CHANGING THE CODE OF AGILE PROMOTION

How promotion of an 'agile' product redefines the meaning of project management planning

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Abstract

For a long time now, the understandings of project management planning concept has been enthusiastically embraced in big engineering and construction companies. However, the concept has been criticized by many in information technology and other new fast growing industries. While it is true that the concept has not been always properly presented and applied, the derivatives of the concept cannot be used for effective development and implementation of project management plan. Well, the confusion and polarized standings are significant; the successful applications of current project management planning, including applications in information technology, as well as the calls for 'paradigm shift' and replacement of the concept still exist.

But problem is that the promotion of a planning concept routinely contrasts the current project management planning by changing the meaning of its components.

Introduction

A short, but serious disagreement in the development and implementation of project management plan comes after steady requests for something 'simple' and 'flexible' to cope with 'uncertainty' in project management planning. It was a promise delivered by the 'Critical Chain', the book that divided the project management community and dominated project management scene for two or three years. But promise failed and the state of confusion has been replaced by current development and professionalization of project management planning and resistance to planning incompetence.

Narrative alternatives to interpretation of current project management planning will most likely stay for a while. Today's promoters of 'agile' approach that redefines the meaning of basic components of current project management planning are the most recent example.

Let's start with the introduction of 'agile' movement, by considering some thoughts from its 'manifesto', which summarizes the main attributes of 'agile' approach, (http://agilemanifesto.org/principles.html, Retrieved 6/30/2013).

The manifest emphasis the *'early and continuous delivery'* of software solution to customer; *'frequently'*, within 'a couple of weeks to a couple of months', where delivered software represents in the same time *'the primary measure of progress'*. However, if agile does not look far enough in advance then measure of progress is relative; actually it relates to increments of a solution that may be soon changed, or abolished. During its course of action the approach

'welcomes changing requirements', which may be the price for lack of visions or project planning as a whole. The manifest also highlights importance of continuous involvement of customer in incremental development of software, where *'business people and developers must work together daily through the project'*, in open-ended sessions. Such an approach shifts most of responsibility for a solution to customer, who must think what he/she really wants and whether she/he is he willing to trade continuous involvement for incremental and uncertain results. Probably the following statement of the manifest best summarizes its open-ended approach: *'Simplicity – the art of maximizing the amount of work not done – is essential'*.

Nicholson describes software development methodologies that 'have been traced back to 1957 at IBM's Service Bureau Corporation'. But after decades of application, the traditional project management planning is tagged today as 'Waterfall' or *'predictive'* method and declared by some as inadequate for management of software development. As key reason for inadequacy, a *'strict, rigid stepping from one stage to another in the process'* of software development is cited. Although the correctness of this view has never been proven, it resonated within the software development community and new concept with high-grade terms such as *'Agile'* or *'adaptive'* became popular.

> Agile methods break tasks into small increments with minimal planning and do not directly involve long-term planning. Iterations are short time frames (time boxes) that typically last from one to four weeks. Each iteration involves a team working through a full software development cycle, including planning, requirements analysis, design, coding, unit testing and acceptance testing when a working product is demonstrated to stakeholders. … [The] goal is to have an available release … at the end of each iteration. Multiple iterations might be required to release a product or new features. (Nicholson, L., 2013, p.2).

Conforto, E. C., et al., lead readers trough source references that describe a set of principles and practices, as well as development of 'agile' approach, products and teams. The research measures up to declared values of adaptive approach while believing that new approach can better manage project uncertainty and frequent changes than traditional approach. The research also lists some opinions that misinterpret real values, integrity and flexibility of current project management planning. The authors point out that majority of 'agile' proposals 'cannot be properly considered as techniques' and 'are not supported by literature'. Although the 'agile' ideas have been generally used for some specific project conditions, however, the authors question their values:

> The implementation provided a holistic view of the challenges found in the management of project at small companies that have specific constraints, such as resources and knowledge about project management concepts, that impact the way they manage their projects. … Because resource and cost planning are not deal with this method, how should resource planning and cost planning be dealt with? (Conforto, E. C., et al., 2008, p.79).

Oltmann thinks that the traditional approach to project management, 'thorough planning before executing the plan' is favorable if we are able to define project contents. However, 'agile' methods put emphasis on 'incrementalism over detailed planning' by looking for an identifiable part of project contents that can be delivered to customer in several weeks. Oltmann wrote:

> The traditional approach, with its emphasis on advanced planning, is efficient when you have relatively clear knowledge about the future course the project is likely to take, the risk or cost of having to redo thing is low, or advance preparation confers important benefits such as managing long lead time orders. … In contrast, the agile approach is most powerful when you can't clearly see the

> future of key elements of the project. Frequent short iterations of planning and then doing add flexibility and reduce risk. (Oltmann, J., 2013, p.2).

Nee recognizes variation in companies, projects, cultures, conditions and requirements that drive authors to a blended approach for project management.

