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Project Management
Best Practices for
Maximum Performance
via Effective
Integration of Multiple
Disciplines

Project Management Best Practices for Maximum Performance via Effective Integration of Multiple Disciplines

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Introduction

During the past 60 years, organizations' operations have become more complex. In response, enterprises have adopted new management techniques, often using Information Technology (IT) as a vehicle to enable these new approaches to management. During the past 30 years, IT and non-IT Project Management (PM) also evolved and reached a stage of self-discipline with its own knowledge base. Yet, in contrast, project management's concepts of "Pre-Activity" (business analysis) and "Post-Activity" (business performance management) has only been around for about 10 years.

This discrepancy has caused a disconnect that is known as "Business/IT Misalignment." As a result, many projects have suffered. According to a report from The Standish Group, in 2009 24% of all projects failed, with 44% left challenged, and just 32% completed successfully (see figure 1). These failed or challenged projects translate to wasted time and resources plus lost opportunities for organizations, restricting them from meeting future business challenges and/or taking advantage of new opportunities.

Figure 1. PM Industry Performance Statistics 1994 to 2009 – *CHAOS Report**

	1994	2000	2004	2006	2009
Successful	16%	28%	29%	35%	32%
Challenged	53%	49%	53%	46%	44%
Failed	31%	23%	18%	19%	24%

- Successful: On time, on budget and with all promised requirements.
- Challenged: Off schedule, over budget, or does not provide all promised requirements.
- Failed: No product was ever used.

* The Standish Group – The producer of the *CHAOS Report* since 1994.

This white paper will highlight how project managers can utilize effective integration of multiple disciplines to achieve maximum performance.

Major Roles Evolution and Best Practices Framework

In a natural response, businesses have been seeking solutions to the Business/IT Misalignment. Professional organizations have surfaced to compile, publish, and promote best practices – often called a “body of knowledge.” Two new roles have evolved to compliment the project manager role. The two new roles and the PM role are:

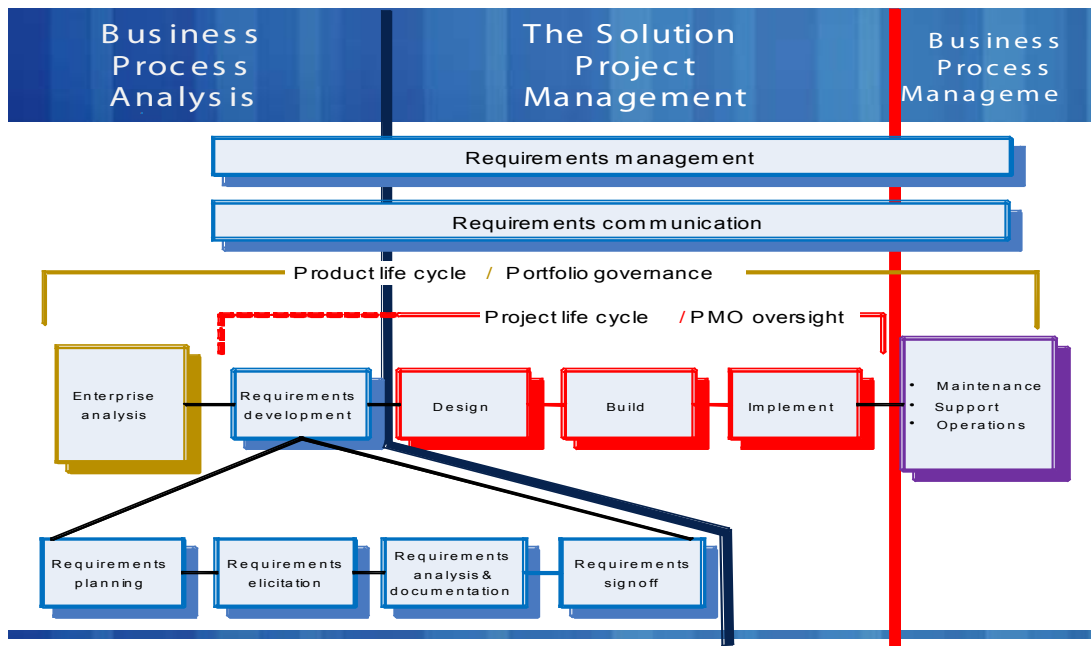
Business Analysis (BA)—coordinates the development and production of business requirements and solutions, as elicited from all related stakeholders. The results of these are “baseline requirements”, which are approved by all stakeholders. The BA continues to remain active during the “Project Management” and “Business Operation” phases to collaborate and communicate the business goals with the PM and stakeholders.

