

# Identifying Best Practices in Information Technology Project Management

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## Abstract

"Identifying Best Practices in Information Technology Project Management"

This paper documents Project Management Best Practices specific to the Information Technology sector. The paper is the culmination of research efforts [between January & April 2003] performed by diverse industry practitioners as part of their individual academic pursuits in Project Management, Business Administration, and Continuing Education Graduate Programs at the University of Calgary. The research team gathered information through an extensive interview process that involved eighteen Project Management professionals from various industries within the IT sector (including telecommunications, construction, software/hardware, and finance). These project management professionals were in various levels of management (project managers, directors, and senior executives) and were also part of projects that spanned the globe (including Canada, USA, Asia and the Middle East). The purpose of this paper is to communicate Project Management practices in use today, the advantages and consequences of such practices, and the skills sets that must be explored in an effort to contribute to the progressive evolution of Project Management.

**Keywords:** Project Management, Project Management Taxonomy, Information Technology, Risk Management, Best Practices, Cross-functional Teams, Cognitive Dissonance, Diversity Management

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**Executive Summary**

This document identifies the results of a team research project conducted by industry practitioners attending the University of Calgary in Alberta, Canada. The research involved observing, recording, and analyzing Project Management best practices within a specific business sector: Information Technology. In a manner consistent with industry practice, the team members had not been hand selected, but rather assigned by a third party (in this case, the project sponsor).

The research found that while there is a continued focus within Project Management circles to find improved methods which can be applied on a tried and proven basis for all situations, our team's research analysis indicates that Project Management is not scientific in nature - i.e. is a practice which cannot apply scientific type testing regimes to arrive at best practices - and that arriving at consistent Project Management practices is somewhat of a utopian concept.

Rather, our research team position is that organizations help facilitate personnel's focus on developing effective and efficient skills set that will allow them to formulate and execute Project Management practices by understanding internal and external processes rather than relying on a set of prescribed "*best practices*" that should be followed "*just because many others do it*".

The research team arrived at this conclusion by interviewing 18 individuals whose employment

responsibilities revolved around principles of Project Management within the IT industry. The interviews covered eight major sections: Project Selection & Reselection; Risk Management: Commissioning; Project Teams & Organization; Planning & Scheduling; Project Controls; Stakeholder Management; and Procurement & Contracting. Key concepts or 'critical nuggets of information' were identified and categorized within a Project Management Taxonomy.

During the consolidation of information into the Project Management Taxonomy, common threads of observations and recommendations were identified as skills set which help formulate best practices within the IT Industry. These skills set were then classified into three identifiable themes:

#### Organizational

- Knowledge Management
- Continuous Improvement
- Corporate Policies and Governance
- Scalability of Practices
- Cross Functional Teams
- Edification

#### Team

- Focus
- Team Members
- Team Processes: Front-end Planning
- Team Life
- Good Communications
- Risk Registration and Documentation

#### Individual

- Personal Processes: understanding cognitive dissonance, cultural competence, and diversity management.
- SAP (Sociology / Anthropology / Psychology) Implementation: Implementing aspects of sociology, anthropology, and psychology

This classification will provide Project Sponsors, Industry Leaders and Project Managers with a framework to assess Project Management improvements.

# **Introduction**

The following sections detail a synopsis of findings from research and observations of Project Management best practices within the Information Technology industry.

## **Purpose**

The purpose of this report is to identify skills set which help formulate and execute best practices in IT Project Management. These best practices are the culmination of individual survey results, personal experiences, academic lectures and literature review.

## **Contextual Definitions**

### **What is Project Management?**

Project Management is a set of tools, processes, and competencies utilized by people in order to enhance an organization's services and practices.

### **What are Best Practices?**

Best practices are those strategies, activities, or approaches that have been shown through research and evaluation to be effective in a given discipline, area of study, or application (Tech, 2004).