> The reality is, many types of projects are not well suited for Agile approaches for a variety of reasons. Some organizations run multiple projects across many departments and corporate entities, many of which may not have the inclination or resources to manage in an Agile manner. … Further, many companies are global, with development resources located around the world, in different time zones, with varying local corporate cultures and working styles. For all these reasons, Agile project managers need to be prepared to work in cooperation with non-Agile project managers, teams that employ traditional methods and organizations that have resources scattered around the globe. (Nee, N. Y., 2012, p.1)

But blended approach is just a common sense for some managers. Schupak describes a case study from health care sector where mixed 'agile' with 'waterfall' approaches have delivered excellent results. She wrote:

> BCBSNE [Blue Cross Blue Shield of Nebraska] had large scale infrastructure and integration challenges to address, including reworking its data warehouse to accept new data from CoreLink Administrative Solutions [a healthcare technology company]. The dynamic created a tricky project management dilemma; While CoreLink was waterfall shop, BCBSNE was strictly agile. … To sync the two approaches to managing projects, Mr. Kramer and his team developed a system they called fanning. Using CoreLink's waterfall deliverables timeline as a baseline, the teams wrote hundreds of themes and features for BCBSNE and aligned them with CoreLink's schedule. The two organizations then determined dependencies and risks and coordinated what had to be accomplished across the enterprise for both CoreLink and BCBSNE. (Schupak, A., 2013, p.56-57).

There is something essential for future software development that has a root in an integrated approach of 'waterfall' and 'agile': 'We should define a project as far as we can and take into account customer requirements about deployment of software segments'. With this renewed process for continuous delivery of software, Aguanno suggests that project technological phases should be favored over the incremental investment phases. Author gives an innovative look at inevitable 'continuous development' process similar to operations and maintenance phase of project.

> To truly deliver software faster, one must look towards cutting down the timespan of all processes in the software development lifecycle from requirements gathering to deployment. Many who seek faster delivery use agile methods to improve the requirements gathering, design and development processes but are frustrated in their attempts to get a speedier deployment of the new software. These people often see deployment activities as unnecessarily cumbersome and often without much perceived value. … We have talked about concepts such as "continuous deployment" for years as if it were just one of the many agile techniques [?] we can employ on our projects. Yet, this particular technique stands apart from many of the other basic agile techniques such as holding daily stand-up meetings, managing requirements using backlogs and breaking down a project into iterations which culminate in a demonstration to stakeholders. (Aguanno, K., 2013, p.1).

How supporters of 'agile' approach looks at current project management planning

Promoters of an 'agile' approach are listing archaic characteristics of current project management planning and presenting them as limitations in coping with challenges of project management in the contemporary ages. But the chosen characteristics and vocabulary typically misinterpret the processes and values of current project management planning and present pure narrations or just the history of current project management planning. For example, they are saying that in current project management:

'Type of project is operational only'. In fact, current project management planning assures active and integrated relationships between operational levels of project management and strategic levels of project business management in company.

'Plan would remain unchanged for the duration of the project'. In reality, project management plan consists of three components: the original plan that changes exceptionally, the baseline plan that change through approved change orders and current plan that change through approved and pending change orders. The development of original plan takes approximately 30% of the planning effort and updating of baseline and current plans takes 70% of the planning effort.

'Only those scope changes approve where the existing baselines will not change very much'. Truth is that the change orders process, including scope changes, is a regulated matter dealing with modifications of the original plan. Change orders are covered by contingency, which is a part of approved project budget and can change.

'Each life cycle phase is completed before next begins'. Actually, this never really happens because all phases approaching to substantial completion continuously decrease resource consumption, with lower effort and shorter lead time, until the project end. There will be always, e.g., some design, procurement and acceptance for earlier specified works, or change orders, even for project without a glitch.

'Project status reporting alone consumed approximately 25% of the project budget'. Without a doubt, the current project management planning, including project status reporting, even for most complicated projects will not exceed 2% of total project cost.

'Waterfall does not assume additional work on preceding phase once it is completed'. There is no realistic example of this statement because field order and change order procedures are well established and standard practice in industry. The procedure must be applied wherever and whenever work need to be added, modified or dissolved.

'Waterfall is generally rigid and does not acknowledge actual situation'. If we ask people in engineering, construction, government sectors and yes, in information technology too, whether the implementation of project management plan and handling actual situation is just normal and lasting procedure. In fact updating of project management plan during project development does not differ from updating procedure for other documentation in project, e.g., architectural, mechanical, electrical, contractual and other documentation, including information technology documentation.

Supporters of 'agile' approach habitually use the *project phases* and *project feedback* to challenge effectiveness of current project management planning. The basic misperception they make, for both the project phases and project feedback, is that project *original* plan drives development of project. However;

> Understanding of *project phases* (e.g., design, production, installation, commissioning and warranty) is essential for project management planning because project phases are the link between the project management and project business management in the company. The current project management planning phases contain *project* information for the *original plan, baseline plan* and *current* plan while the 'agile' phase contains *short term* information for the *current* plan only. The differences are substantial and will be discussed later in the text.