Business Performance Management (BPM)—focuses on business operations by deploying, monitoring, and keeping-up with the enterprise’s key performance indicators (KPIs). A BPM’s goal is to optimize the enterprise’s operations—subject to the given tools, resources, and environment—as well as recommend future maintenance and enhancements initiatives.

Project Management (PM)—manages the product’s design, build, and implementation as a result of and in compliance with the approved business requirements and solution, as governed by the stakeholders’ change-control procedures. The PM’s role is also subject to predefined Triple or Hexagon Constraints, which are described later.

A new framework has evolved to encompass these three roles, as depicted in figure 2.

Figure 2. BA, PM, and BPM Best Practices Sequence and Framework.



Project Management Structures and Body of Knowledge

Project management structures follow their particular application. They can be described as follows:

IT vs. Non-IT Project Management

While information technology projects might be the major recipients of PM, there are many instances where a business workflow requires PM to realign the workflow as needed. This could involve organizational flow, human resources, and other assets allocation.

Project vs. Program Management

Project management is the single recognizable activity for a targeted application, organized by one project manager and a number of project members who accomplish the targeted goal. Program management is the collection of related projects coordinated under one umbrella called a program.

The Project Management Office (PMO)

The PMO is the office that defines, oversees, and maintains the standards of project management. It is the source of documentation, guidance, and metrics on the practice of project management and execution within an organization.

The Project Management Institute (PMI)

The PMI is the organization that focuses on accumulating the industry's project management best practices. It issues the "Project Management Body of Knowledge", also known as the PMBOK. This knowledge base is widely used in the industry by project managers.

Project Management Organizations

Five popular PM organizations are known as:

Contiguous Organization

The PM is run within one department staffed to execute the project.

Matrix Organization

In matrix organizations, the project resources are shared, or borrowed, to execute the project.

Virtual Organization

The resources are spatially distributed and interconnect via some communication means, usually using electronics and the Internet to execute the project.

Co-Sourcing

An organization uses external resources to complement their internal resources and collaborate in executing the project under their own internal management.

Outsourcing

Is when the organization resorts to a total external resource, with external management, to execute the project according to a contracted set of specifications, terms and conditions.

The Project Management Constraints

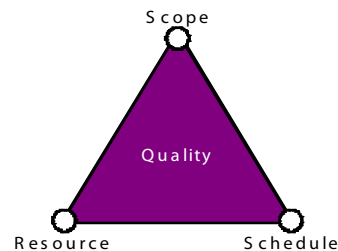
Triple Constraints

Classical PM is executed subject to three parameters known as the Triple Constraints:

- i. Scope
- ii. Resources
- iii. Schedule

This describes the constraint imposed on the PM by the scope of the project, the resources to be used and the delivery schedule.

Figure 3. The Triple Constraints.



The Stiffler Hexagon Constraints™

Darrell Stiffler introduced the Hexagon Constraints, extending upon and reordering the Triple Constraints as follows:

- i. Quality
- ii. Scope
- iii. Budget
- iv. Resources
- v. Risk
- vi. Schedule

In this case the Constraints emphasize the first priority as: "Quality of Deliverables," as expressed by the customer satisfaction." In addition, the budget of the project and the assessment of risk have been added to the traditional Triple Constraints.

Figure 4. The Stiffler Hexagon Constraints Model.