## **Methodology**

### **Introduction**

This report has been prepared to identify current project management best practices as observed within the Information Technology industry. The preparation of this report involved a series of individual surveys, where each of the six members of the research team met with three individuals from the IT industry and whose employment responsibilities revolved around Project Management practices. The findings from each interview, along with the necessary baseline research to prepare for these interviews, has been incorporated into this final report.

### **Background to Individual Sections**

In order to break down the task of analyzing Project Management practices into reasonable sized deliverables, with such deliverables having consistency amongst other research efforts around principles of Project Management, it was decided by the Project Sponsor that research should be conducted on the following eight sections:

Project Selection and Reselection;

Risk Management;

Commissioning;

Project Teams and Organization;

Planning and Scheduling;  
Project Controls;  
Stakeholder Management; and  
Procurement and Contracting.

Given that the research team has six team members, there were two topics that were covered off by more than one team member in order for this report to addresses all eight topics.

## **Consolidation of Individual Reports**

The process to consolidate the results of our individual reports included:

- Further condensing individual reports to highlight only the most important aspects;
- The author of each report describes his/her section and key aspects to the team members;
- The team members actively listen and extract concepts that may be applicable to their particular area or in general. The team applied various techniques while extracting concepts, including:

Goal Analysis - Cause & effect of a desired outcome that is due to certain successful behavior;

Brainstorming - A mental trigger to identify successful behaviors; and

Decomposition - High-level breakdown of a concept and how it relates to others.

- These key concepts become candidates (i.e. "*nuggets*") for best practices in IT Project Management;
- Analysis of key concepts to identify patterns of behavior and a structure for representation.

The result is a Project Management Taxonomy that categorizes the key findings of the individual reports along with an outline of how these align with the overall analysis of the IT industry best practices.

As part of the consolidation of information into a common framework, common threads of observations and recommendations are identified. The result is section Consolidated Observations, which captures an overall view to the PM practices within the IT industry. Our research team strongly believes that these "*common*" threads would have been difficult to identify had we not performed the steps outlined in Consolidation of Individual Reports.

## **Project Management Taxonomy**

### **Theory & Background**

The eight project management knowledge areas have already been captured as individual reports.

The following sections reiterate the knowledge areas insofar as highlighting the results and identifying key concepts. Note: This report does not subscribe to the notion that the eight knowledge areas are strict boundaries to Project Management methodologies.

## **Project Selection and Reselection**

The project selection process is a mechanism used to approve or deny proposed projects. Though the process to make this determination varies between organizations, the intended output is consistent. It is at this critical juncture that project merits are evaluated against a variety of criterion in order to gain the approval to use corporate resources to deliver a beneficial result.

## **Planning and Scheduling**

Research analysis of literature in the IT industry, including the expertise of James Baar (2002), suggest comments as, *"plan, plan, plan is far from being overused, over stated, or overdone"*.

## **Risk Management**

Risk Management deals with reducing the likelihood of an undesirable outcome. It encourages the use of processes that identifies, assesses, classifies, plans, tracks and mitigates risks. Companies are compelled to find ways to better anticipate the outcome of a Project and not repeat the same mistakes and become one of the failure statistics as identified by the Standish Group (CHAOS report, 1994).

The CHAOS Report (1994) also reported the following figures:

- 31% of IT projects are cancelled;
- 53% is partially completed with only 61% of its original functionality;
- 16% are completed on time, on budget, and on-capability.
- Of those not delivered on-schedule or on-budget:
  - Average budget overrun is 189%;
  - Average schedule overrun is 222%;

## **Project Controls**

Project Controls is a broad heading, which for the purposes of this report has been split into Scheduling, Estimating and Budgeting, with the latter being applicable to the previous two.

In general terms, Scheduling is merely deciding in advance when and where work will be performed - it is a TIME decision. However, the scheduling process is usually connected with scheduling systems, policies, techniques and/or devices. In this context the scheduling process centers on (Harroff, 1995):

- Time to do the work,
- The department which will perform the work,

- The resources to be applied,
- Status of work progress versus work scheduled,
- Monitoring and reporting.