> Understanding of *project feedback* is critical for implementation of project management plan because project feedback (planning, executing, controlling and back to planning) is part of the implementation of project management plan and management of changes under project conditions. The feedback procedure affects *project* contents and changes the *baseline* and *current* plan while 'agile' feedback affects *short term* contents and changes its *current* plan only. The management of feedback in current project management planning is an *analytical* and *complete* procedure while in 'agile' approach is an *arbitral* and *partial* procedure. The differences are very significant and will be discussed later in the text.

Obviously, the language for promotion of 'agile' approach is changing ways we are currently doing project management business. But, *'to break the rules, you must first master them'* (Audemars Piguet, 2015-2016, p.11). So let's stay reminded of the key elements of current project management planning.

Management planning

Since early days of humanity, people have been making plans for development of their ideas. There has been always awareness that it is impossible to detach planning from daily living. First significant documents of this kind come from old Greeks, from first century of new era, as described in works of Hippodamus. These documents were used for development of towns Piraeus and most likely of Rhodes, (White, B., 1971, p.11). Apparently, urbanized societies from early humanity were receptive for planning and organization.

Measurable management planning of today can be summed up in few word; the *analysis*, *relationships*, *synthesis* and *updating* of planning contents. It has started more than a half century ago when scientists and practitioners from different fields discovered the relationship in the classical theories and initiated the lasting development of management planning. From Descartes's Theory of knowledge published in 1629 to Work Breakdown Structure method used for analysis of planning contents; from Euler's theorem published in 1735 and Graph theory to Critical Path Method used for relationships of planning contents and from Maxwell's Dynamic theory published in 1868 to Management Feedback method used for updating of planning contents, management planning has been used in one form or another. As planning contents can be different, from understanding of men made endeavors to study of humanity and exploration of the universe, the application of the above planning pillars can vary.

The methodological aspect of management planning consists of the development and implementation of management plan. This aspect of management planning is considered a general knowledge that continually develops and is shared among generations of world scientists and practitioners. Within this aspect we can recognize three planning situations:

> First situation, when volume and type of identical work products, required work centers, number and sequence of operations for each center are flexible. All we have to do here is to balance time of internal operations to minimize loss of working time for relatively independent working centers.
>
> Second situation, when volume and type of identical work products, required work centers, number and sequence of operations for each center are mostly fixed. It this situation it is necessary to allocate operations in such way that available and related work centers are optimally used. Also we must know that work centers or products can be static or movable, depending on type of repetitive program.
>
> Third situation that require different planning occurs in projects with few or no repetitive operations, but with mostly defined sequence of operations and limited work centers. In this case we are looking for best plan for work centers to complete planning sequence of operations on time.

Project management planning

The following pages relate to third situation only, as described above, where we distinguish an organized procedure for the development and implementation of project management plan.

The development of project management plan consists of processes for analyzing, relating and synthetizing the contents and contents relationships of a project. In general, the development of project management plan can be expressed through the following processes:

> The development of project management plan starts by the top-down *analysis of project contents* defined by a series of project phases. Each phase is breakdown successively to more detailed contents at lower levels, all the way to the level of discrete pieces of a work defined with activities and their attributes (scope, time, cost, …). This part of top-down analysis is accomplished by use of the Work breakdown structure. To complete the top-down analysis we must define the *relationships among activities* and include the values for some attributes of each activity. This part of top-down analysis is accomplished by use of the Critical path method or a similar method. The development of project management plan is completed with the bottom-up verification, i.e., *synthesis of project contents* and *contents relationships* to more abstract contents at higher levels, all way to project level defined with project phases. The bottom-up synthesis is accomplished by use of both the Work breakdown structure and the Critical path method. These methods, besides many supplementary methods (e.g., assessment of documentation, requirements and conditions; quantity takeoff; time and cost estimating; quality planning; procurement planning; organization; valuation and acceptance of project plan), are fundamental for the *development of a project management plan.*

The implementation of project management plan consists of processes for managing the project

dynamic and updating the project management plan. In general, the implementation of project management plan can be expressed through following processes:

> The implementation of project management plan starts by *executing project activities* and ends when all project activities are completed. This frequent and sequential management process, known as *feedback process*, (planning, executing, controlling and back to planning), occurs at project data date; it updates the activities in progress on data date, as well as the related succeeding activities after data date. The feedback process includes from time to time the initiating process and/or closing process for major activities or a group of activities. Te result of the update for the activities are used to build a dynamic and integrated picture of a project status, progress, causes and forecasts, as well as to show how the results of project activities change the results for higher levels of project contents. The implementation of project management plan is accomplished by use of the Feedback method. This method, besides many supplementary methods (e.g., quantity surveying, quality measurements and quality assessment, change controls, payment requests and processing, claims processing), is fundamental for the *implementation of a project management plan*.

Accordingly, we assume that practice-oriented model of project management plan has to be specific in terms of its contents and the contents relationships. When the structure of the contents reaches the most detail level, at the activity levels of a project, then we can reveal how the project contents evolve into project management plan. It means that *we can understand project management plan as good as we know its structure*.

