



THE PROJECT MANAGEMENT STANDARD

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MESSAGE FROM THE CHAIR

by Robert (Robb) Gries, P.E., CCM, PMP, Chair

Getting Through It

Since the start of the calendar year, the global economy has slowed significantly, and in some locations, the construction industry appears to have stopped completely. World leaders are well aware of the problem, and many have taken proactive steps to get their respective economies moving again. Hopefully, their efforts will have a positive effect very soon. In the mean time, the DPC SIG Leadership Team is seeking ways to meet the challenges and help our members get through this difficult period.

There is something you (the member) can do that would help our industry, and that is to get more involved—whether it is at the local, national, regional, or global level. I am a firm believer that our members have a wealth of knowledge and experience and that you can make a positive impact. All it takes is the opportunity to apply that knowledge and experience, and there is no easier way than to volunteer. Volunteering is a great way to apply one's existing skills, but also it provides an excellent opportunity to learn from others.

Another thing you could consider is to serve as a mentor. Mentoring is a great way you can increase professional and personal growth, develop a network, and strengthen interpersonal skills. On the other hand, the protégé will benefit by learning more about the profession, developing a greater degree of self-confidence and improve their professional and personal skills. Thus, both the mentor and the protégé benefit from this relationship, and I cannot see any better way to leave a legacy for the next generation.

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EPC – REAPING COMPETITIVE ADVANTAGE

By C.S. PITCHAI PILLAI, MBA, PMP

Overview

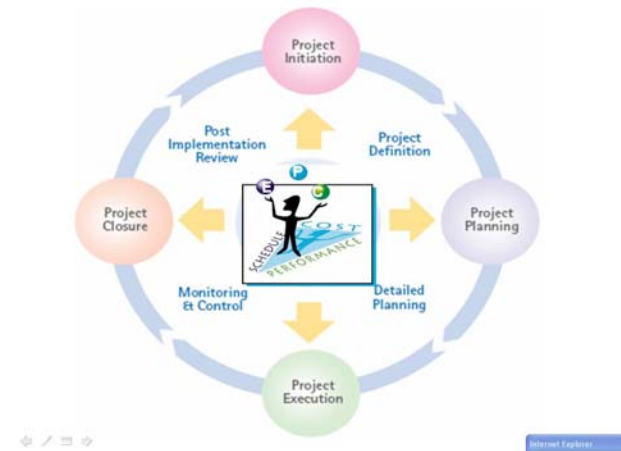
We do not find a single business entity without a dynamic approach to their STRATEGY. With such dynamic international customers what strategy is needed by EPC contractors providing services and how do they achieve their purpose?

There are many forms of design, procurement and construction: EPC - engineering, procurement and construction; EPIC - Engineering, Procurement, Installation and Commissioning; EPCM – Engineering, Procurement and Construction Management;. LSTK - Lump Sum Turn Key and Turnkey project Firms are higher end agencies who own technology. EPCM is not always successful as dependence on sub-contractors for construction, is high and integration between the engineering and construction seldom achieves competitive advantage.

The Changing Scenerios...

There is no denying the fact that the present economic meltdown has multiplied the complexity of EPC projects which were always difficult, but at least higher margins were achieved by EPC Firms vs. other contracting methods . In this world of uncertainties, EPC firms are asked to deliver the best while swimming in troubled waters. The Owner companies wish to get the project done through single source. Even the necessity of the project management consultant engaged to act on behalf of the Owner through the late 90s is now being performed by the EPC Firm by and large. The so called triple constraints consisting of time, cost and scope has evolved into a complex world of multiple constraints to be managed by these EPC project leaders.

EPC owner does not get in the market what the customer specifies in the project requirements. The conflict remains throughout the *project life cycle* making the duty of the project leader most difficult till final acceptance of the project.