Estimating is a fundamental part of Project Management such that an IT World special report suggests: *"Estimation can influence whether a project lives or dies."*

The following are definitions adapted from the glossary of PMBOK (1994):

- **Estimate** - A quantified assessment of the resources required to complete part or all of a project, the prediction of the quantitative result. It is usually applied to project costs, resources and durations.
- **Estimating** - The act of combining the results of post project reviews, metrics, consultation and informed assessment to arrive at time and resource requirements for an activity.
- **Budgeting** consists of a financial and/or quantitative statement, prepared and approved prior to a defined period, for the purpose of attaining a given objective for that period. It is the planned cost for an activity or project.

## Commissioning

Project Commissioning practices are integral within the IT industry. Project Commissioning can be as simple as installing word processing software on a single computer or as complex as deploying an Enterprise Resource Planning system into production. The difference in magnitude between the two scenarios is obvious; however, both eventually rely on some form of a commissioning process.

## Stakeholder Management

Mitchell et al. (1997) suggest that it is essential to remember that stakeholders' attributes are not in a constant state and can be acquired, lost, or altered. These attributes are socially constructed and the stakeholders' intentional exercise may or may not be present. Therefore, knowledge of the activities associated with each stakeholder typology is essential to proper Project Management. Mitchell et al. (1997) also outline three main groups of stakeholders according to the power, urgency, and legitimacy attributes of latent stakeholders, expectant stakeholders, and definitive stakeholders. This is shown as follows,

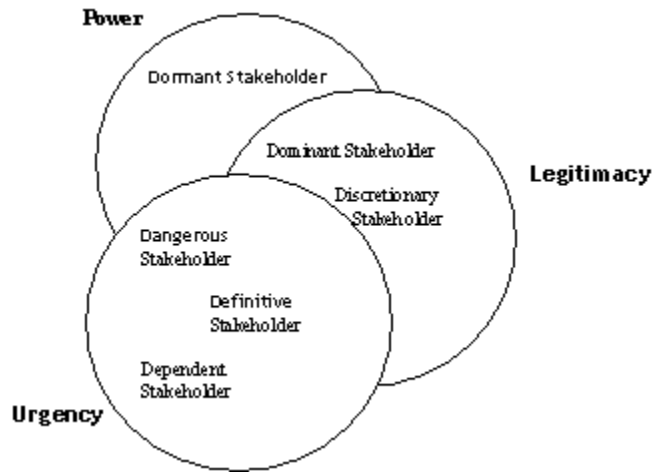


Figure 1. Stakeholder Groups

## Project Teams and Organization

Effective teams enable organizations to achieve the high levels of performance that are essential to survival and prosperity in today's extremely competitive and rapidly changing environment (Huber and Glick (1993) in Robertson & Tippets, 2002). The long-term benefits of successful teams include higher performance, increased morale, and a strong commitment to the mission of the organization that can withstand almost any kind of adversity (Katzenbach and Smith (1993) in Robertson and Tippets, 2002).

## Procurement and Contracting

David Burt (1984) noted in his book, *Proactive Procurement*, that procurement of materials and services is a process that cuts across all organizational boundaries. Most organizations will have a purchasing department that handles the acquisition of goods and services but this department can generally not initiate an acquisition process without consulting with other parts of the organization to obtain technical details / specifications etc.

Furthermore, the manner in which goods and/or services are acquired can also vary. Acquiring can depend on the value of the goods, the degree of technical complexity and the potential critical nature of the acquisition. This is especially true if the goods and/or services being acquired form a key component or key process.

However, as Burt has identified, quality has replaced price as the key to increased market share and profit margins. It is becoming more apparent that the cost of having to go back and re-do some work, which was not completed properly or to replace a failed component, is something that should be avoided.

Burt has also identified another key and critical component in an organization's procurement process. This would be the decision to build an object or to acquire it from a third party. A great deal of evaluation needs to be put into the advance planning steps of a potential procurement as this can be compared to the overall SMART management process. This last point is relevant to the IT industry where it needs to overcome the debate on whether to deliver solutions using internal and/or external resources.