The development and implementation of project management plan is supported today by best practice systems and generally recognized project management systems. Those systems may have compilations of system logic that arise from various explanations, derivatives, or extensions of system contents. Besides, such system logic may be combined with fragmented theoretical and methodological bases that are characterized by technology and size of project in mind, as well as needs, requirements, understanding, experiences, attitudes of users and unexpected events. Thus far, countless project management plans, including plans in information technology, (Fleming, Q. W., and Koppelman, J. M., 2000, p.141-143; Henderson, K., 2002, p.43-45, ISO/IEC, 12207:2008) have been based on standard product development processes, recognized contents of project management processes, consistent project management system logic and integrated methodological approach.

The above conditions are complex and may cause problems in project management planning, including the calls for 'paradigm shift' and replacement of the concept (Goldratt, E. M., 1997, p.113, 172, 231, Hatfield, M., 2013, p.1-5). However, we may find also that the basic project management problems are not different from problems in any other management field. The early thought from Drucker may well relate to situation in project management planning of today:

> We have available today the knowledge and experience needed for the successful practice of management. But there is probably no field of human endeavor where the always tremendous gap between the knowledge and performance of the leaders and the knowledge and performance of the average is wider or more intractable. (Drucker, F. P., 1970, p.7).

Berggren et al. stress importance of the “neo-realistic practice turn” that reflects the firm practice. The authors found the way to represent academic knowledge and practitioner

experience in an innovative practice "to deal with the seemingly chaotic and emergent character of complex systems … .". They wrote:

> In the extent literature, there is a plethora of suggested tools for advanced planning and scheduling, for system decomposition and modularization, and for reducing interdependencies and avoiding errors. There is also a growing criticism of these "planning approaches", suggesting various contingency and flexibility approaches, to reflect and adapt to complexity and change. This critique, however, tends to lack grounded suggestions for effective managerial practices and does not distinguish between general flexibility needs and specific project structures required to make complex systems development at all possible. (Berggren et al., 2008, p.S111.).

After short introductions to 'agile' approach and the current project management planning, let's further consider the *project phases* and *project feedback*, which are often categorized as a limitation of current project management planning and used to make a case for application of 'agile' approach.

Project Phases

Project phases represent a complex view of project. During the development of project management plan the project phases are viewed as a *sequence*, but, during the implementation of project management plan the project phases, like other components of project management system structure, *overlap*. For example, a phase of project can finish substantially before next phase starts; however, a rest of its work can continue across several consecutive phases. The meaning and the source of overlaps among project phases, or other project components were repeatedly discussed in following, or similar form:

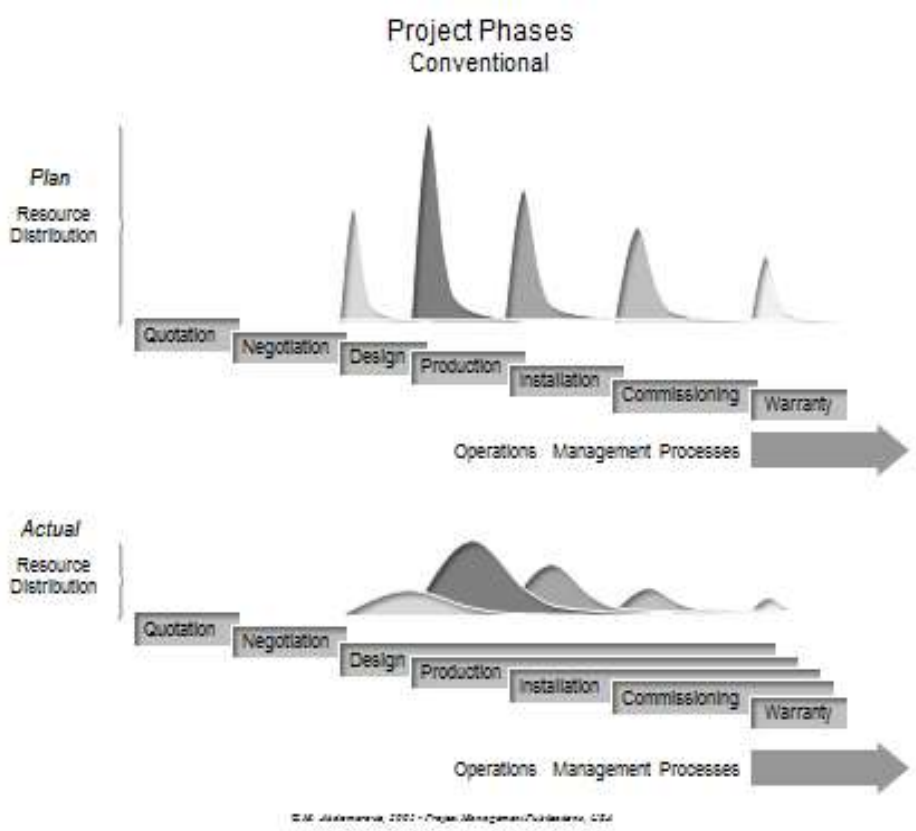
> The phase sequence defined by most project life cycles generally involves some form of technology transfer or hand-off such as requirements to design, ,,, or design to manufacturing. Deliverables from the preceding phase are usually approved before work starts on next phase. However, a sub-sequent phase is sometimes begun prior to approval of the previous phase deliverables when the risk involved are deemed acceptable. This practice of overlapping phases is often called *fast tracking.* (PMI, 1996, p.12).