Mismatches – Leadership

The key to success of any project is the project leader. But, there are myriad reasons why it is difficult to find the talented candidates for EPC projects. One major reason is the sheer scope and complexity of today's projects, particularly those in Engineering, Procurement and Construction. By virtue of its short lived project life cycle, project management teams move from project to project, often working in different countries. They may not have had the opportunity to work in multiple disciplines with development of managerial skills right from inception of their careers. Yet there are a lot of ways to succeed. EPC Firms must take a broad approach and think more strategically than at any time in the past to bridge up these missed experiences.

Continued on next page

EPC CONTINUED

Value Stream

On people, be selective, invest and select the right person as the Project Leader. Co-location of Project Team and integration of key functions consisting of Engineering, Procurement and Construction, is the key. It may seem to be idealistic but it is not impossible. The project leaders must have gone through the mill by job rotation, working in different phases of Engineering, Procurement and Construction during his career. The primary actions required to bring the project from proposal to commissioning and handing over to the end user is known as value stream and shall be the responsibility of the Project Leader. Apart from Engineering, Procurement and Construction, the Project Leader must be adept enough to manage the five (5) Project Management Processes (Initiation, Planning, Execution, Monitoring and Controlling and Close out) and nine (9) PM knowledge areas (Integration, Scope, Time, Cost, Quality, Resources, Communication, Risks and Procurement) with ease coupled with general management skills.

3- P's, Purpose, Process and People.

The project sponsor must communicate to the project leader through a PROJECT CHARTER with a clear purpose for the project, role clarity of key project team members, communication matrix, authority levels, conflict resolution, values and behaviors. The Project Management methodology must be consistently followed and must integrate results of the project execution with the baseline schedule. This helps to measure the progress periodically with the right metrics and take corrective actions at the appropriate time. The use of the software tools must not be a substitute for effective communication and interpersonal skills.

There is a tremendous unused potential in our people. The Project Leader should ensure and facilitate the Project Team to communicate, strengthening involvement of every Team member and all stake holders throughout the project. Jack Welch evolved from a traditional hard-edged authoritarian to a more people-sensitive manager. He understood the importance of treating his employees as a source of initiative, energy and creativity rather than controllable costs. Said Welch "Our biggest task is to fundamentally redefine our relationship with our employees. The objective is to build a place where people have the freedom to be creative, where they feel a sense of accomplishment – a place that brings out the best in everybody."

Benefits Realization

It is imperative that the Project Leader facilitates effective communication among the team members and can bridge contradictions, build mutual support and achieve consensus. The EPC Firm Management must provide enabling conditions that drive the intensive knowledge sharing in order to develop organizational learning as a source of competitive advantage. The schedule and cost are inseparable. The EPC firms need to institute an Earned Value Management (EVM) system which monitors schedule and cost variance as indicators of risk impact. The risk reviews are to be incorporated into project reviews and not in separate sessions. The senior management shall support transfer of Best Practices developed by the leading edge companies. In other words, the purpose of the integration process is to ensure that the learning organization overlays and supplements the entrepreneurial organization by creating such a working environment.

HOW FAST CAN TRACKING BE? FIND OUT WHAT IT TAKES TO SUCCESSFULLY FAST TRACK AN EPC PROJECT

By Fabio P. Teixeira de Melo, PMP

With collaboration from M. Aslam Mirza, CE, MBA, PMP and Roberto de Mesquita Sahlit, PMP

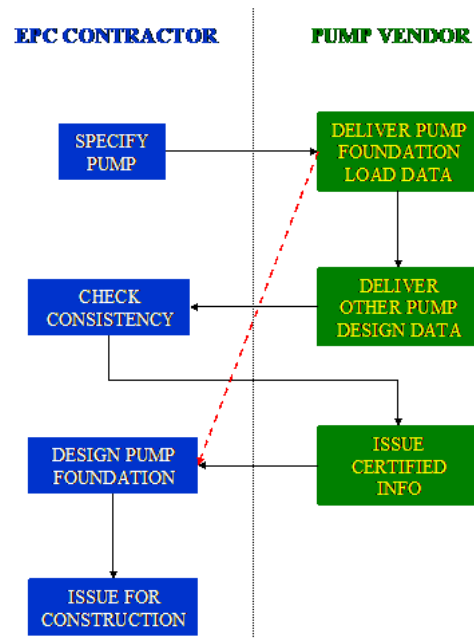
Is Fast Tracking Limited to Just Schedule Acceleration?