# **Identification and Assessment of PM Practices and Concepts**

## **Project Selection and Reselection**

Project Selection and Reselection Process provides a critical expedient mechanism to ensure Projects that make the most business sense for the organization can move ahead and, those that should not move ahead are stopped.

Competition to obtain project funding is becoming increasingly fierce. The tendency to overstate benefits to tilt the scales in favor of edging out the competition is commonplace in many organizations. A reconciliation between benefits realization and benefits claimed needs to take place in order to keep the up-front benefits claim in check.

The processes and financial models used to evaluate project proposals vary between organizations. It is important to recognize that these processes are not perfect and are a candidate for continuous improvement. A continuous improvement model will help to ensure the long-term viability of corporations' projects as a whole, as well as help to maintain corporations' competitive advantage in the market space.

## **Planning and Scheduling**

Respondents were asked if the contractual arrangements with their suppliers also include the need for the suppliers to provide any form of Project Management practices such as: progress reporting, preparation of schedules, cash flows etc. Interestingly, none of the respondents indicated that they ever put any such requirements into their contracts.

It would likely be a better practice if the respondents would give consideration to the inclusion of these forms of requirements within the contractual arrangements for major acquisitions and/or key/critical acquisitions to ensure that the expectations of the buyer are clearly understood up front.

## **Risk Management**

There is a substantial amount of research regarding the managing of risks in Projects. The textbook approach attempts to classify and categorize risks by understanding the mechanics behind it. The semantic meaning of Risk and its management has a common meaning that is understood and known. It begins with identifying events that could produce an undesired outcome that is further analyzed for severity of impact, probability of occurrence and a timeframe. A more quantitative approach involves assigning numerical values against impact and severity to determine the level of exposure and also simulate risks.

However, the results of the survey show that a formalized semantic definition of Risk is largely absent. Project Managers rely more on personal definitions/experiences or a simple definition. This seems to be sufficient in handling the majority of risks from both a Business and Technical perspective. Nonetheless, it is apparent that the size of the Company and complexity of the Project affects the degree of formality in Risk Management. This translates into defined processes and procedures on the exact steps in managing risks throughout the lifecycle of the Project. However, it is difficult to answer the question of, *"How much Risk Management is effective in managing risks?"*

## **Project Controls**

Within project controls, risk is often a concern. For instance, initial software estimates and schedules should be looked on as high risk due to the lack of definitive information available at the time they are defined. In one particular interview, an interviewee stated: *"The largest difference that I see between IT and traditional industries is that software development is largely cerebral. This leads to a greater risk in the unknown impacting the project."*

To combat this risk, respondents suggested two essential factors. The first is to maintain well-defined requirements, as evidenced by the following statement: *"Another failing in IT that I've seen is the lack of well-defined requirements and requirements that are open to many interpretations. In addition to that, scope-creep is a common killer."*

The second factor is to keep the scope of the project on track, often highlighted by having many interim milestones. This is evidenced with the following statement: *"Although traditional projects may suffer from inaccurate estimation as well, I believe software development is more susceptible to a slipped milestone turning into the snowball effect. It's crucial to keep those interim milestones on track"*.

## **Commissioning**

It is recommended that planning for the Project Commissioning process begin well in advance of the project product completion milestone. This in itself helps to mitigate risk by anticipating what needs to take place in advance. Perhaps the greatest benefit that can be realized from the practice of Project Commissioning is the knowledge that is gained as a result.

The Commissioning Process can be leveraged in an effort to increase the user acceptance of the delivered product. Testing of the delivered product in the production environment prior to final release can help prevent initial displeasure with the product, especially if there are immediate term production problems. Involving key stakeholders in this testing process helps to establish buy-in and manage stakeholder expectations.

## **Stakeholder Management**

The first impression that project stakeholders have of the project product is critical to its success and acceptance. Proper Project Commissioning will increase the likelihood of acceptance by reducing risks and managing the expectations of the stakeholders through training and involvement in the process.

