.e., that all will go well.

Second, our estimating techniques fallaciously confuse effort with progress, hiding the assumption that men and months are interchangeable.

Third, because we are uncertain of our estimates, software managers often lack the courteous stubbornness of Antoine's chef.¹

Fourth, schedule progress is poorly monitored. Techniques proven and routine in other engineering disciplines are considered radical innovations in software engineering.

Fifth, when schedule slippage is recognized, the natural (and traditional) response is to add manpower. Like dousing a fire with gasoline, this makes matters worse, much worse.²

Enterprise database is developed through project plans that commonly employ work breakdown structures (WBS). A quality WBS involves six components. These are:

- ! WvBS, that is, the activities to be performed
- ! WnBS, that is, the products to be delivered
- ! PERT chart, a network chart showing precedence

¹ Written on the menu at Antoine's in New Orleans: "Good cooking takes time. If you are made to wait, it is to serve you better, and to please you." From Frederick P. Brooks, Jr., *The Mythical Man-Month*. Reading, MA: Addison-Wesley, 1975, page 13.

² Ibid, page 14.



- ! Unit effort estimates
- ! Factors affecting unit effort estimates
- ! Experience feedback cycles

2.0 Understanding WBSs

The term *work breakdown structure* is commonly employed in projects. Its first word, *work*, if not understood by all, can lead to significant confusion. Within the U. S. Department of Defense community, the word *work* is a noun. Thus, the term work breakdown structure implies a hierarchical decomposition of the actual product being delivered.

In data processing, the term work breakdown structure is also commonly employed in projects, but it is used as a verb! Thus, in DP, the term work breakdown structure implies a hierarchical breakdown of the activities.

The misunderstanding is not so bad, however, because in the continuous flow model in Figure