In the early years of industrial plants construction, projects were executed in well defined steps: first an engineering design was developed, then equipment and materials were purchased and, when all or most of the goods were available and design was completed, construction was started. Different companies were hired for each stage and the integration was the responsibility of the owner, who frequently also performed its own procurement of all necessary equipment. When construction started, any problems that would appear were directed to the owner, who was usually not prepared to manage them.

The EPC (Engineering – Procurement – Construction) contract model was created to add value to owners, so that management of those interfaces was addressed and planned for. In this model the main contractor was held responsible for executing all phases. Most interfaces were internal to the contractor and the owner could focus on its business.

Contractors that offered EPC solutions soon realized that, as all phases were inside their scope, they didn't need to have the design complete, or all the equipment and materials available at site, to commence construction. Fast-tracking schedules for EPC projects became the norm, but is fast tracking only about schedule acceleration?

Example of fast-tracking situation, where the fast-tracking is represented by the red dotted line.



According to the *PMBOK® Guide 3rd Edition*, Section IV - Glossary, fast tracking means “compressing the project schedule by overlapping activities that would normally be done in sequence, such as design and construction”. Although this definition is correct, it may lead the reader to oversimplify the application and concept of time management, and could lead someone down a treacherous path instead, while it should be of a much broader nature.

Continued on next page

HOW FAST CAN TRACKING BE? CONT.

The Comprehensive Fast Track Approach

The fast tracking technique should be coordinated with actions in other knowledge areas if it is to be successful. The concept must be sold to project team at all levels and communicated in many ways. A comprehensive fast tracking approach would include actions such as the ones below.

- **Integration**

First thing is to get the project team members familiar with the most important aspects of the contract. The contractual master schedule that shows the key milestones and completion date will always remind them of where tight durations and parallelism can be found. It is important to emphasize that the contract represents the will of the parties that signed it and the team members' mission is to accomplish it.

In order to provide key team members with familiarity and common understanding about the contract, a workshop is a good initiative. Having the participants read the contract terms beforehand is strongly recommended. The workshop may be conducted by the project manager and other members who participated in contract negotiation and should include a discussion forum to clear any doubts and provide a common interpretation of the contract.

The project management strategy to execute the project should also be clearly understood by team members. Representatives from each phase must be introduced to the main characteristics of the other phases, understand how the results of their work affect the others and what are the inputs they need to receive. It is not only about understanding the workflow, but also the impacts of delays and revisions to downstream activities.

A joint planning team formed by planners from each major phase or subcontract is a good way to build a bridge between the logic network diagram, the work being executed by the specialists and the project management team.

This team may or may not include representatives from owner and other stakeholders.

- **Trade-off Approach**

The entire team, including the project manager, needs to be aware that they cannot achieve the best results in all aspects for every activity. Trade-offs must be made between cost, time, scope, quality and risk exposure in order to effectively achieve their purpose.

The decision on what to sacrifice and what to emphasize is taken in a case-by-case basis and information from different sources must be considered. Usually it is the project manager who has the responsibility to make that decision but, whether it is delegated or not to another team member, the point is that the entire team must be clearly aware that no one but the designated decision maker should assume that role.

Continued on next page

We're Looking for Contributors to the DPC SIG Newsletter!

We're looking for individuals to contribute articles or news items to the DPC SIG newsletter *The Project Management Standard*:

- Write an article telling us about your experiences with DPC-related projects (PMPs can earn PDUs for articles they have written).
- Contribute an interesting article or news item that you have found.
- Share your knowledge and experiences with others by providing useful tips.
- Direct us to informative PM and DPC-related web sites.

If you would like to provide content for the September 2009 issue, please send an email by August 15, 2009 to vccommunications@dpcsig.org.

HOW FAST CAN TRACKING BE? CONT.