Organizations need to enable themselves to reposition the definitive group of stakeholders from a swing group to an offensive group. This will facilitate the group towards the benefit of the project.

Substandard communication has been identified as the primary reason for project failure. Project failure is categorized as not meeting stakeholder expectations because stakeholders are ultimately responsible for voting on whether the project is a success or failure. If stakeholders are communicated to on a regular basis they are more capable of adjusting their expectations and can deal with problems or roadblocks encountered during the project life cycle. Consistently and continually communicating with stakeholders increases the potential for project success.

## **Project Teams and Organization**

Team selection is a highly important aspect within project management. There is a substantial amount of literature and research has been devoted to this topic. Unfortunately, for many 'project management is a resource - these types of luxuries (hand-picking team-members) do not exist in the real world'. Prominent characteristics that both survey and literature deem desirable include technical competency and interpersonal communication skills.

The challenge, according to industry professionals, lies in being able to effectively communicate alignment: objectives of the project with personal, professional, and the organization's objectives. Though both literature and the survey results suggest varying resources, general strategies include the use of work breakdown structures (WBS), biweekly project status reports, and consistent communication between management and employees.

## **Procurement and Contracting**

Analyses of the interview results suggest that limited formal structure exists with respect to procurement and contracting within the IT industry. This becomes more apparent when compared to the practices undertaken by other industries, such as construction and infrastructure development, or with established industries such as manufacturing.

Nonetheless, consistent with theoretical approaches, the procurement of material and services is a structured process that spreads across all organizational boundaries. The findings of this project demonstrate that the structure appears to be less rigid than it should be. This can be attributed to different industry drivers that exist within other industries.

An IT organization will rely heavily on the skill sets of its Project Management teams, requiring teams to operate efficiently within a less rigid administrative structure.

## **Consolidated Observations**

### **General Background**

The respondents to the surveys represent a cross-section of the IT industry. This provides a reasonable degree of comfort knowing that the observations highlighted within this report and identified in greater detail within the individual reports, are in fact an accurate representation of IT industry related project management practices.

Although the research team is confident in the assessment of the best practices within the IT industry that has been put forth, we also recognize that the survey is limited to a total of eighteen respondents and the overall assessment would obviously benefit from a more comprehensive survey.

### **Background of Respondents**

The respondents' organizations range from a small company (20 employees +/-) performing mechanical & robotics software design to large nationwide telecommunication service providers (40000+ employees). The roles of the individuals interviewed include:

- Technical leads;

- Directors / Executives;
- IS Managers;
- Project managers; and
- PMO specialists.

## Best Practices

Section 2 details steps in assembling the results of our Individual Reports, completing analyses for patterns of behavior and synthesizes a framework to help identify skills set which help formulate best practices. The result is a classification scheme where skills sets are identified and the scheme is detailed as follows:

**Organizational** - This involves practices that has a positive impact at the Corporate level;

**Team** - This contains practices that has a positive impact at Group or Tribe level; and

**Individual** - This contains personal practices that a single individual can perform to make a positive impact to the Project.

The reasoning behind this classification scheme is as follows:

Maintain a Project Management perspective that involves people, tools, and processes; and

Keep it simple such that it can be easily applied;

Certain best practices may be applicable to more than one classification that would suggest an overarching best practice. The main intent is to understand how a given skills set affects Projects at various levels such that we can be aware of its effectiveness.

## Organizational Practices

### Knowledge Management

Perhaps the greatest benefit that can be realized from the practice of Project Management is the knowledge that is gained as a result thereof. Knowledge Management is one way to provide others with experience that is known by the organization. It can help to dramatically mitigate risks by allowing the pitfalls of previous projects to be exposed and understood. *"Corporations that embrace Knowledge Management for Project Management can expect productivity of application development increases of 40%."* (Murch, 2001)

There needs to be a central repository for Project Information so other Projects can benefit. This Body of Knowledge also contains metrics on previous Project performance and techniques used. An analysis on the data for patterns of success and failure is important to highlight but to also not rely on the pure *"numbers"* and always apply common sense. The result of Knowledge Management is to elevate the bench strength of both the team and the organization through feedback mechanisms and leveraging experience.