Communication for Leaders, Business Analysts, and Team Members

Leadership Communication

Maintaining an upper management periodic briefing is essential for the project success. This will ensure support and understating when adverse conditions takes place. Upper management could also be the key to bridge external difficulties. They are the PM partner in success.

Business Analyst Communication

The BA role is to collaborate with the PM on the interpretation of the pre-approved formal Business Requirements and to maintain the communication and liaison among all the stakeholders. This will enable the PM to focus on his/her main role and responsibilities and to delegate any issue of change or variation to the "Baseline" to the BA to coordinate with the stakeholders and the "Change Control Authority."

Team Members Communication

A critical factor to success is the proper allocation of roles and responsibilities first, and then to maintain team members' constant communication to anticipate work difficulties or other human factors affecting team performance. Planning and close observation of the day to day productivity and milestone is essential to spot if additional training is needed, change in role has become necessary or external expertise is needed. Nevertheless, this will provide a vehicle for effective performance appraisals to the team members.

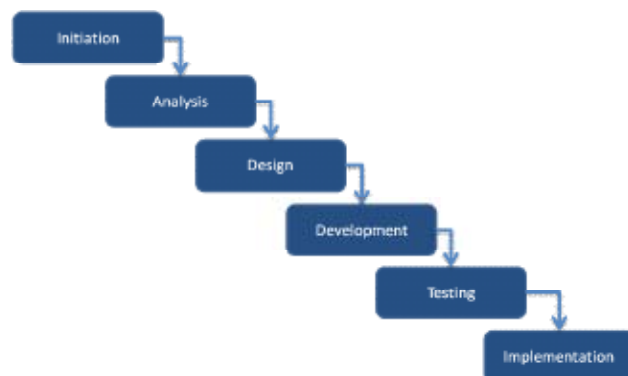
Project Management Environments

There are many PM environments, each suited to its particular application. In the following we briefly describe the four most popular.

Figure 5. Waterfall PM.

Waterfall

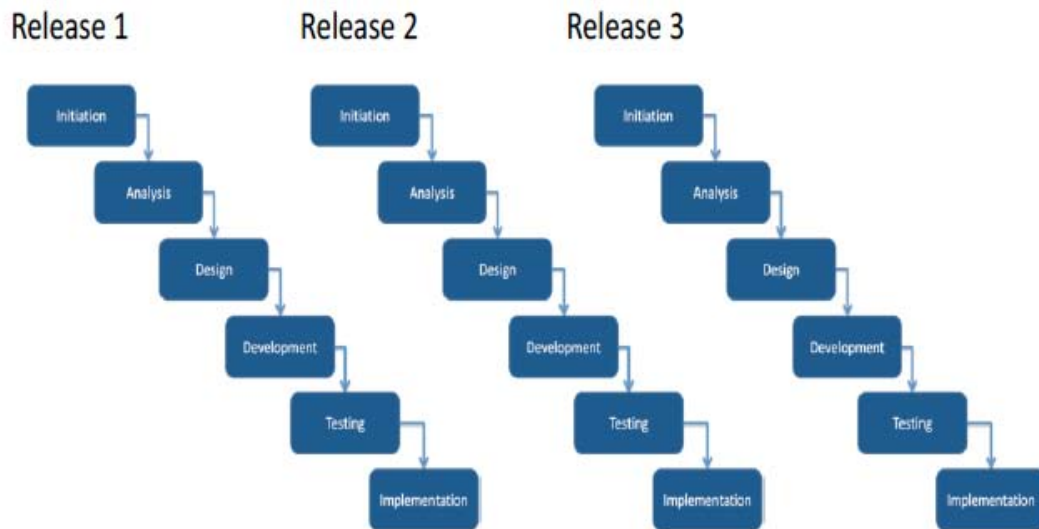
This environment is a one-way street, where Initiation, Analysis, Design, Development, Testing, and Implementation follow sequentially to the final delivery – When the system is well defined, such as for engineering systems that are subject to a well defined laws of physics, the changes are expected to be minimal and can survive a start-to-end without major changes. Figure 5 depicts the flow.



