# The Seven Characteristics Of Highly Successful Projects[1]

*"The best we've done with large projects is to break even."*

This report was written in response to several client and management concerns. Typically, concerns revolve around meeting the three cornered project success criteria: Time, Budget and Quality. The challenge is therefore to determine how to achieve consistent, repeatable project success. Meeting this challenge is in part, why organizations establish a Project Management Center of Excellence (PM-COE) in addition to their Project Management Office (PMO). This problem / opportunity is not limited to big projects and large organizations, but is more visible with large or high impact projects. Our analysis has shown that many problems extend to smaller projects that we believe are in our "sweet spot." However such projects don't always attract our attention.

This report will focus on "lessons learned" from other organizations and can serve both as a resource for the Project Management Center of Excellence as it goes forward and as a basis for comparison in forthcoming project reviews. This is one of those "boil the ocean" challenges, so information has been wrapped this tightly into seven key points and rather than write a textbook on this subject, a one page summary of each point follows:

1. **A positive relationship with an active, intelligent client**

2. **Strong project management**

3. **Clear requirements, well managed**

4. **Ruthless change management**

5. **Pervasive process focus**

6. **Effective controls and communication**

7. **Technical leadership and excellence**

**Missing is the critical next step, an honest self analysis of projects.** An analysis based on these seven criteria is something that a PM-COE should consider as part of its continuing process improvement.

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[1] This report is based primarily on the author's project experience at General Electric, Bellcore and IBM.

# 1. A positive relationship with an active, intelligent client
*(Doing the right projects with the right clients.)*

- **Only enter into projects whose scope is appropriate for your business. Stay in your "sweet spot."**
- **Win-Win contract and a realistic project plan.**
  - *Comment*    This serves a basis for the relationship. Key to the win-win contract is a shared vision of the end system between the customer and the supplier.
    - o Shared vision and expectations – with well defined boundaries and reevaluation points.
    - o Managed expectations during the sales and contract negotiation leading up to contract.
    - o A fair and balanced agreement among peers pulling together towards project success.
    - o Clear delineation of responsibilities.
    - o Appropriate mechanism for making changes and funding of changes.
    - o Build accurate cost estimates (using cost models) – plan to best estimate, not to bid.
    - o Don't try to "buy the business" with under-resourced projects.
    - o Analyze risks and provide for risk contingencies.
- **Have effective escalation procedures for contract non-compliance and major issues.**
- ***Sy Syms – "An intelligent consumer is our best customer."***
  - o An intelligent client understands the risks within a systems development effort and will work with you to mitigate them.
  - o An intelligent client understands that unforeseen changes will take place during the development lifecycle and that dealing with change consumes resources.
  - o An intelligent client knows that limited requirements change is the natural order of things as a deeper mutual understanding of the resultant system evolves.
  - o An intelligent client understands your (supplier's) cost structure and appreciates the impact of changes, delays, etc., on your profitability and well being.
- **Build / maintain a positive relationship with an active, intelligent client.**
  - o Sales helps builds relationships – consulting furthers these through successful projects.
  - o Assure mutual respect among all stakeholders.
  - o Maintain effective, open communication. (See *#6 below.)*
- **Seek clients with a history of project success.** (As a negative indicator: Avoid …. )
  - *Comment*    A client with a track record of project failure must be addressed head-on during negotiations to determine root causes of previous failed attempts and to assure that measures to mitigate these risks are in place. (Or run away!)
- **Client decision makers who are actively engaged.**
  - o The client must want the project to succeed because they perceive it to be in their best interest. If the client or members of the user community fear the project or want it to fail, we have a significant problem that must be escalated.
  - *Comment*    Provisions for clear identification of client "chain of command" and decision makers must be spelled out in the contract.
  - *Comment*    Turnover of client personnel and potential risks / costs associated with same (such as delay due to vacancy) must also be addressed.

## 2. Strong project management

- **Strong Project management begins with a sound project plan.**
- **An effective project leadership team with clearly sufficient resources is in place.**

  *Comment*  In addition to a formal project manager several well-defined roles need to be staffed (see below.)  For large or complex project these roles may require single individuals (possibly with assistants) assigned to each role.  With smaller projects these roles remain, but a single individual may wear multiple hats.

  *Comment*  Staff doing "double duty" is a trouble indicator, especially when client or (sub-) contractor leadership outnumbers our team.  Results may include hasty decisions, inability to properly analyze situations, improper responses to issues. *Never get caught with too few players on the field.*

  o **Project manager** – overall responsibility for project to include ultimate responsibility for all subordinate project functions (below)

  o **Technical manager– Development manager –Testing manager** (Separately staffed as needed.)  Each reports to the Project manager.)  Each manages the team of specialists in their domain and serves as the external point of contact for their domain.

  o **Schedule manager** – someone who manages the project plan and schedule making (only) approved changes to the project plan using what ever tool has been selected.  This manager must be proficient with the project planning tool (e.g., MS Project.)

  o **Resource manager** – or spend manager – keeps track of the resources spent by the project team and compares them with the plan.  The resource manager may also be responsible for billing (in coordination with the project manager.

  o **Contract manager** – manages the contract and any changes to it.  Assures adherence to contract terms and identifies potential issues.