For example, the Time Metric is used to analyze *"the time"* allocated to different areas of the

project and different tasks and the variance from the estimate to the actual was used to revise upcoming tasks, and the Defect Metric is used to help determine the expected number of bugs and used as guidance to set lower bug targets by analyzing why the bug existed (then focusing on that area for correction). In practice, getting the right set of metrics and actually the logistics of gathering the information is the difficult part.

## Continuous Improvement

For continuous improvement to be effective the processes that are in need of improvement must be repeatable. Repeatability is an underlying principle that forms process. A successful process is one that yields the same results no matter which people are executing the process; this is an ideal scenario that is very difficult to achieve.

The following Illustration shows the IT Governance Continuous Improvement Cycle.

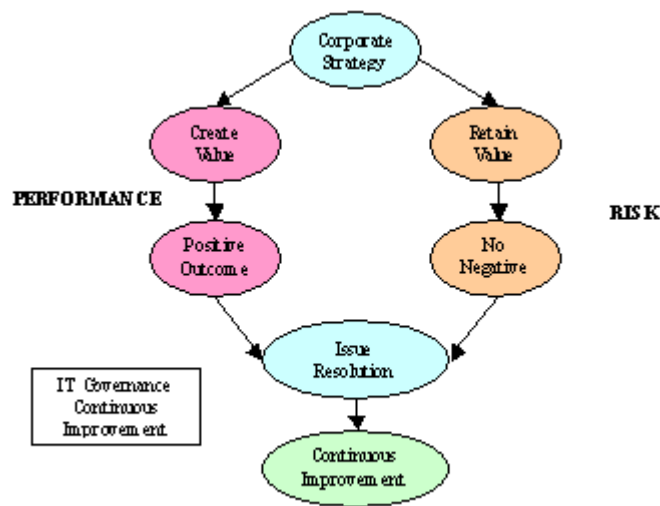


Figure 2. Continuous Improvement Cycle

## Corporate Policies and Governance

All organizations need processes and procedures that provide guidance to individuals. However, it should not be dogmatic in the face of common sense and its application. Individuals must be aware of when to use certain practices and abandon others; otherwise the mandatory exercise of following processes will yield undesirable results. A Company cannot have ivory tower processes that must be followed if they do not make "sense" or bring any value. DeMarco & Lister (1999) stated, *"The last project generated a ton of paper and it was still a disaster; so this project will have to generate two tons."*

The enforcement of adherence and utilization of practices and procedures can be achieved through Governance. In order to be effective, Governance needs to be supported by senior level management to ensure that sufficient funding is in place so that governance can be done well. There must be accountability for the utilization of processes at multiple levels. The Project Management Office (or like body) within the organization should be responsible for the advocacy, implementation, and continuous improvement of these processes.

As in everyday life, there is little value in having laws if they are not enforced. With the support of

senior management, the governance process is more likely to receive the required resources to be effective. While it can be anticipated that some Project Managers may not embrace the idea of governance, fearing that they are being unnecessarily policed, the project management purists are likely accept governance by recognizing it as value rather than as a constraint.

### **Scalability of Practices**

The project practices put in place by organizations must scale in accordance with the size of the projects that will leverage the practice. The overzealous deployment of exhaustive practices often clouds the intended results of implementing the practice in the first place. The practices employed by organizations must be positioned so the intended audience can embrace it. An exhaustive practice that is targeted towards very large projects will often carry significant unnecessary overhead with it when attempting to apply it to smaller projects. While the intent of these practices remains consistent across all projects, it will not be effective if the practice is abandoned due to excessive size or complexity.