We often use similar narrations to explain overlaps for components of project or project management system. Many debates narrative overlaps but few are willing to apply them. The narrative explanation of overlaps among components of project or system is shown in status of instability and can be disputed in many ways. Sometimes we call it as a 'flexible' approach, which does not add understanding to ambiguity of narration. This causes many questions and whole idea of explaining overlaps must be communicated differently.

We will use two different approaches for project phases; the 'conventional' and the 'agile' to illustrate time and resource overlaps among phases. Those illustrations are shown as a 'Plan' at the beginning of project and as 'Actual' during implementation of project plan.

From the upper part of the first figure, 'Project Phases, Conventional', we can see how we usually define project phases. This planned arrangement of project phases and distribution of resources passes through verification process to confirm the plan. At the same time, there is a common understanding that project phases may overlap during implementation of project management plan. However, the time and resource consumption of overlaps, whose causes may

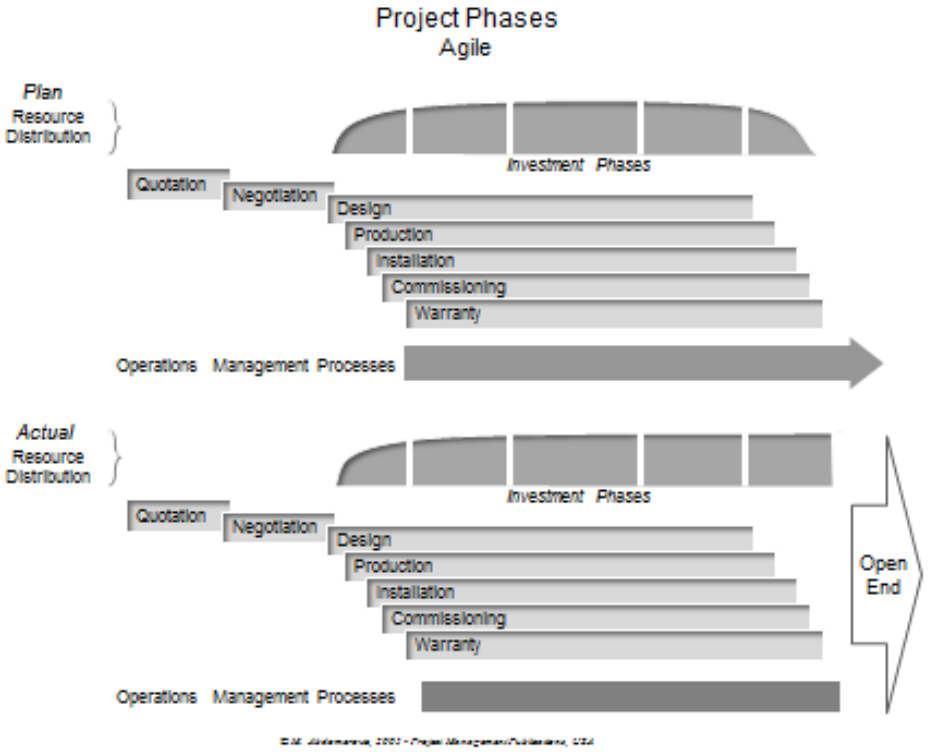
be various and many, cannot be defined in advance. What we can know are the actual status and progress of time and resource consumption, as well as time and resource forecasts to accomplish the substantial scope of upcoming project phases. Other goals, primarily to maintain accurate system of project information and keep project dynamism under control, are also common routines. *The basic assumption here is that we must understand what causes the overlaps during the project phases.*



Most likely rule for actual arrangement of project phases and distribution of resources is shown in the lower part of figure 'Project Phases, Conventional'. This arrangement of project phases and resource distribution is the result that evolves during project implementation. Project dynamic, which we observe at the project phases, is *the results of dynamism that develops at the level of activities*. Knowing this, we are able to control the source of overlapping among project phases and act in time to ensure substantial accomplishment of a phase as required and gradually finish remaining works of the project.

We can see from the first figure that the overwhelmingly proportion of work in each phase is accomplished during its original duration. *In real life, e.g., for design phase, there will always be some minor design that drags near project completion and succeeding phases will follow.* This case can be observed for any other type of work. When the above schematic is expressed in terms of cost analysis indicators, then the relations and overlapping among phases of project illustrates how the company's project business develops.

From the second figure, 'Project Phases, Agile', we can see that in 'agile' environment the development and implementation of project management plan loses its meaning. Agile practice is *management of short term requirements*; the concept absolutely real in past, today, and in the future. However, the 'agile' view of upcoming project events differs sharply from the conventional system view; in the situation where whole system is unknown or not needed at a time but some parts of the system can serve as a basis for its successive development than we talk about agile environment. Consequently, 'agile' does not contain data essential for understanding project future and *cannot* forecast the development of project phases or upcoming short term investment phases. In such case the outstanding part of project scope is also unknown and has to be compiled *incrementally for next short term requirements only* and in form of *investment phases*. Since the project end is indefinite, the project actually transforms in *continuous development* of short term requirements. Besides, since project development steps within investment phases are unknown, vital project parameters such as the scope, time and cost are unknown as well. Consequently, understanding overlaps between technological procedures and management procedures becomes meaningless and project management system changes into an assessment of short term development and 'level of efforts'. We can certainly come to a simple conclusion that 'agile' has no other than short term plan for steps within a single investment phase, for which the development time is 4-5 weeks from data date.