For example, if one concrete foundation must be ready to receive its equipment in the shortest possible duration, the team can make a joint decision to add catalysts and use a stronger concrete mixture, so that curing time is shortened; however, that approach should not be automatically extended to every concrete foundation.

Roberto Sahlit, PMP, a project manager working at Construtora Norberto Odebrecht, the construction branch of Odebrecht Group, a Brazilian multinational company, participated in the CARAPEBA-1 Jacket project, an EPC executed in 1986 for Petrobras, the Brazilian State oil company. “After the contract award, an analysis of geotechnical information of that portion of Brazilian shore revealed uncommon soil characteristics: a similar calcareous soil was only found before in Australia. That factor, combined with a change in modules loads, required four new piles to be added to the ones originally foreseen, which commanded an engineering review of every structural piece forming the jacket, in a stage when all steel components had been bought and pipe elements were being confirmed. A risk analysis was done in order to assess the probability of changing structural design and pieces were ranked according to that probability. The project team established a maximum admissible probability and analyzed the trade-off between waiting for a complete design review or bearing the cost of reinforcing all pieces above that limit. Decision was to fabricate the reinforced pieces. When engineering review was finally issued very few pieces required rework and, most important, the project milestone of jacket load-out was successfully achieved. Due to the successful implementation of the fast tracking technique, which overcame that specific problem, Odebrecht received in 1986 the Petrobras Quality Award, the most prestigious project award known in Brazil.”

Activity Description	Period						
	1	2	3	4	5	6	7
SPECIFY PUMP	X X						
DELIVER PUMP FOUNDATION LOAD DATA		X X					
DELIVER OTHER PUMP DESIGN DATA			X X				
CHECK CONSISTENCY				X X			
ISSUE CERTIFIED INFO					X X		
DESIGN PUMP FOUNDATION			X			X	
ISSUE FOR CONSTRUCTION				X			X

Example of schedule compression by applying the fast-tracking technique.

A good way to handle that kind of situation is to take advantage of an established internal change control system, issuing an internal change order request whenever a decision of that nature must be made.

- **Float management**

Total float is an attribute of each path in a schedule. In EPC projects, the paths span all phases and the part of the team working on the first ones tend to count on path floats to better level resources and manage their work. This is a very dangerous pitfall, because the construction phase – the last one in an EPC schedule – is affected the most by external factors. Unfavorable weather conditions are a good example of why the float may be needed. Team members should commit to dates and the path floats should be treated as a contingency reserve, which use is a prerogative of the project manager only.

Continued on next page

HOW FAST CAN TRACKING BE? CONT.

There are useful academic theories for handling the float, but a joint planning team with sound knowledge of the communication aspects of the contract can be effective as well. Information may be released on dates and durations, excluding the float from day-to-day discussions with specialists.

- **Concurrent engineering**

Concurrent engineering consists in putting construction representatives together with the design team to add value to design. Constructability (making it easier to build what is designed) is greatly enhanced by concurrent engineering and cost-effective solutions might rise from the exchange of experiences.

M. Aslam Mirza, CE, MBA, PMP, a project management consultant in Pakistan, participated in the WOPP – White Oil Pipeline Project, an EPC owned by Pakistani company PAPCO – Pak Arab Pipeline Construction (Pvt) Ltd and executed by a consortium formed by CPECC – China Petroleum Engineering & Construction Corp and a local company, TES – Techno Engineering Services, for the construction of an 870 km pipeline that would transport petroleum products from Karachi to Mahmood Kot in Pakistan. He reports that around 90,000 tons of steel pipes were fabricated one month ahead of schedule by placing the piping factory in Karachi and importing steel coils from China. In this way design and field engineers were all close to the job site, so that requirements from both disciplines were discussed and reflected in the fabrication schedule, allowing the project team to manage cost, time and quality in the most effective manner.

This approach also has the advantage of making the construction team aware of design issues, so construction planning can be more realistic. Perhaps the most important aspect, of concurrent engineering is to be a strong team building activity.

Builders who have participated in design elaboration are more likely to buy in to the engineering solutions and feel co-responsible for them. Communication channels are strengthened and problem solving becomes a smoother and quicker task.

