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http://www.vtt.fi/rte/ce/yhteystiedot/kotisivu_lauri.html

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Introduction

The following thoughtful commentary on the original paper "[First Principles of Project Management](#)" presented on this site in November 2000, makes interesting reading and useful suggestions for improvement. Many of the comments derive from work done in preparing the authors' paper "[The Underlying Theory of Project Management is Obsolete](#)" presented to the Project Management's Research Conference in 2002.^[1]

Why are First Principles/Theories Needed?

The reason given in the paper why principles are needed is that corporate management and project management are different and especially that these first principles *explain* why a margin of surplus is needed in projects. Also, in the paper's Introduction, it suggests that the proposed principles would provide a universal *reference basis* for a set of practices.

We agree with both of these types of reason, explanation and basis for tools and practices. However, we see the need for an explicit theory of project management arising also from several other arguments, as discussed in our paper to the Research Conference. One outstanding benefit of having a theory is that its validity can be checked and discussed. Another benefit is that a theory makes it much easier to teach and learn the subject. The learning science has found that experts organize their knowledge around big ideas - conceptualizations and/or theories, if such exist. Thus, providing theories to students pushes them along the (initial) step towards expertise.

First Principles vs. Theories

We prefer theories to first principles, understanding that theories contain principles, both first and secondary, but also concepts. Before we can formulate any fundamental principle, we must have or must select concepts, which we can use in its formulation. The "big idea" or conceptualization comes first, principles second. For example, if we view projects as transformation, we can next subscribe to the first principle of that conceptualization, namely the decomposition of the total transformation into sub-transformations and finally into assignable transformations, tasks. To us, this first principle is described in Wideman's Introduction.

To us, the first principles identified in Wideman's paper are rather critical success factors, taking into account that (1) in the Discussion section, on Issue #2 it is stated: "The key criterion is thought to be whether or not the principle is universally fundamental to project success as defined." and (2) there is no prior conceptualization for formulating such principles. One of the two most important functions of a theory is explanation (the other is prediction), and unfortunately critical success factors do generally not provide such an explanation.

Another problem is that it should not be necessary to start from scratch. Project management is a special type of operations management although others see it rather as a special type of organization theory or of management. If this is the case, then we can use theories developed in the framework of operations/production management, or other fields, provided that they fit the situation in projects. In our paper, we endeavored to show that the underlying theories of project management can easily be found from the theory arsenal of related fields.

What Subjects Should Theory of Project Management Cover?

The first principles (FP) in the Wideman paper seem to cover the following:

- Relationship between Customer and Supplier (FP 1)
- Assessing success, i.e. performance measurement (FP 2)
- Characteristics of plans (FP 3)
- Planning (FP 4)
- Execution and control (FP 5)
- Responsibility for sponsor decision-making (FP 6)
- Organizing for cultural environment (FP 7).

In addition, the paper contains following statements with theoretical dimensions:

- Decomposability of projects (in Introduction)
- Assumptions about cultural ambience (under title "First Principles of Project management)
- Projects needing a margin of surplus
- Recognition that every project "evolves" through its life cycle
- Belief that the ultimate goal of a project should be satisfaction with the product on part of the customer

Five of the seven first principles more or less overlap with the theories of project management as defined in our paper. Correspondence with "planning", "execution" and "control" is clear. We cover the relationship between customer and supplier under "execution", but maybe focus more on the task level. Assessing success, through satisfaction, we cover under "project theories". And, we cover organizing for cultural environment under "planning". The remaining two first principles deal with issues of planning and organization of decision-making in the case of re-planning.

Looked at another way, Wideman's first principles do not explicitly cover the theories of project, even if there are implicit statements on this, giving one to understand that

1. Projects consist of decomposable substance (transformation is the only such decomposable substance we know)
2. Projects are about satisfying the customer (to us, this is the value-generation view)
3. Because the world is uncertain, projects need a margin of surplus (this, need for slack capacity or duration, can be explained by the flow view on projects).

Reflections

Positively enough, there is a considerable degree of unanimity between us regarding the scope of fundamentals or theories of project management. And Wideman's principles pinpoint new areas to be covered by future theories of project management, for example regarding the relation between the sponsor of the project and the project team. However, Wideman's principles should explicitly cover the nature of projects.

Interpretation of and Reflections on the First Principles

1. The Commitment Principle

Interpretation: We see this to be in the same area as Winograd's and Flores' language/action perspective, which, among other things, is concerned with how commitment evolves. Also the conceptualization is the same: the provider of resources and the supplier, here termed "project delivery team". However, we must always distinguish between commitment as a state of desire i.e. "I am committed to the success of this project", from commitment as an explicit promise for action i.e. "I will do thus and so."

Reflections: The interesting thing here is how commitment evolves, which is not explained.

2. The Success Principle

Interpretation: This principle says, in essence, that to be able to assess the success of the project, the value the customer wants from the project must be defined. This is in the same domain as the value generation model of production/operations.