There are many approaches to communicate overlaps among processes, project phases, or other components of a project, but not all of them are useful. If decision for overlaps has been made at top management level and this decision was not deduced to the level of activities, to timely verify effects of the decision, then verification of the decision is not possible. Why? Simply because the real damage for scope, time, cost etc., appears first at the activity level and does not

get attention from upper management levels until indefinitely later, when correction of wrong decision becomes expensive.

We understand that update for activities build a *dynamic* and integrated picture of a project plan. Besides, *updated relationships among activities makes known the overlaps among components at any other level of any project or program structure.* This can include overlaps among, e.g., projects, works, organizations, contracts, agreements, processes, phases, deliverables, stages, or any other structural breakdown immanent in project, program, or portfolio management. Finally, the relationships for higher elements of project management structure, including project phases, may be initially planned as sequence, but they are certainly changed during project progress by changes of relationships, status, progress, causes and forecast of project activities.

Therefore, in all cases, we are challenged by unique set of project activities that define the contents and contents relationships of project. These explain overlaps among components of project, including overlaps among project phases and clarify why the 'agile' assumptions related to current project management planning such as, e.g., *'each life cycle phase is completed before next begins'* and similar sayings simply meaningless.

Project feedback

Although we cannot find in the PMBOK Guide a detailed procedure for management of project dynamic, the meaning and source of dynamics between project processes were repeatedly discussed in following, or similar form:

> [The] project management process groups are not discrete, one-time events; they are overlapping activities that occur at varying levels of intensity throughout each phase of project. (PMI, 2000, p.30).

We understand project dynamism as changes to the implementation of project management plan. Project management plan, like any analytical documentation, e.g., architectural, mechanical, electrical, software, or other design, *can never be as precise as the actual events*. However, the plan must be developed and updated by professionals and according to regulations, requirements and best practice procedure.

Project management plan is usually implemented as a single document. However, to understand project dynamism and have clear measurement of project performance we must concurrently refer to three forms of project plan; the *original project plan*, the *baseline project plan* and the *current project plan.*

> The Original Plan is an early clarification of the scope, time, resource and cost estimates for completion of all project works. When the original plan is approved, time phased and contracted, it is saved as the first picture of the baseline project plan. *The original project plan is used in future to compare with changes to the baseline project plan.*
>
> The Baseline Plan take the stage in the period when the original plan has been developed into the time phased plan and approved for use. *And from then on, the baseline plan changes through approved change orders.* If the project does not contain approved change orders then substantial elements of baseline plan are equal to original plan.

> The Current Plan contains the most recent update of project data. It expresses a dynamic nature of project scope, cost and schedule, which change during each updating period and may also contain, beside approved change orders, the *pending change orders.* Therefore, the key difference between the baseline plan and current plan are expressed by pending change orders.

After the performing organization's original plan is accepted, it becomes referred in contract as 'Performing organization's Contract schedule'. Its activities, logic, relationships and other attributes may not be changed, added or deleted without the consent of both Client and Performing organization.

The implementation of project management plan starts by *executing project activities* and ends when all project activities are completed. The activities and their attributes are regularly assessed and updated at a *data date* when we *cannot* add, modify or delete events that happened before data date; what occurred before the data date is in the past and we cannot go back to earlier data date. *Therefore, circular or more complex than circular assumptions has no example in real life projects*. Work element passes through feedback cycle (planning, execution, controlling and back to planning) and at completion of each feedback cycle the work element can stay intact, made a progress, or be completed. Erroneously performed or uncompleted work is routinely *transferred* in current planning period and reconsidered during next feedback cycle. When we have a situation that requires change in plan, regardless of causes and time of occurrence, we have to deal with current conditions of the plan. On the data date, we assume that all activities under progress have been assessed, feedback cycle completed, results are provided and organized to show status, progress, causes and forecasts of work for project activities and higher components in project.

Each project must have an updated plan that contains activities for contract dates, schedule of values items, submittals, claims, change orders, approvals and other activities. For example, a $5M construction project may contain up to one thousand activities, while a $500M construction project may contain up to ten thousand activities. Small projects are planned with more detailed schedule value items, while big projects allow allocation of bigger amount for each schedule value item. In general, we should newer compromise level of details because this is *the key for understanding the contents and contents relationships of project.* There are several reasons for that. Project plan must be sufficiently detailed to: aid identification of facts and relation with factual project documentation (like design, specifications and contracts); keep a record and understanding of project development; facilitate management of interactions among technological and management processes; simplify work estimates, as well as measurement, payment applications and approvals of accomplished works; assist in preparation of claims among contracting parties and assessment of claims by court; help management of change orders; get assessment of plan by professional authorities and project stakeholders.