  *Comment*  The following roles require significant communication process and capability.

  o **Configuration Manager** – is responsible for all configuration elements.

  o **Change Manager** – (Role may be combined with configuration manager or requirements manager.)  Documents any requests for change, properly staffs these requests and approves any appropriate changes.

  o **Build Manager** – manages, monitors and approves all builds.  Serves as "Air Traffic Controller" during development and testing.

  o **Data Manager** – has full responsibility for all data, including all test data, as well as "live" data.  Our projects are data intensive, staff them accordingly.

  o **Requirements Manager** – owns the requirements database.  Also, owns the requirements change process (initiation, analysis, selection, assignment.)  Works with the project manager, the technical lead and the configuration manager to assure that the requirements change is assigned to a given release or revision.

  o **Documentation Manager** – Is responsible for the project control book (PCB).  All documentation must be within the PCB.  *(See #6 below.)*

- **Technical leadership should not be placed into situations where they are forced to make resource and / or business decisions such as change related costing decisions.**

3. **Clear requirements, well managed**

- **All functionality, non-functional requirements, constraints and assumptions must be clearly and unambiguously documented in a requirements database.**
- **In complex systems, requirements need to be assigned to specific releases or revisions.**
- **A rigorous requirements change process must be in place and must be adhered to.**

  *Comment*   Simply put, all changes to the requirements must use a single change process.

  *Comment*   Consistent with a customer comes first attitude, we must foster the ability to say "no" to any changes that do not originate within this process.

  o A proposed requirements change (or new requirements) is introduced to include:
  - The requirements stated as a "change to read" – i.e., "The wall shall be painted blue" as opposed to "I don't like the current green wall."
  - Requirements criticality – what is the effect of not having this requirement.
  - Linkage to other requirements.
  - Impact statements gathered from all interfacing systems.
  - Resource statement – estimate of resources necessary to implement the change. In cooperation with the resource manager – a statement of resource availability.
  - Location / Dependency statement – when / where (what release / revision) this requirement change would be implemented.
  - Schedule – schedule for implementing this requirement if it is approved.
  - Cost implications
  - Contract implications

- **A standing requirements review board with proper project leadership and technical representation should be in place to accomplish this rigorous requirements change process.**
  o Inputs change requests (per above)
  o Assures that the requests are analyzed to include impact analysis.
  o Determines when and how this change will be integrated into the system.
  o Makes the approval decision.
  o Assures proper notification to all impacted organizations.
  o Assures proper hand-off to the implementation organization(s).
  o Resolves all financial and resource issues.

  *Comment*   An approved requirement includes the final state of all of the above variables, signed off on by the appropriate project team leaders.

- During the warranty period reported defects must be found to be defects, not "back door" change requests – and must be managed accordingly via the change request process..
- **When entering into project with pre-existing requirements, the quality of these requirements (completeness, ambiguity, accuracy) is critical. Requirements quality needs to be assessed as part of the bidding process. Cost of reviewing and possibly revising these requirements must be included in the project estimate.**

## 4. **Ruthless change management**

*Comment*   Change management links closely with well-managed requirements, but is a superset of same.  Changes to design, architecture, environment, data, etc., not just requirements, need to be considered.

- **There must be a change manager (role) in place.**
- **A baseline must be maintained throughout the system lifecycle.  Changes are proposed against this baseline.**
- Scope Creep kills projects.
- **Any change to any element in the system must be undertaken within the change control process.**
- **All changes have costs.**  These include:
  o Analysis cost
  o Change cost
  o Documentation cost
  o Training / re-training cost
  o Administrative cost.

  *Comment*   Even changes that are rejected have cost – analysis cost.

  *Comment*   Provision for analysis of proposed changes must be included within the project plan.

- **Changes cost money – we need to get paid for analyzing proposed changes and for making those changes, even those resulting from "missed" requirements.  The cost of change management must be included in estimates and must appear in the contract.**
- **"Churn" thwarts project success.  Lack of clarity in requirements, architecture, solution approach, roles and responsibilities all lead to churn.**
- **Although all changes have costs, not all change costs are reflected in billing.  Some changes may be funded under existing contingency budgets.**

  *Comment*   The issue of who's going to pay for this change can become contentious.  It is separate from "is this change necessary?"  Effective leadership must assure that appropriate reimbursement is part of the change analysis process and must not be browbeaten into making concessions.

- **A Change Review Board should be in place.**  (See #3, Requirements)
- **Change analysis includes impact analysis – the impact of this change on other system elements and on the project plan.  This may require participation and timely input for managers of other system components.**  (See #3, Requirements)
- **Changes require appropriate approvals – and these must be timely.**

  *Comment*   Change management and requirements management are closely linked.

