

: *What is adaptive planning?*

by Daniel J. Power

Editor, DSSResources.COM

Adaptive planning is a process and theory for coping with change and complexity. Adaptive planning ideas have been applied and discussed in multiple disciplines. Agile planning is one form of adaptive planning. In an agile environment, planning occurs frequently in project teams and at broader organization levels. Rolling waves of planning occur as a project or task progresses and as details become clearer. Activities and tasks are timeboxed and completed in discreet chunks. Finally, managers assess task complexity and estimate task effort. Adaptive planning is a human process that can perhaps be imitated or assisted using software-based decision and planning support. Adaptive planning is the ability to plan forward but altering the pLan as circumstances change.

Adaptive planning has somewhat different meanings in various disciplines including marketing, project management, urban planning, strategic planning, and automated planning (Alterman, 1988). Alterman (1988) defines adaptive planning as "an approach to planning in the commonsense domain." He notes "an adaptive planner takes advantage of the habitual nature of many of the planning situations for which it plans by basing its activities on a memory of pre-stored plans". He discusses a computer program called PLEXUS that attempts to model and replicate the theory of adaptive planning.

In a project management context, adaptive planning is a process and "capability to create and revise plans rapidly and systematically, as circumstances require." Adaptive Planning is a useful skill in an agile environment. Agile teams should produce and maintain an evolving plan, from initiation to closure, based upon goals, values, risks, constraints, stakeholder feedback, and a review of outcomes. Adaptive planning is agile planning and time boxing.

Adaptive Planning refers to planning and execution performed multiple times and for small slices or segments of a project. The subsequent planning activities take inputs from the previous slice of product delivered. The process continues until the project is completed and is essentially an empirical process. Decisions are made based on observation and experimentation rather than based on detailed upfront planning. Empirical process control relies on the three main ideas of transparency, inspection, and adaptation, cf., ScrumStudy.com.

Planning occurs at multiple levels within an organization. At the strategic, long term planning level both forecast-driven and adaptive, iterative planning is useful. At the project management level, some formal, structured planning is required to determine project teams, overall project goals, and broad resource allocations. During a project, the project team should generally use adaptive

: *What is adaptive planning?*

planning.

In general, adaptive planning is an iterative process framework for organizing information flows, analyses, and special studies, facts, and opinions into decisions. There are four general stages commonly associated with this process:

- 1) Situation Assessment — the analysis of internal and environmental factors that influence business performance, combined with a comparison of past performance relative to objectives and expectations,
- 2) Strategic Thinking — identification of key issues that have a major impact on performance and the generation of creative strategic options for dealing with each issue,
- 3) Decision making — the selection of strategic thrust, choices of options, and allocation of resources in light of mutually acceptable objectives, and
- 4) Implementation — ongoing activities that translate strategic decisions into specific programs, projects, and near-term functional action plans.

The process is iterative because the implementation phase will eventually be followed by a revised situation assessment, cf., AMA Dictionary.

Adaptive planning should begin with an overriding objective or vision statement that defines the purpose and value of the activity, new product, project or initiative. Although agile projects are not solely "plan-driven", planning is an important activity and projects must be planned at multiple levels, including the strategic and iteration level. In adaptive, rolling wave planning (the progressive elaboration method), the plan evolves as the project progresses. The plan is continuously modified, detailed, and improved as newer and improved information becomes available to the project management team. "In this method, projects are kicked off with limited available information, which is used to create a high-level plan and estimates. As details emerge later in the project, plans and estimates are constantly revised to ensure they remain valid and current, cf., PMI ACP.

Often a key component of agile planning is creating a product or project backlog. A backlog is a list of all things that need to be done as part of the project, i.e., a prioritized features list, containing short descriptions of all functionality desired in the product. These items can have a technical nature or can be user-centric e.g. in the form of user stories. A typical Scrum backlog comprises the following different types of items: Features, Bugs, Technical work, and Knowledge acquisition. Example user stories "As a site visitor, I can read current news on the home page." "As a site editor, I can maintain an FAQ section." "As a site editor, I want to have a prominent area on the home page where I can put special announcements, not necessarily news or articles." See more at <https://www.mountaingoatsoftware.com/agile/scrum/scrum-tools/product-backlog/example>.

Agile planning requires time boxes, chunks of work performed for a finite period of time. Timeboxing means setting a fixed time limit for an activity or backlog item. A key principle is that the fixed time limit cannot be exceeded. Activities that are scheduled in a timebox, but are not completed or in

: *What is adaptive planning?*

some cases started are rescheduled to a later sprint planning period. A timebox can be set for any duration, but generally, all timeboxes or sprints for a project are of the same duration (PMI ACP).

Warner (2005) explains "Evolving projects that face changing conditions are best suited for adaptive planning. Adaptive planning involves breaking a project into small components over an undetermined timeline to allow ultimate flexibility in directing the course of the project."

Predictive planning for traditional plan-driven projects and strategies is sometimes appropriate, but freezing goals and requirements for an entire project or a long planning horizon is increasingly challenging and inappropriate. Adaptive planning starts with a general direction and then feedback from results is used to incrementally alter and refine plans. Also, the backlog of needs and requirements is updated. Computerized decision support and analytics can assist with adaptive planning.

Science fiction author Robert A. Heinlein offered some advice about planning and decision making. He writes ask "What are the facts? Again and again and again – what are the facts? Shun wishful thinking, ignore divine revelation, forget what 'the stars foretell,' avoid opinion, care not what the neighbors think, never mind the unguessable 'verdict of history' – what are the facts, and to how many decimal places? You pilot always into an unknown future; facts are your single clue. Get the facts!"

In both routine and novel situations, people must adapt. Planning and thinking often help people adapt prior responses to new uses or purposes. Adaptive planning attempts to explain and describe how we adapt and how we can improve our actions. Adaptive planning increases predictability in an agile environment.

References

Alterman, R., "Adaptive Planning," *Cognitive Science*, Vol. 12, 1988, pp. 393-421 at URL https://onlinelibrary.wiley.com/doi/pdf/10.1207/s15516709cog1203_3.

AMA Dictionary, American Marketing Association, check URL <https://marketing-dictionary.org/a/adaptive-planning/>

: *What is adaptive planning?*

Author Unknown, "Adaptive Planning," Office of the Director of National Intelligence, National Counterintelligence and Security Center at URL
https://definedterm.com/adaptive_planning_ap/236911

"Empirical Process Control," at URL
<https://www.scrumstudy.com/whyscrum/scrum-empirical-process-control>

Eriksson, J., "Scrum: An empirical process," blog, August 19, 2009 at URL
<https://blog.jayway.com/2009/08/19/scrum-an-empirical-process/>

PMI ACP tutorial," PMI-ACP Certification course offered by Simplilearn at URL
<https://www.simplilearn.com/adaptive-planning-part-1-tutorial>

Project Management Body of Knowledge (PMBOK), "Progressive Elaboration," at URL
<https://project-management-knowledge.com/definitions/p/progressive-elaboration/> and "Definitions" at URL <https://project-management-knowledge.com/definitions/>

Warner, E., "Adaptive vs. Predictive: Is the end clear?" idea Blog, December 2, 2005 at URL
<http://www.idea.org/blog/2005/12/02/adaptive-vs-predictive-is-the-end-clear/>

Author: Daniel Power
Last update: 2020-02-15 07:28