Critical Success Factors & GAP Analysis in IT Projects

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Introduction: The identification of Critical Success factors for projects can cover everything from the business process itself, to the leadership skills of the Project Manager concerned, stakeholder management, and even the culture of the organisation of the project. GAP analysis leads more towards obtaining metrics to help identify where the project is heading, where it is going wrong, and how high the level of "success" attained at the end of the project actually is. This collection of articles is primarily IT-oriented, but there are some more general studies on CSF and GAP analysis included. See also related bibliographies on Quality Control in IT Projects; Project Success; and Implementing Project Management Offices (PMO's).

   Keywords: ERP; enterprise planning systems; success and failure.
   Abstract: Development of Enterprise Resource Planning (ERP) software packages during the past decade has turned the enterprise software market into one of the industry’s hottest and most volatile segments (Davenport). This article looks at critical success factors and also why some ERP projects have failed.

   Keywords: China; cultural differences; cross-cultural knowledge.
   Abstract: Global organisations must learn a different set of rules. With China’s recent ascension into the World Trade Organisation (WTO), multinational corporations eager to invest in the lucrative Chinese market must acclimate quickly. In China, project management can equate to relational mediation.

   Keywords: project success; project excellence; success criteria; project types; critical success factors.
   Abstract: Although there has been significant research on both project success criteria and critical success factors for projects, there has not been a concept defined that can link the two. This while the need to relate critical success factors to project success factors to project success criteria is identified in both theory and practice. The Project Excellence Model, described in this paper, is adapted from the EFQM-model and is a concept developed to fill this need. The Project Excellence Model is developed using research findings from both studies on success criteria and critical success factors for projects. The model consists of six result areas covering project success criteria and six organisational areas covering critical success factors. The PEM uses five different project types to describe the project organisation, giving guidance to the application of the model. The paper includes findings of a case study showing how the model was used to improve the performance of a project.

   Keywords: critical success factors; stakeholders; project success.
   Abstract: How are stakeholders and critical success factors related? How can a project manager define success and how can it help the project?

   Keywords: knowledge management; organisational learning; lessons learned; action learning; debriefing.
   Abstract: This article presents an overview of proven methods to record experiences from projects and discusses their use in project management. We distinguish between process-based and documentation-based debriefing methods. Process-based methods focus on a procedural approach to capture key learnings from a project. Documentation-based methods serve as appropriate representation formats or structures for project insights. The article bridges the current gap between theoretical insights into this topic and the managerial reality today. It discusses central project debriefing problems such as the lacking willingness to learn from mistakes or the lacking discipline in the use of project management manuals. We conclude the article with recommendations on how debriefing processes can be integrated successfully into project procedures.

   Keywords: critical success factors; health checks; managing projects; leadership; developing countries; China.
   Abstract: Project work in developing and emerging economies is complicated and unpredictable. It would be of great help to equip project managers with an easily applicable tool to assess whether the project is on the right track or not. A Project Evaluation Scheme (PEVS) has earlier been used on Norwegian projects. Data from 89 Chinese projects has been collected using the scheme. This article analyses the Chinese data and compares them to the Norwegian findings.
Keywords: information systems; information technology; IT; stakeholder expectations; critical success factors; CSF; software project management.
Abstract: For many enterprises success is closely linked to information systems and information technologies. Despite significant efforts to improve software project success, many still fail. Current literature indicates that most of the software project problems are related to management, organisational, human and cultural issues - not technical problems. This paper presents results of a survey of 36 software owners/sponsors, contractors/suppliers, and consultants on 12 projects. The empirical results address answers to questions related to success, performance metrics, and project business drivers. A lack of alignment on these critical issues emerges consistently by phase as well as across the entire project. The results of this study also are compared with others that span seven additional industry sectors. As a result, the authors have developed an approach that links project critical success factors to corporate strategy, and project metrics to the CSFs. An important finding of this study is the critical need to identify and manage realistic expectations of the stakeholders to achieve perceived project success.

Keywords: business failures; strategic planning; success in business.
Call Number: CON 40
Abstract: Deficiencies in strategic direction and in approaches to its implementation often result in company failure. Half of the Fortune 500 companies from 15 years ago have lost that status; many have closed their doors forever. So, how does a project management-using company find sustainable competitive advantage? This paper proposes a different approach to the problem.