In order to achieve the best benefits from concurrent engineering, the construction specialists mobilized to witness the engineering phase should be the ones who will perform the construction activities at the site.

Continued on next page

HAVE A PM QUESTION?

**WE JUST MAY
HAVE THE
ANSWER!**



The DPC SIG has enlisted the support of Subject Matter Experts from around the world to address your project management-related questions. Questions and answers will appear in upcoming issues of the DPC SIG newsletter and monthly bulletin.

Submit Your Question

email your question to VCMarketing@dpcsig.org. Be sure to include your name and contact information in the email.

HOW FAST CAN TRACKING BE? CONT.

• Rolling Wave Planning

In EPC projects, the product requirements and the project scope limits are usually well defined, but when it comes to scope decomposition things start to become more difficult, especially when the scope includes developing the basic engineering design. In the beginning it is very hard to answer some questions, such as:

- Does the equipment and structure foundations require piling?
- How many instruments need to be purchased, calibrated and installed?
- What is the best location for the electrical panels that feed the plant, and how many will be required?

According to the *PMBOK® Guide 3rd Edition*, defining the activities list is the first step in the sequence to develop a schedule, and the definition process consists of decomposing the WBS work packages. If your WBS is still high-level, it becomes clear that a detailed schedule will hardly be a realistic one.

A good solution is to adopt the rolling wave planning approach, which consists of increasing the level of detail of the schedule as more information becomes available. All stakeholders must agree to an approach and the schedule refinement process must be clearly documented in the schedule management plan, including triggers for each refinement.

In a typical EPC project, triggers may be the start of procurement activities, start of civil works at the site, start of equipment erection and start of the commissioning stage. Another approach, for example, is to have refinements every 6 months.

Sing the Right Song

Fast tracking sounds like music for most project stakeholders, but care should be taken not to think it is a panacea and take it as a standard approach. The decision to use this technique should be a clear consequence of a chosen project management strategy, and a simulation of project results should be made to prove that the benefits of applying fast-tracking will outweigh the increased costs and risk, and that it is considered viable in the grand scheme of all activities put together.

If the approach is not sufficiently planned and actively managed, that sweet allegro can turn into a dissonant heavy metal after a few chords

Fabio Pereira Teixeira de Melo, PMP is a planning manager working for Construtora Norberto Odebrecht, the construction arm of the Brazilian multinational Odebrecht Group, with headquarters in Salvador – BA, Brazil, and offices in 15 countries. His experience spans 15 years in construction, including EPC projects in energy, oil, gas and petrochemical areas. A Leadership Institute Graduate from the 2004 Class and founder and ex-president of PMI Recife, Pernambuco, Brazil Chapter, he participated in the elaboration of the Construction Extension to the *PMBOK® Guide* and the *Practice Standard for Scheduling®*, and currently serves as Latin America Chair for the DPC SIG.

SIDEBAR 1

Things to consider before deciding to choose the fast-tracking approach

- The fast tracking approach brings the possibility – not the certainty – to reduce the overall project duration. On the other hand, risk exposure is higher if compared to “normal tracking” approach. The adoption of fast tracking must take in consideration that the overall uncertainty will be at a higher level.
- How important is time for the client? The project manager shall check if the contract has statements such as “time is of the essence”. A look at penalties for delays is also recommended, as they are a good indicator of the importance of time for the client. The reason why the client decided to undertake the project is also useful information: if the aim is to explore a market opportunity, time is of the essence regardless of contract statements. If, however, there is no evidence that time is top priority for the project, possible trade-offs between risk exposure and overall duration should be identified and assessed prior to decision making about fast-tracking.
- If the project is undertaken to explore a market opportunity or is subject to windows of any kind (e.g. a giant crane with few units available around the world), the project manager must actively manage the duration of the contract negotiation process, as delays in awarding can make the fast tracking approach the only alternative to achieve timely completion. The risks associated with compressing the schedule due to delay in contract negotiation shall be shared between the parties. They may also consider starting the project before the contract is duly signed, if risk and cost involved in that decision are admissible.