Incremental

Here the same Initiation, Analysis, Design, Development, Testing, and Implementation follow sequentially, but are broken into phases. When the system is not well define, such as for business systems, more changes are expected and as such this increment helps in absorbing the needed changes between phases. Figure 6 depicts the flow in phases where a release is expected at the end of each phase in an incremental form.

Figure 6. Incremental PM.



Agile

This method breaks tasks into smaller increments with minimal planning. Iterations are short time frames lasting from one-to-four weeks. Each iteration involves a cross-functional and self-organizing team working through a full software-development cycle including planning, requirements analysis, design, coding, unit testing, and acceptance testing when a working incremental product is demonstrated to stakeholders.

Service Oriented Architecture (SOA)

This method makes use of functions deployed in a “Service Oriented-based Architecture”, which provides a loosely-integrated suite of “Services” that can be integrated from multiple business domains. SOA separates functions into distinct “Services”, which developers make accessible over a network. The users will combine and reuse these services during their Applications run. These services and their users communicate by passing data in a well defined, shared format. When the Internet is used as the communication network, greater interoperability and more independence from proprietary software is provided and freed for use by any service-based technology.

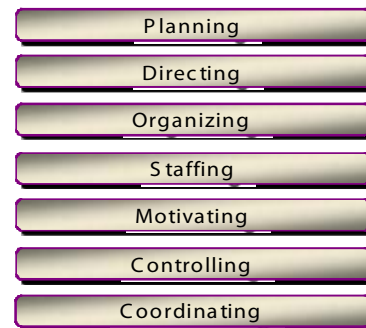
Project Management Performance

This section outlines the PM performance parameters that lead to a successful PM.

PM Main Activities

The main PM activities needed to lead Complex Projects is depicted in Figure 7. Keeping a balanced and proactive approach can solve PM difficulties in the face of the future unknowns.

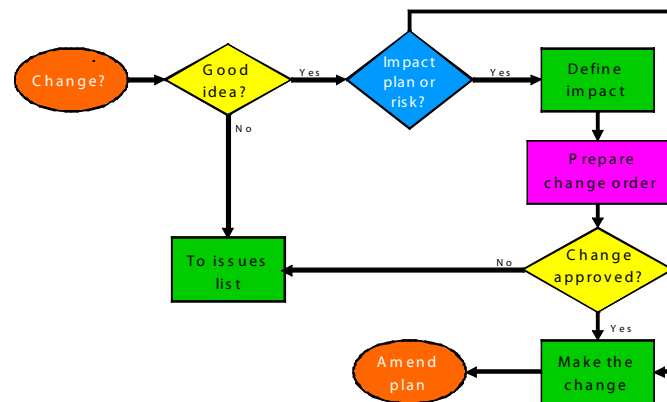
Figure 7. PM Main Activities.



Change Control Management

Inevitably, it is known that the only constant is "Change." After establishing the "Baseline Requirements," if a need for a project change is requested, a change control procedure is invoked. The procedure is governed by a "Change Control Authority" to reflect all stakeholder interest. Figure 8 depicts a procedure that can determine the denial, approval, or accommodation along with the plan amendments.

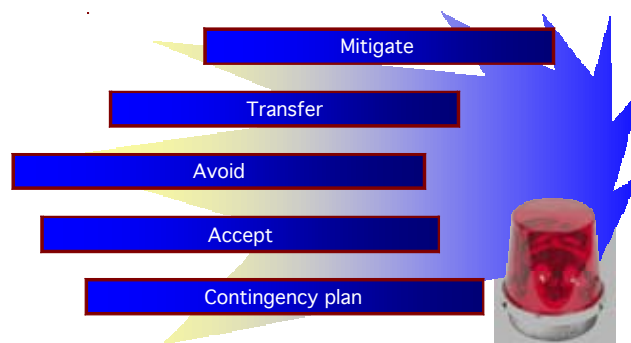
Figure 8. Change Control Management



Risk Management

Project risks are handled proactively by determining the probability and impact if the event takes place. Mitigation considers the transfer of risk, avoidance, acceptance, and remedy. Risk identification, impact and mitigation are the inputs for the Contingency Plan.