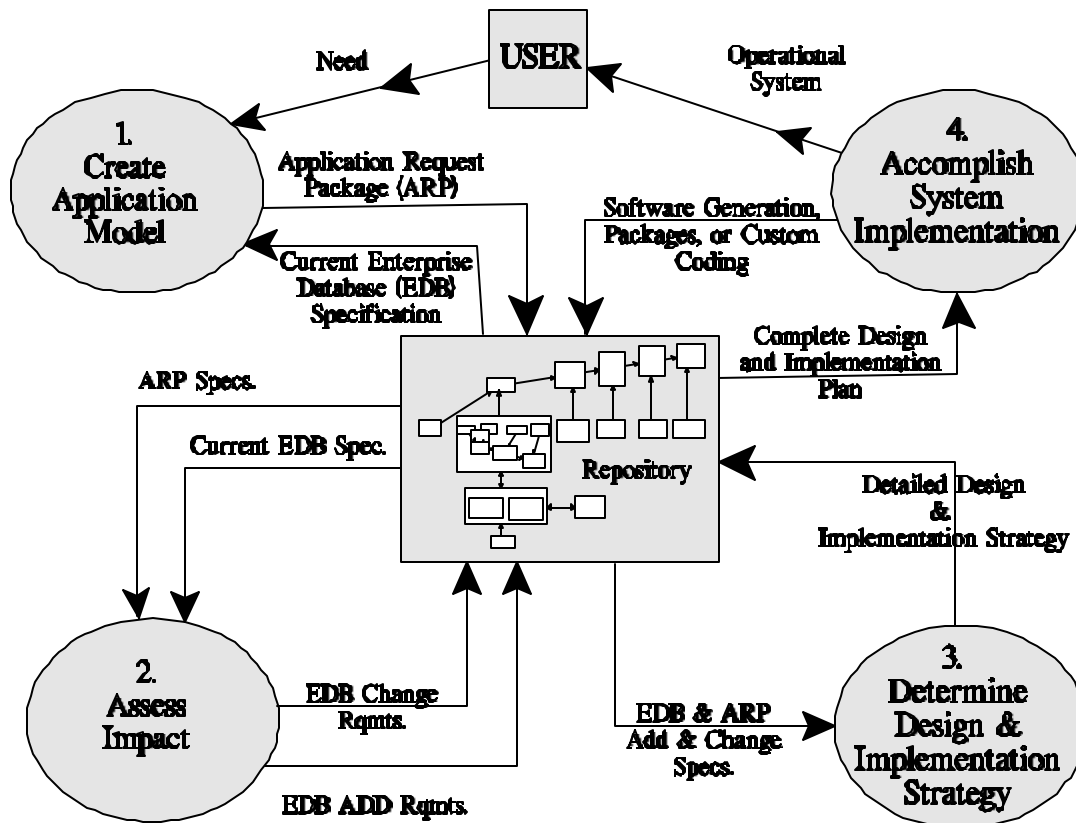


Figure 1. Continuous Flow Environment



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1, both types (verbs and nouns) are employed. The phrases that comprise the process bubbles are verbs, the set of WvBS. In the repository, the storage location of the products of an MIS project, the breakdown is really a WnBS. While the two are not the same, they are definitely related, for example, *Plan the Project* and *Project Plan*.

There is, therefore, a strong correlation between activity lists (WvBS) and product lists (WnBS). Not surprisingly, if one project's product list is different from another project's product list, the two activity lists are also likely to be different. This leads to the conclusion that since there are different and valid product lists (WnBS), there must also be different and valid methodologies (WvBS). The appropriate pairing of a WnBS with an appropriate WvBS is given this notation: Wn&vBS.

For any particular project, then, if its product list is fundamentally different from that of another project, the methodologies must also be different.

In addition to pairing appropriate sets of Wn&vBS for specific projects, multiple customers may require, for example, MISs in different subject areas. For example, one may have a MIS project for Government Grant and Loan Accounting. Another may have a MIS project for Program, Planning, and Budgeting (PPBS). While both projects are MISs, and both could have been developed through the same database project methodology, each would want to see *their own personalized* work plan. A Wn&vBS needed to be developed for each customer, that is, one for the Grants MIS and another for the PPBS customer. While the customers may be satisfied, a contractor performing the work will appear to have undertaken very different projects when, in fact, the structure and format of the real work products and the methodology employed are essentially the same. Lost from the contractor will be any internal attempt to measure work accomplishment or performance across MIS projects, and any benefits from common training, use of a multiple-project repository, and the like.

These losses can be avoided if the contractor first has its own Wn&vBS for MISs. From this internal MIS Wn&vBS, the contractor can build relationships between its own Wn&vBS and that of the customer. Figure 2 presents a diagram that portrays such a set of relationships. Such an arrangement permits contractor methodologies to be evaluated, improved, and audited over many years and against many projects.



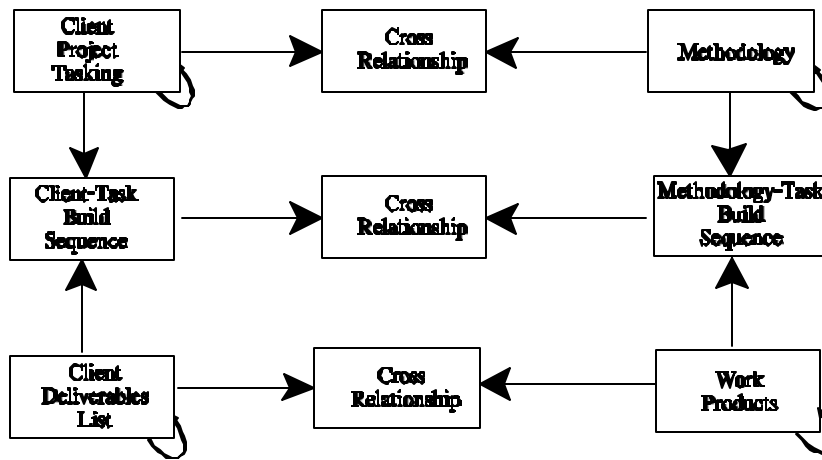


Figure 2. Interrelationship between WnBS and WvBS