SIDEBAR 2

Things to consider after choosing to go for fast tracking

Evaluate customer’s and contractor’s organizational strengths and weaknesses: awareness of grey areas help in making alternative arrangements, outsourcing or add-ups to overcome the pitfalls. Development of a project management strategy and Risk Distribution Chart may be helpful in articulating the best contract documentation for both parties, which leads to cooperative working relationship.

Establish an explicit change control methodology: a good change control methodology established in contract helps dealing with uncertainty and scope variation. A faster decision making process resulting from a clear change control methodology is key to fast-track execution.

Develop partnering spirit in contract: desired end results of the contract require the integration of efforts from both contractor and customer. A win-win approach helps to ensure hinged interest for successful completion of project.

Explicit provision of an Alternate Dispute Resolution: conflict of interests generates disputes and they must be addressed as soon as they arise. An earlier decision in that situation is usually cheaper. Provision of an alternate dispute resolution process helps parties to maintain interest in progression and minimize the chances of falling into an expensive litigation process.

Align contract documents & claim management: formulation of contract requires development of many documents by professionals who may have different mindsets, perspectives, experiences and risk perceptions. All documents forming part of contract shall be aligned in purpose, and free of ambiguity and conflicts. Claims are often seeded in ambiguity and conflicts between different contract documents. Natural eventualities of claim need to be resolved and settled at the earliest time to capture the interest of parties and maintain the financial flow for the project.

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SIDEBAR 2 *Continued*

Choose the bias for design assumptions: in some cases, being conservative may be a good approach. For example, concrete or steel structure is the spine of an industrial plant, once equipment, piping lines and cable circuits are commonly supported by it. If local prices for steel fabrication / concrete construction are low, being conservative about the inputs for structure sizing will speed up foundations design and construction and steel parts fabrication and erection, while reducing the possibility of revisions. Early erection of concrete and steel structure makes many fronts available and allows more flexibility to eventual schedule changes.

Pay attention to layout: a well-studied layout is likely to reduce quantities of piping and cables. Lower quantities mean lower delivery lead times. Besides, as procurement is usually responsible for 40-55% of the total EPC project cost, savings here are always significant. On the other hand, clearance for construction shall be observed. Tight layouts lead to fewer alternatives for construction sequence. In case a delay occurs with the design, procurement or construction of one equipment or structure, recovery alternatives are affected by the layout clearance.

Use unit price model for construction subcontracts: If construction activities are to be subcontracted, the alternative of adopting the unit price contract model should be considered.

Firm fixed prices are safer for the buyer, but they require a higher level of certainty in order to allow sellers to bid properly. They also require a stronger change management system, once the scope has been confirmed.

Subcontracting construction works means to include in the network diagram, between construction and the previous phases, all the bidding process. If firm fixed price is to be used, individual paths such as “design structure 1 – build structure 1” are broken, once a good amount of scope must be collected to form an interesting package for bidders. The bidding process itself may become a bottle neck.

The unit price model requires less mature information. With a layout drawing and a quantities list, the bidding process can be started. The quantities estimated for the EPC quotation and budgeting can be used, and the bidding process runs while design is being developed.

Change management is benefited because usual scope inclusions and exclusions impact only the quantities. To make change management easier, it is recommended to include in the unit prices list some items related to rework: prices for demolishing concrete structures, removing instruments, cutting pipes and others can be defined during the bidding process or in the early stages of the contract execution.

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SURVIVING A LAYOFF

By Albert Ugelow, PE, PMP

I have worked in the consulting engineering business for over 37 years. During that time several of the firms I have worked for have had to layoff a significant number of people. Each time I escaped the axe and continued to work. That all changed on November 21, 2008. That morning my boss told me that effective the previous day I was being laid-off. It took me over 5 months to find a new job as a contract employee, something I would not have considered 5 months ago. This experience taught me several lessons.