Figure 9. Risk Management.



Project Audit

- Scope Baseline
- Schedule Baseline
- Cost Baseline
- Resource Baseline
- Change Control
- Quality Control
- Risk Management

Project Recovery

- Identify: Symptoms & Causes
- Redefine & Agree on: Goals, Objectives & Priorities
- Generate: Options & Recommendations
- Agree on: a Recovery Plan

Quality Management

Plan Quality for:

- Availability
- Capacity
- Accuracy
- Response Time

- Usability
- Interoperability

Perform Quality Assurance

Perform Quality Control

Acceptance Testing

Establish:

- Standards
- Policies
- Procedures

Determine :

- Environment
- Tests scenarios
- Metrics
- Testing process

Execute the Testing Process

Document Tests:

- Issues
- Results

Training, Support, Pilot Test, Roll-Out, and Final Delivery

Training & Support should be delivered in ample time before the Pilot Test is ready. Thereafter it is expected that reasonable knowledge has been gained and all major rough edges in training, support, and critical malfunctions have been cleared. Senior management should be prepared and involved a-priori since a wider area of users will be affected and could impact live operation adversely. Calculated risk and mitigation should be deployed. Incremental roll-out should be exercised to enable adequate control while clearing unexpected problems or issues. Once enough confidence has been developed, final delivery and sign-off can take place to a full production.

Postmortem

Going through the PM experience, time, and effort for a project deserves a postmortem to provide feedback for the good and bad of a project. Postmortems should be conducted after both key projects stages and after the final delivery. Document lessons learned for future reference, plans, avoidance, and mitigation. Nonetheless, the good should also be emphasized, to take advantage and reuse the best experiences and practices.

Conclusions and Recommendation

In this white paper, we attempted to highlight the historical state of affair of PM and the impact of the increasing complexity of today's enterprises. A disciplined collaboration between the BA and BPM has become a prerequisite for success. The PM is no longer in a silo, buffered from the business environment, except at delivery time where customer satisfaction, as well as stakeholder satisfaction, is the true measure of success.

The BA is the agent to coordinate the business analysis, communications, and solutions requirements development, as elicited and approved by all related stakeholders. The PM is included as one of the stakeholders to contribute and approve the feasibility of the requirements. The result of this stage is a formal requirements document reflecting the stakeholders' needs and the feasibility of the project. The document is called a Baseline Requirements Document. Thereafter, if any change or variation is discovered, or demanded, a change-control authority is exercised to resolve the change issue and assess its impact on the project and the business. Note the PM does not start until the BA phase is complete and the "Baseline Requirements" are approved by all the stakeholders including the PM.

You have been taken on a fast tour of how to achieve maximum performance with your project via the integration of the best practices of multiple disciplines. The tour covered the major, related roles and evolution of the best practices framework, PM's various structures, PMI's PMBOK®, the PM Organization, the Triple and Hexagon Constraints, Leadership, the importance of the BA and team members' communication, and the governing PM's environments and performance.

You should now be equipped with a map to seek further in-depth knowledge and practice, in your specific area of interest, to achieve and maintain your desired level of PM excellence.

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About the Author

Dr. Sam Arafeh, is a senior instructor at Global Knowledge. He has over 30 years' experience in Business Analysis and Project Management in public and private enterprises, managing and directing business applications from inception through implementation and operation. He has total involvement experience in enterprise architecture, analysis, strategic planning, business organization, development, and IT management. He is also affiliated with Systems Engineering & Management (www.ieSEAM.com), a consulting firm in Rolling Hills, California providing management and technical services to major Fortune 500 companies. He was one of top executives who took a 30-years old private company public in 1996. He has held various positions in the US and abroad, and

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