Keywords: project management office; project success.
Abstract: This is the first ever large-scale research study of project management offices (PMOs). It investigates whether a PMO contributes significantly to project management effectiveness and, hence, to project success. The study also explores the degree of influence that the use of PMO functions and services has in addition to the influence of critical success factors (CSFs) identified by Pinto and modified for this study. Also, the study explores the circumstances associated with the establishment and use of PMOs, as well as major environmental conditions in which PMOs operate. Finally, descriptive statistics and qualitative features of PMOs were addressed, leading to practical guidelines for organizations already operating a PMO or moving to establish one.

Keywords: emotional intelligence; project performance; project failure; EI.
Abstract: Projects do not fail; people fail. Ninety percent of the critical success factors for project implementation can be enhanced through the application of emotional intelligence (EI). This abstract shows how to use EI to create a project environment where individuals can motivate themselves and maximize their potential for problem solving, team alignment, clear communication, leadership, and strategic decision-making.

Keywords: project success - evaluation; critical success factors.
Abstract: Success in life is not merely based upon what we know, but upon correctly applying the knowledge we have. This is a sequel to my PMI 2001 paper that was very well received in Nashville, Tennessee USA. The aim of this session is to examine three critical success factors in successful projects. You will be involved in an active exchange of ideas and experiences.

12. Carson DrJH. Managing in web time - or how to break the rules and win. ESI Horizons 2001;2(9):1-5.
Keywords: internet; web-time; IT; information technology; web projects.
Abstract: Critical success factors for today's small web-time projects include: strong leadership, a passion for the project from the project team, lightweight processes where productivity increased are seen through efficiency rather than brute force and employing short cycle interactive development activities to decrease the effect of constantly changing or creeping requirements.

Keywords: contracting out; monitoring; research, industrial; software measurement.
Abstract: The relationship between Sponsor Companies and CROs (Contract Research Organizations) is changing. Over the past 3 years outsourcing by pharmaceutical and biotech companies to CROs has increased 20% per year. CROs are increasingly required to document daily activities to sponsor. Management of interface activities between sponsor companies and CROs has become an essential and demanding activity.

CROs face a challenge in tracking and prioritizing multiple concurrent projects. A WEB based integrated project tracking system was installed at IBAH allowing over 110 projects to be tracked simultaneously. The projects are reviewed on a monthly basis and prioritized based on predefined metrics. Senior Management then reviews projects by exception, focusing on those issues that don't meet defined metrics. The 80/20 rule states that 20% of the projects are causing 80% of the problems. This system locates, identifies, and prioritizes the 20% of problem projects.
The methods required to design an integrated project tracking system will be discussed in detail along with the WEB technology. These methods will include identifying the critical success factors, tracking plan to actual, isolating key metrics, and designing trigger points. A secure WEB site allows the key data to be collected from the global staff, financial systems, and project managers. Data is downloaded to spreadsheets for analysis, prioritization and status colour-coding. Historical trending allows linear regression graphs to be supplied to management for proactive problem identification. This methodology facilitates posting results to provide visibility of continuous improvement efforts.

The original one-year implementation plan called for reduction of crisis projects to 0 and margins increase of 2-3%. These annual goals were achieved in only 6 months, showing the robust effect of this methodology. These results along with others will be discussed in detail during the presentation.


Keywords: success factors; AT&T; computer software industry - management; initiation; monitoring; planning; project plan execution.

Abstract: The causes of the successes and failures in software projects attempted over the years within AT&T are analysed from the results of operational assessments. These findings show consistency over the years, and have particular relevance to how these projects are managed. Data for this presentation has been gathered over several years from numerous reviews conducted by the AT&T Labs Technical Assessment Group in the Software Practices & Technologies Division of AT&T Labs, and its predecessors at Bell Labs.

The major subject matter explores areas at risk by project phase, with examples taken from actual projects. In the initiation phase, areas include business problem definition, executive sponsorship, project manager role assignment, estimation, COTS system use, and predetermined end dates. In the planning phase, issues involve the project plan vs. timeline, types of requirements inadequacies, unrealistic schedules (optimistic, too high level, or missing certain pieces), and critical "general" risks which are often not acknowledged.

In the execution phase, issues in communication, vendor management, and resources (churn, inexperience, shortages) are examined, along with process violations, shortened testing intervals, and ineffective prioritization. In the control and tracking phase, the areas are “tracking vs. control”, which involves issue resolution, change control, escalation, and risk contingency triggers; and issues around progress monitoring, including schedule detail level, updates, and integration. Some things being done well are then reviewed. These include increased use of tools facilitating project management and web-sites for communication, the consideration of alternatives involving technology, COTS, scale-downs, and phasing, and more project plans identifying risks, mitigation plans, objectives, scope, and status. Also covered are improved communications with users - understanding their business, strategy, changes, priorities, and time constraints - as well as more use of process, more training for and assignment of the project manager role, and good teamwork.