If properly developed and updated then the project plan can have lasting effects, especially in protection of claims.

> If the schedule specified for a project does not present a feasible or reasonable plan for the sequence and duration of the work and is not properly updated, it is worthless as a pragmatic tool to execute work in the field. Further, such a schedule is useless as a data base by which the parties or finders-of-

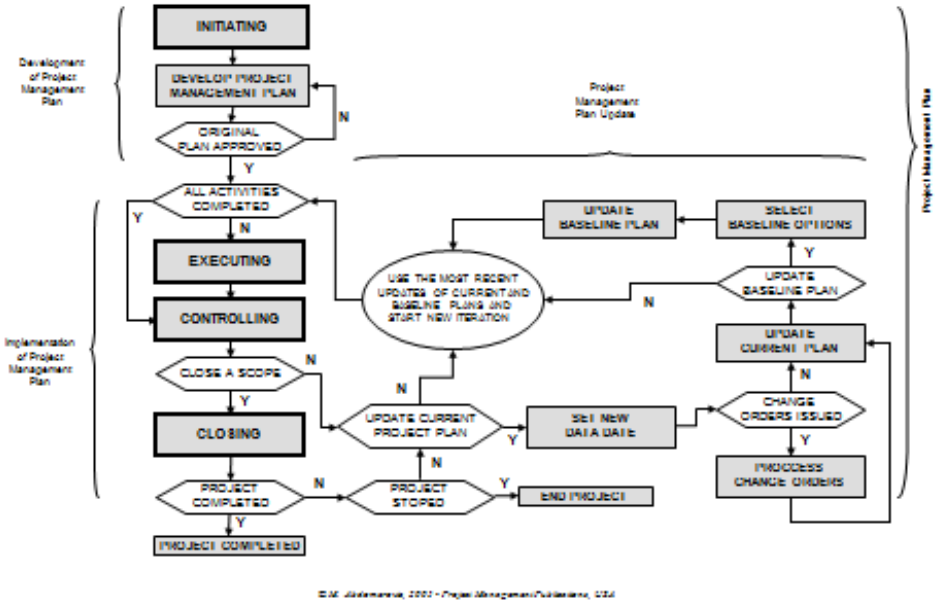
> fact can evaluate the actual performance of the work, the effect of delays on the project and the responsibility of the parties for such delays (quoting Pathman Construction Co). In number of cases, courts and board of contract appeals have refused to accept critical path method (CPM) schedule that were not properly prepared or that were not used to actually schedule the work in the field (quoting Fortec Constructors). (Wickwire, J. M., et al., 1991, Introduction, p.2).

The figure 'Project Management Feedback' shows the process of the development and implementations of project management plan. *Such specific order of actions must be applied at data date directly to each activity under progress and indirectly to related succeeding activities of a project management plan.* The total number of activities directly considered during each feedback procedure is usually less than 10% of total number of activities in the plan.

From figure 'Project Management Feedback', we can see the relationship between elements of the project management plan. If the implementations of a project management plan progress, then the project management plan is changed accordingly. So, once the implementation of project management plan starts and the project plan migrates into the project management feedback, then we must have active reference to the current plan and the baseline plan. During this period we always deal with a different set of data then what we found in the originally approved project management plan.

Implementation of project management plan requires *intensive management of changes*; once we settle all conditions about a particular issue, we move to discover and settle next critical issue. This procedure also leads to ongoing improvement of logic and produces estimates to project completion. Although we cannot guarantee that project will be completed according to original plan, *we can guarantee that project management plan has a capacity to control project status, progress, causes and forecast according to the contract.*

Project Management Feedback



A contractor performs work according to *contract documents* and control project dynamic by assessing the progress of time and cost estimates to complete the work as specified. Contractor must update and publish the results of project plan as required by emphasizing where revisions have been recognized or made and post copies of project plan to concerned parties. In addition, contractor must assure that project contract time, including all contracted milestones, cannot be changed without change orders. Contractors must know how to accomplish work and what the contract demand of them while construction manager must know how to manage work and what to request and expect of each contractor. If contractor failed to accomplish work planned for current week, then construction manager leads action to get required output by the mid of next week. But there are cases where time and/or cost for contingency and liquidated damage have been exhausted, disputes and litigation between contractual parties proceed and bankruptcy of Client and/or Performing organization may follow.

One often repeated saying is that if 'project was not completed to original plan', then we speak about failed project. However, the truth is that most projects complete to baseline plan that changes by approved change orders, which are part of contracts. Therefore, it is never news that project is not completed to original project management plan yet we still repeat this buzz for some reason. And indeed, it would be comical to say that a project is not completed to original architectural plan, because there is no such a plan that has not undergone revision. This notion is gaining the ground in project (Pickavance, K., 2013a, p.1-2; ISO/IEC 12207:2008(E), IEEE Std 12207-2008, Terms and definitions; Prieto, B., 2015, p.1) and *statistics of 'failed' projects have to be reassessed*. Management of real-time events, including unexpected conditions, complexity and misuse of existing know-how, are just normal project situations handled regularly and included into realistic depiction of project as whole.