## 5. **Pervasive process focus**

*Deviate from established process at your own peril!*

- **All processes are well documented and in place.**
  - All project managers are required to be trained and certified in the company's project management methodology.
  - All project participants have sufficient training, appropriate to their vantage point, in this same methodology.
  - Adherence to the process is evidenced by artifacts (reports, etc.) that demonstrate this.
  - Detailed processes are in place for key areas such as lifecycle components requirements, design, development and testing.
  - Detailed processes are in place for key project management tasks such as change control and issue management.
  - Processes are maintained to include customization for new project types, enhancements resulting from lessons learned, etc.
- **Many process steps produce required outputs (work products) which are auditable.**
  - Quality Audits are performed that include a process adherence component.
  - Requests for process exceptions (process adherence relief) need to be justified and escalated to and approved by the senior quality manager.
- **There are no process shortcuts.**
  - Plan and manage resources based on the best estimate – not on price or other factors.
  - *Comment* Especially when working with tight budgets or in situations where we have discounted price (as a loss leader to gain a foothold) there is a tendency to try to cut corners. **Experience has shown that projects must be planned and managed to the "best estimate."** Managing to an artificial price often results in cost overruns beyond the original best estimate.
- **Accurate measurement is key to maintaining process focus.**
  - *Comment* What gets measured gets managed – what gets mis-measured gets mismanaged.
  - Capture *all* project related resource expenditures – billable and non-billable.
  - *Comment* This is in addition to accounting / billing systems required to run the business.
  - Non-billable work, such as unpaid overtime and "free" technical support must be captured. (1) to maintain a clear picture of the on-going project and (2) to provide a truer basis for future estimation.
- **Do not abandon process in times of trouble.**
  - Re-plan if necessary, but do not try to skirt around sound processes.
  - *Comment* Despite apparent short-term advantages, abandoning process and shooting from the hip inevitably leads to a downhill spiral of more problems and more rework.
  - *Comment* Sound processes can be a lifeline for troubled projects.

## 6. Effective controls and communication

- **Seize the initiative**

  *Comment*   Regardless of your role in the project (contractor, sub-contractor, systems integrator) seize the initiative.

  - Establish your leadership team
  - Attempt to install your processes as *the* processes for this project.
  - Develop a communications plan
  - Be active, not reactive – think three moves ahead

- *BAD NEWS DOESN'T GET BETTER WITH AGE!*

- **Build and maintain relationships and open communication with all stakeholder organizations.**

  *Comment*   There needs to be a designated leader / point of contact for each stakeholder organization.

- **Stay on message**

  *Comment*   Crisp external correspondence is critical

  - All non-technical correspondence with client and other contractors is to come only for certain designated individuals.
  - All technical correspondence must be reviewed / approved by the technical leader.
  - Critical correspondence such as status reports, project estimates, etc., requires review and approval by a second party (usually the project sponsor)

- **Maintain current project status** as well as current control of all actionable lists:  issues, requirements changes, etc. as described above.

  *Comment*   There needs to be a designated responsible leader for every action list and designated responsible individual for each action item.

  *Comment*   This includes status of all deliverables from both the client and from other (sub)contractors.

  - Provide adequate emphasis on critical items such as data in a data intensive environment.
  - Escalate and track "show stopper" issues.

- **Inadequate staffing (coverage) or insufficient staffing (workload / skills) both lead to project problems.**

  - Adequate resources in place on time.

- **Haste makes waste and leads to poor decision making**

  - Avoid working in "catch-up" mode.
  - Avoid making *rushed* decisions without adequate analysis and staff coordination.
  - Avoid making on-the-spot decisions or commitments regardless of pressure.

## 7. Technical leadership and excellence

- **Technical lead**
  - There must be someone, the technical lead, with a complete understanding of the technical environment, the architecture and the data and how they interact.
  - This technical lead is the go-to person for all technical questions. Also serves as a quality reviewer of proposed technical solutions or changes.
  - The technical lead must also have leadership and communication capabilities to ensure a consistent, positive influence on the technical team(s).

  *Comment*    Although a team each with a grasp of different parts of the elephant may exist, there still needs to be someone with a clear view of the entire domain.

  *Comment*    This is in addition to and separate from the technical management role. *(See #2 above.)*

- **Technical excellence requires stable products that are fit for the job at hand.**

  *Comment*    There is no substitute for technical excellence.

- **There is risk associated with relying on technology that is not yet fully in place and stable.**

  *Comment*    This includes reliance on features contained in forthcoming releases of software as well as the use of existing software in new, yet to be proven modality.

  - Better cooperation and teaming with technology product development organizations is vital when such technology dependencies exist. Firm internal commitments must be established to assure timely delivery of in process technology.
  - Risk must be recognized and contingencies must be developed.
  - Additional testing and test time needs to be planned into such projects.
  - Project plans and related communication must acknowledge this.

- **There needs to be an (internal) escalation process for dealing with both technical and non-technical (resource) issues that confront technical leadership.**

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So there you have it: Seven characteristics of highly successful projects. We need to customize these and apply these to our own projects. Again, a next step is to assess how we have done in the past.