- **No-one is indispensable, everyone can be replaced. It did not matter that:**
 1. I was a department supervisor – my group was given to another existing supervisor
 2. I was a project manager – we had an excess number of project managers. My projects were given to another PM, increasing his billable work load
 3. I was a senior technical reviewer on a project and few other people in the firm had the background or knowledge required to review this work. The plan was to give this work to another individual. In the end I was hired as a job shopper for one month to complete the review.
- **A proposal résumé is quite different from a job seeking résumé.** My master résumé was 5 pages in length and discussed in gory detail all my major projects and my roles and responsibilities on these projects. I learned that recruiters and hiring managers spend a maximum of 30-45 **seconds** reviewing a résumé.

If you do not have the proper key words or other information to catch their interest, the resume is discarded. No matter how many years of experience you have, keep the resume to 2 pages. To help meet this limit I created a resume supplement that listed my publications. Discuss accomplishments and achievements, not roles and responsibilities. I also created a second supplement to provide more details on key projects.

- **Personal contacts are the key to getting past the résumé gate keeper.** I had two face-to-face interviews before landing my current job. Both interviews were arranged by people I knew from previous work assignments. Many of my contacts were dead ends for one reason or another. I also dealt with a large number of recruiters. A number of them submitted my résumé to their clients, but none of these resulted in an interview. In many cases the recruiter never got back to me to let me know the feedback from their client. The job that I have now was arranged through engineers who were my Client 20 to 25 years ago.
- **Make sure that your Internet postings present the right image.** Many HR personnel will “google” the internet to learn more about a potential recruit. Facebook, LinkedIn, etc are all fair game and if not managed properly can present the wrong picture. A colleague of mine, who was also looking for a job, has the same name as her rabble-rousing cousin.

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SURVIVING A LAYOFF *CONTINUED*

During her interview she was asked to explain some of the information the recruiter found on the internet under her name. It turns out the information was about her cousin.

- **Be flexible enough to adjust or modify your job search requirements based on the feedback that you are getting from your job search.** When I started looking for a job I had a limited geographic area that I would consider and only would consider permanent positions. As the weeks turned into months I expanded my geographic area and started considering contract work. The job I finally landed is within my initial geographic region, but it is a contract position.
- **When my employment was terminated I also lost my health insurance.** I learned that when you go from an employer sponsored group policy to an individual policy it is likely that any pre-existing health conditions will not be covered. COBRA will allow you to stay in your employer's group for up to 18 months. However, the monthly premium costs will be more than 3 times the amount you paid as an employee.

One final word of advice - take advantage of your time off from work. It is not practical to expect to look for a job 8 hours a day. Remember to take some time for your hobbies or the other activities you did while working to relax. Spend some extra time with your family, especially if you are a workaholic like me who tended to sacrifice family time for work. Part of the layoff package from my former employer included access to training classes through an outplacement firm. I used those classes to complete the PDU requirements for my PMP renewal and also got a jump on the PDU's for the next renewal cycle.

Request a DPC SIG Membership Lapel Pin



As a token of the DPC SIG's appreciation for your participation in the SIG, we would like to send you a lapel pin. We encourage all members to wear the pin at PMI® chapter and international events and to look for, and network with, other DPC SIG members wearing their pins. Show your pride in the DPC SIG! Send an email to administrator@dpcsig.org.

Be sure to include your mailing address.

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BOOK REVIEW



Reinventing Project Management: *The Diamond Approach to Successful Growth & Innovation*

By Dov Dvir and Aaron Shenhar

Reviewed by Christopher Tarpley, Ph.D.

Reinventing Project Management by Shenhar and Dvir enters the project management literature at exactly the right time. In this era of failing projects, this book provides the prescription to improved success for project managers. DoD acquisition is changing and the ideas described in this book will help start large complex projects on the proper path and help keep them there. Recent research shows that 70% of projects fail. Many authors diagnose and suggest methods to avoid this failure. None to date have suggested what I think is a paradigm shift in thinking about projects as do the authors of *Reinventing Project Management*.