Next, trends seen in projects and the challenges these present are discussed, and are addressed by PMBOK Guide knowledge area. For procurement, these involve more partnerships and COTS system use. Increased business complexity affects scope management. Larger projects involving cross-organizational spans require more integration attention. Resources are impacted by continual shortages and churn. Time and cost are affected by decreasing budgets and time-to-market windows. Risk has increased, quality requirements are more variable and customized, and communication is even more critical due to more public commitments and increasingly complex organizations. In response, we need more sophisticated contracts, clearer PM authority, adaptable processes, and close attention to contingency plans, escalation, and communication channels.

Finally, some critical success factors are presented to address these problem areas and challenges. These include: empowering the PM; clearly defining the problem statement, success criteria, scope/boundaries, and functional and operational requirements; COTS use that is planned and matched to needs; use of realistic and updated schedules; accounting for all risks and tasks; acknowledging tools only as aids; and a focus on good communication.


Keywords: critical success factors; project scope management; quantitative risk analysis; resource leveling.

Abstract: Industry benchmarking has shown that the difference in cost and schedule between best and worst projects can be as much as 30% and the total cost of ownership over the life of the plant can be astronomical. In today's competitive business environment this can mean a difference between a profitable company versus the one that becomes a takeover target.

This practical paper addresses management of limited and scarce capital resources for consistent Pacesetter Project Performance. It begins with a Project Management Process and describes activities, deliverables and organization required to effectively manage these projects. Emphasis is placed on Front End Loading where a multi-functional team defines and freeze the scope of work prior to full funding.

Project Management Best Practices which help to optimize cost, schedule, performance and safety aspects of any project are also discussed in this paper.

Keywords: management - evaluation; project managers.

Abstract: Representing a breakthrough in thinking, this project successfully identified the critical factors that differentiate superior project managers. This large project emerged from a series of meetings with a New Zealand telecommunications company that outlined a need for a formalized assessment and development planning process for Project Managers across all business units as part of business process project they were undertaking. The client wanted to identify their competent project managers, and understand what made them different. Individual development plans were also produced.

Taking a phased approach, in Phase One, 87 people (and their managers) completed a competency based questionnaire. This questionnaire was developed by Winsborough Limited, and Project Plus Ltd and was referenced to a globally recognized set of project management standards.

Using these standards, a 'cut-off' was set and fifty three people moved forward to Phase Two. These participants underwent an in-depth competency based interview and also completed a psychometric test of managerial judgement (Scenarios test). This phase revealed a pattern consistent with the work from phase one. The second assessment identified a number of individuals whose competence far exceeded that of their colleagues.

The Scenarios test measures managerial judgement - a person’s ability to weigh up ‘real life’ situations and decide on appropriate and effective ways of handling them. The top group was significantly higher on overall managerial judgement but this difference was almost entirely attributable to their skill in people management. This pattern was consistent across all scales.

These results validated the competency model and suggested that selection of project managers ought to focus on people management, big picture thinking and the ability to clearly manage priorities.

In previous work to develop the specific competencies that identified superior project manager competencies as well as the project manager competencies used in this project, the hypothesis predicted three specific areas of importance in superior capability:

*Ability in dealing with and relating to people
*Ability to navigate through competing interests
*A "will do" attitude that translates into an unflagging commitment to the project coupled with a "can do" attitude that translates into unshakeable faith in their ability to achieve a successful outcome.

This project substantially confirmed the view that these factors differentiate the top participants from the rest. These factors should guide future selection, and guide development planning for all potential project managers and project directors.

Suggestions for improving overall bench strength included coaching, specific training in project and people management skills and developmental tasks.

This assignment provided a large number of highly useful outputs at each phase of the project for both individuals (development plans, capability graphs) and for capability planning at the organizational level (bench strength, gap analysis, recommendations for training). It was completed to budget, on time and to a high standard.


Keywords: Critical chain - Comment.

Notes: Excerpt from Proceedings of PMI Philadelphia 1999 Conf.


Keywords: quality; quality assurance; quality control.