The above and other material provides the orientation to performing organization about the minimum requirements for the implementation of project management plan. The key is in understanding of the needs and requirements for project management planning and in creating environment for their application. We must understand first the relationships between original plan, baseline plan and current plan. We must know: how scope changes, pending and approved, are added/subtracted and handled in plans; how contingency is used; how actual work accomplished during current period is recorded and compared to baseline plan; how work forecast for next reporting period is controlled; how current and expected delays, or acceleration impact the plans; how change in development logic, as well as added, modified and deleted activities and milestones impact the plans and actions of stakeholders; how to relate the plan with approval for the work done and payment requests? Besides, we must show how requests for information, field orders, damages for delay, disruption, claims and corrective measures are handled and how contract time including all contract milestones is changed? Without considerations of the above parameters of project plan the project status, progress, causes and forecasts, as well as management of changes that are so common in project business could not be achieved. By understanding magnitude of project dynamic and related changes we can easily say that the 'agile' assumptions related to current project management planning as, 'plan *would remain unchanged for the duration of the project'* simply could not be supported.

However, is not rare that narration prevails by oversimplification of requirements or misunderstanding of project management planning options and related consequences. Such approach will most likely overshadow the causes of results, reduce performance metrics to pure

statistics for high level components of project and make management decisions late and consequently irrelevant.

Conclusion

At present, the current project management planning and the 'agile' approach may look as a one of the two choices for project management phasing, however:

> Project phases show the top level of technologies involved in *project* and verified by activities and their attributes located at lowest level of the technologies. Current project management planning is oriented toward *project* where whole contents of project is breakdown to technological project phases, contracts within each phase and activities within each contract where each activity can be planned, its status and progress for completed work assessed, controlled, accomplished, accepted and paid and for non-completed work forecasted. *In this approach the project phases are actualized continuously* by updating project activities and their attributes. Such project phases *present important management toll.* As the results, the current project management plan shows the development of project phases in form of activity attributes (scope, time, cost, …) and for whole contents of project.
>
> 'Agile' phase shows the top level of investment involved in *single segment only* and verified by technological steps and their attributes located at lowest level of the investment phase. Agile approach is oriented toward incremental periods and whole contents of project is breakdown successively to expected investment phases and technological steps within immediate investment phase only where each step can be planned, controlled, accomplished, accepted and paid, and its status and progress for completed work assessed. However, those practicing agile approach will restraint commitment to any condition and forecast for non-competed work of the steps and coming investment phases. *In 'agile' approach the investment project phases are just an idea compiled arbitrary and cannot be used as project management tool*. As the result adaptive approach shows the development of an investment phase in form of step attributes (scope, time, cost, …) and for single phase contents only.

Therefore, 'agile' in its best form replicates some parts of current project management phasing. As Nee suggested how well-proven components of traditional project management can be used in an agile situation:

> The knowledge areas, process areas and artifacts of traditional project management are still applicable in an Agile environment, as long as they are adapted to the core concepts of incremental, iterative design and change readiness. (Nee, N. Y., 2012, p.3)

Although the current project management planning is boundary object for 'agile' approach, however, a specific group of project management community may find convenient to organize its project management processes through 'agile' approach. If we subtract the promotional rhetoric from 'agile' approach then we can see there a capacity for management planning of short term requirements, usually met in emerging industries that need something simple and momentarily operational to support project management function. *This should be the platform for promoting 'agile' approach*. While 'agile' helps cover a number of sequential, relatively unknown and open-ended short term requirements, its primary value comes from *rising awareness for project management planning*. It was necessary and useful move; otherwise some

emerging projects would be managed by pure intuition and massive reconstruction of seemingly completed parts of project.

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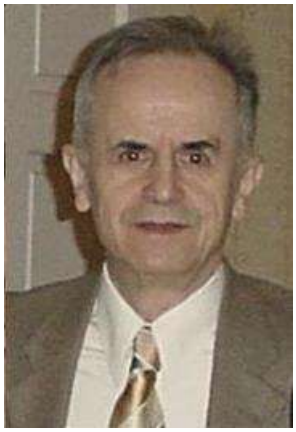

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Muhamed Abdomerovic, D.Eng., Civil, specializing in project management. He has more than forty years of experience in the application of scientific principles to project management planning. He mastered project management through many capital projects with a total budget of 12.5 billion. In working on variety of projects in the information technology, construction, the process industry and the energy sectors, he has gained broad insight into the project management theory and practice.

Mr. Abdomerovic is currently an independent consultant. He was previously project planner with Vanderlande Industries, master scheduler with FKI Logistex's and program manager with Luckett & Farley. Prior to these positions he worked with Energoinvest and was responsible for the design and implementation of systems for management of large-scale development projects. He began his project management career in Vranica as a construction manager.

Mr. Abdomerovic has been an active participant in the development of the project management profession and has published many professional journal articles on project scope, time, cost and information management. He has also published articles in six proceedings of Project Management World Congresses and has published four books. His current research activities cover several aspects of project management including process relationships, project management system logic and system approach to project management planning.

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