The Diamond approach provides an overarching framework that can guide project management at your company. Whether you are doing simple projects that focus on corporate efficiency or large complex system or system development projects, there is a spot in the Diamond Approach for your project. The discussions that lead to this philosophy are lucid and compelling.

Chapter 1 introduces the basic tenets of the authors thesis starting with statistics from recent studies showing the large percentage of failed projects and the cost to industry. The Diamond Approach is introduced and its four bases – Novelty, Technology, Complexity, and Pace – that will be used for this new project management approach are described.

Novelty measures how new the product is to its customers,

Technology measures how much new technology is incorporated in the product,

Complexity measures the intricacy of the pieces and parts of a product, and

Pace measures the amount of time available to complete the product.

Chapter 2 discusses the measure of a project's success and moves beyond the traditional measure of a project's success – on time, within budget, and within performance goals – the triple constraint. The authors suggest that it is necessary to use a more sophisticated model of project success based on five dimensions: Project efficiency, Impact on the customer, Impact on the team, Business and direct success, and Preparation for the future.

Chapter 3 gives a fuller description of the Diamond Approach and uses several examples (in fact the book is full of relevant examples that will be known to the reader) to illustrate how its four bases can help project managers identify the right strategy for guiding a project to successful completion. The authors map the four bases onto a graph called the NTCP diamond that clearly shows the impact of the levels of the bases on a project.

Chapters 4-7 dissect each of the four bases – Novelty, Technology, Complexity, and Pace. Each of the bases is broken into levels and the levels are described in detail with examples to illustrate. The relation of the base and its levels to the model of project success developed in Chapter 2 is described.

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BOOK REVIEW *CONTINUED*

The Novelty Base has 3 levels: Derivative, Platform, and Breakthrough.

The Technology Base has 4 levels: Low-tech, Medium-tech, High-tech, and Super-high-tech.

The Complexity Base has 3 levels: Assembly, System, and Array.

The Pace Base has 4 levels: Regular, Fast/competitive, Time-critical, and Blitz.

Chapters 8 – 11 take the ideas developed through Chapter 7 and put them to work in the organization. Chapter 8 discusses how businesses innovate and how to integrate the Diamond Approach into the innovation process. The NTCP diamond is used to help classify projects that are being considered for funding by management. The innovator's dilemma – disruptive vs sustaining technology development – is described in the context of this new approach.

Chapter 9 describes how to use the Diamond approach for project definition, project planning, and the NTCP diamond can be used to assess project risk. For complex projects, an adaptive approach is proposed for project execution and finally, the NTCP diamond is used to choose which projects may be outsourced. Of particular interest to me is the connection to Systems Engineering in this chapter through the discussion of product requirements definition and when to freeze a design.

Chapter 10 looks at the effect of the external market and the major industries on a project. The external market is broken into 3 categories (consumer, industrial, and government). Each of these markets have general characteristics that can be seen in the NTCP diamond and this sheds light on how best to plan for work in these markets.

Similarly, the effect of the major industry area (construction, equipment and devices, pharmaceuticals and health care, software, and processes) can be seen in the NTCP diamond.

Chapter 11 summarizes the Diamond Approach and proposes methods to bring these new ideas into your business. Several appendices describe the research leading to the approach described and extensive notes provide references for further reading.

Reinventing Project Management is sure to be a cornerstone of the next generation of project management theory and practice.

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MESSAGE FROM THE CHAIR CONT.

You can serve as an advocate by writing articles for or giving presentations at your local professional society—like PMI—about the construction industry. Additionally, many service organizations (e.g., Rotary International, Kiwanis International, etc.) would benefit tremendously if our members offered their knowledge and insights on proven project management methodologies that work. Closer to home, you would benefit yourself by expanding your own professional network, which may very well be the key in finding the next challenging job opportunity or contract.

No matter what path you take, from volunteering to serving as a mentor, or being an advocate, you will help inform others about our industry and the important role it has in improving the quality of life for many. Most importantly, you would be part of a growing team that is making a positive difference in helping to get the world economy working again. I cannot imagine any better way than what's proposed here to help everyone get through these tough times and be better from it.



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