Abstract: There is no such thing as a perfectly executed project. Each has it own set of obstacles and each has its own areas in which quality suffers. Successful engagements are those that continually measure themselves against a high standard in real-time as the project is executed. The goal is to catch areas of low performance and improve them before the project's close. A significant gap between the current state of the project and the desired state indicates improvements are warranted. However, improvements in project performance will result only when it is clearly understood what specific improvements are necessary and the impact those improvements will have on the project. In order to identify what specific improvements are necessary, research and investigation techniques must be used to assess the current state of the project and locate the problems. A sequence of activities employing assessment techniques is followed to organize the assessment process and result.

Quality Assessment and Improvement Processes and Techniques must be followed to place rigor in this practice. Lack of formal rigor in assessing quality, directly impacts the level of success any subsequent improvements may have. For without employing rigor, items may be missed or not fully understood, and hence the improvements may be incomplete or miss the intended goal. Quality Assessment and Improvement Processes and Techniques are presented in accordance with the information format of the Project Management Body of Knowledge (PMBOK): Description, Inputs, Techniques, and Outputs. The presentation also depicts the assessment and improvement processes as projects, in line with the project structure, phases, and processes of the PMBOK.

There are two fundamental processes that are described. The first process is to assess the existing and current quality of
Quality assessment and improvement processes and techniques contd...

the project. This process contains several subordinate processes that involve assessing various project quality items, compiling the assessment results, preparing an assessment report, and distributing and formally reviewing the assessment report. The second fundamental process involves taking prescribed actions to improve the quality of the project. This process contains several subordinate processes that involve establishing a quality improvement project based on the assessment report and the formal review. With each subordinate process, inputs, techniques and outputs are discussed to complete the overall objectives and mechanisms to be employed.

First, the "Assess Quality" process is presented. This process is initiated with a Quality Assessment Request, typically received from one or more project stakeholders. The first step is to assess the existing quality as measured against established project quality standards and best practices. Several quality items may be included in this assessment, for example, documentation, communication, schedules, cost baselines, project tracking, and skill levels. The quality items to be part of the quality assessment are reviewed and approved, by establishing an up front plan and schedule in which to conduct the assessment. Once the assessment plan and schedule have been formalized, interviews, audits, and inspections are conducted to ascertain the level of quality, the adherence to quality standards, and the observance to best practices being employed. For each quality item, an assessment report is written to discuss the audit's findings and recommended courses of action.

The Corrective Action Requested (CAR) forms resulting from the Assess Quality process formulate the inputs to the "Improve Quality" process. This process establishes and executes a quality improvement project to accomplish each CAR. In essence, the set of CARs form a Statement of Work for the improvement project. The project phases follow the project structure and processes as described in the PMBOK. Detailed plans and activities are scheduled, and the project is executed against the plan and schedule. Measurements are established to measure actual quality improvements and the effectiveness of the improvement project. Once measurements indicate that overall improvement objectives have been met, the improvement project closes. The application of formal Quality Assessment and Improvement Processes and Techniques has resulted in improved project performance and customer satisfaction. Problems in quality have been identified and corrected in real-time along with project execution.

Keywords: theory of constraints; TOC; critical chain project management; success factors.
Abstract: Critical Chain Project Management (CCPM) is getting some attention. While it is still early, some of the results from early implementations have been eye-catching. This paper reports the results of interviews with a number of managers closely involved in implementing CCPM. Lessons learned suggest there are a few simple steps an organization can follow to make great strides towards improved project performance through CCPM.

Keywords: IT; information technology; information systems; project scope management.
Abstract: How many times have we heard that IT projects fail due to poor requirements? In fact, this is a common dilemma. You will learn about a practical methodology to identify and deal with the universal problems of all information system teams - the functional gap, the release gap, and the vision gap. We'll show you how to deal with them and make them go away.

Keywords: communications; cross functional teams; team development; employee motivation.
Abstract: A no-nonsense template and set of prescriptions that have proven successful with over 150 project teams from around the world. Also, learn the major causes for lack of commitment to projects. Understand the role of the project manager as commitment leader. Learn what to do when commitment falters, and when it's appropriate to de-commit.

Keywords: Enterprise Resource Planning; Business Process Reengineering; Project Management; ERP.
Call Number: ART0015
Notes: Full article available.
Abstract: An ERP (enterprise resource planning) system is integrated software made of many different modules designed to address different parts of an organisation. ERP implementations affect many functional areas. On top of technical expertise, business process reengineering is always part of such efforts. These projects require highly competent individuals, and the project manager stands out as the most critical resource.

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