Reflections: As stated in Wideman's Discussion section, every project evolves through its life cycle. The customer's sense-making proceeds further during the project. Thus, we doubt whether

it is possible to solidly fix the success criteria in advance (indeed, the paper says that success criteria can change with time). Rather, what the customer values must be investigated for the needs of the project itself. Further we know that ends cannot be finally fixed without exploring means. Project success is not determined by delivering what the client said they wanted out the outset, rather from assuring that what is delivered meets their expectations and desires at the end. We can all point to projects that came in on time and budget to prescribed quality and yet were disasters.

3. The Tetrad Trade-off Principle

Interpretation: This principle is essentially about the feasibility and integrity of the project plan.

Reflections: Saying that the goal variables should be mutually consistent is not enough. As long as physical laws are not violated, their consistency depends on how good the solutions are that are applied. Current views of this tradeoff suggest there is some fixed sum that is being shared between objectives. We know that by reducing variation in workflow, the level at which the trade-off between cost and schedule must be made can be elevated, and we have seen improved quality at the same time. We are unwilling to gloss over and accept this principle without more careful examination.

4. The Strategy Principle

Interpretation: This principle is about planning as a prerequisite to doing. As presented, these ideas are closer to management-as-planning, which we criticize in our paper.

Reflections: Alternatives to management-as-planning are not considered.

5. The Management Principle

Interpretation: This is about execution and control. The "thermostat control" analogy is evident here.

Reflections: Alternatives to thermostat-type control are not studied and nothing precise is said about execution.

6. The Single-Point Responsibility Principle

Interpretation: We see this as relating closely to (or derived from) principle #3. The integrity of the project plan can be maintained only if one agent is making decisions on the scope etc.

Reflections: This is acceptable as a principle. It is also tied to the belief that one person must be in charge of managing the project delivery process. The implications of this should be explored.

7. The Cultural Environment Principle

Interpretation: This falls into the domain of management or organization theory.

Reflections: Management-as-organizing deals with these questions but the associated idea of decentralized management is not discussed in the paper. It should also consider the mood of the team. If we use the definition of culture as: "The way we do things around here", then management-as-planning leads to a hierarchical culture, and organization and motivating workers becomes a central concern when they are separated from those who plan. In management-as-organizing, we see a distributed decision making system where commitment (to explicit deliveries) leads us to consider both the mood and the ability of people to do what they say. We do not need to motivate people who make good promises.

In summary: We argue that part of the first principles represent underlying, conventional theory and part points to newer theory, but should be made more clear. In particular, the transformation and flow approaches are not explicitly covered by the first principles - we think they should be

Metaphysical Issues

We consider Wideman's recognition that every project "evolves" through its life cycle as an extremely important metaphysical assumption, and claim that the PMBOK Guide fails in dealing with it. This was not systematically discussed in our original paper, but we are working on this.

Much of current espoused practice seems to be based on a belief that the world can be modeled far in advance and in great detail by skilled planners. This is a Cartesian approach that doesn't hold up in the face of our "first postulate", i.e. that the future is uncertain and unknowable but can be shaped by our actions.

We think we need a project management system that has a very different relationship with uncertainty. In current practice, uncertainty appears to result in change - as if the plan was "correct" and "change" is bad or to be avoided. We cannot model the future in great detail but we can learn as we move into it what is more valuable for clients and effective for suppliers.

Donald Schon has suggested that practitioners know more than they can express. And most are very aware that current practices, particularly planning and control techniques, are problematic. In particular, this leads us to optimize locally at the expense of the project. This in turn leads to tremendously adversarial relations that we then try to manage around with team building and leadership.

We suspect the PMBOK is the normative practice, what people think is right - even if they cannot make it work without doing other things. So, we believe the PMBOK rests on an unsupportable world view.

Howell relates the following story: "I also remember some early work with Alex Laufer where we visited with the best project managers we could find in a number of solid companies. We ask for "old reliable", the person who got the tough projects. We spent several days with each to see how they planned. In every case, they said, "I don't do it right" and tried to refer us to the planning department with the big computers. We stuck with them and eventually observed to one, "you spend a lot of time coping with uncertainty." He almost kissed us. Then Laufer asked:

"How do you do that?" and he had no answer. We observed for a while and came to believe that the good ones narrowed, divided and absorbed uncertainty into their decisions."

Now we are convinced that practitioners are ready for words that describe what they really do and concepts that provide a coherent and teachable explanation for those actions. The job of academics is to observe the patterns, name them most typically with terms drawn from other spheres of work, and then make the connections.

Overall Conclusions

The reading of the "[First Principles of Project Management](#)" paper was extraordinarily stimulating. The subject area that we have treated had been approached from another angle. However, after digging away the superficially different layers, much of a common core could be unearthed. A number of ideas for extending our own theory emerged from the paper. We may disagree with some points in the paper, and propose alternative approaches or conceptualizations for many other points, but we do agree with Wideman on the significance of project management theories and/or principles.

We appreciate the opportunity to offer our perspective and make these comments.