An example of a scalability problem is one that was evidenced in one of the interviews. An individual works with an organization that is a subsidiary of a major Eastern based organization that has grown considerably over the past few years. When the individual first started with this organization, there were only a few employees and there was a limited formal procedural structure - this worked well. This subsidiary has now become more established in the marketplace; more "*formalized*" procedures are becoming commonplace and the level of structure that was introduced has helped to develop organizational consistency. According to the interviewee, the key to this successful transformation was the enhanced structure. For instance, a "*less regimental*" structure that is effective for an organization with 100 employees may not necessarily work for the 700+ employees today. At the same time, the interviewee noted that an ongoing struggle the firm is facing is trying to implement "*big company*" policies and procedures, being dictated by its much larger parent company, while the organizational infrastructure that is needed to support this initiative is not ready.

### **Cross Functional Teams**

Future implementation of project teams and organization in a project management setting must include - and understand the importance of cross-functional teams. Pinto (2002) cites evidence that shows cooperation "*positively affects both task and psychosocial outcomes*", suggesting that cooperation promotes better task performance as well as general positive feelings of accomplishment from the project.

### **Edification**

Educating Stakeholders regarding aspects of Project Management will help in establishing expectations. A company that has a policy of distilling information will foster better communications, invest in people and improve overall company bench strength.

### **Team Practices**

#### **Focus**

Getting mired in the details of the Project Management process and not keeping a perspective and "*seeing the forest through the trees*" creates its own set of problems.

## **Team Members**

An organization's greatest asset is its people as its performance has shown to be correlated with individuals who can effectively assemble and collaborate (Meredith & Shafer, 1999). In essence, a "tribe" can outperform any company process or procedure. There is another aspect that touches upon the experiences (both successes and failures) of individuals that is seen as wisdom and risk mitigation. The quality and depth of knowledge provides diversity within the Team and something unique that must be leveraged. It is time well spent to identify, isolate, and exploit an Individual's strengths while minimizing any weaknesses that has the net effect of elevating the overall bench strength of the Team.

## **Team Processes: Front-end Planning**

Without planning and controls, the project will drag on. Integrating the definitive stakeholders from the beginning of the process allows for more time to identify a thorough outlook of the project interdependencies.

Initial software development estimates and schedules should be looked upon as uncertain due to the lack of definitive information available at the time. Thereafter, the estimates and schedules should be refined as more information becomes available. At each milestone, the estimate-to-complete (as long as it is not percentage) and forecast should be presented to identify deviations from the original cost and schedule baselines. It is recommended that each deliverable within a deliverable breakdown structure (DBS) have an associated cost estimate and schedule.

## **Team Life**

A major failing in IT is the lack of well-defined requirements that is oftentimes subject to interpretations. Hence, teams must have a clear objective that is continually aligned with the project and organization.

The team must also be innovative in their approach by challenging status quo and trying something different. However, creativity must be controlled to the extent that it can be isolated. This would also include abandoning processes if they are not working and knowing when to abandon them.

## **Good Communications**

An infrastructure that supports regular communication between Stakeholders through the project development team is one tool for project success. Ensuring that Stakeholders are provided updates at milestones and that their expectations are being managed is also critical for project success. Furthermore, the use of an Account Manager can ensure that realistic expectations of Stakeholders' are met. Finally, large corporations must model inherent dynamics of small companies who make certain that each member is being communicated to on a regular basis.

## **Risk Registration and Documentation**

It sounds simple enough, but there are risks that are "*insignificant*" at the beginning of the project that becomes "*catastrophic*" due to neglect. Capturing all risks in a risk register ensures - at the very least - there is a record of it and it will not be lost. Furthermore, by documenting everything, references are readily available for any disputes.

## Individual Practices

If the spokes of a wheel become unaligned from the hub, chances are that the wheel will not roll smoothly. Furthermore, there will be much turbulence and swaying from the path. Similarly, if an individual loses focus and aligns away from the objectives of the project and organization, chances are that the well being of the project, organization, and individual will also be in jeopardy. In another words, the individual must understand where he/she fits in the project scheme. The following illustration (from Roberston & Tippet (2002)) effectively illustrates this:

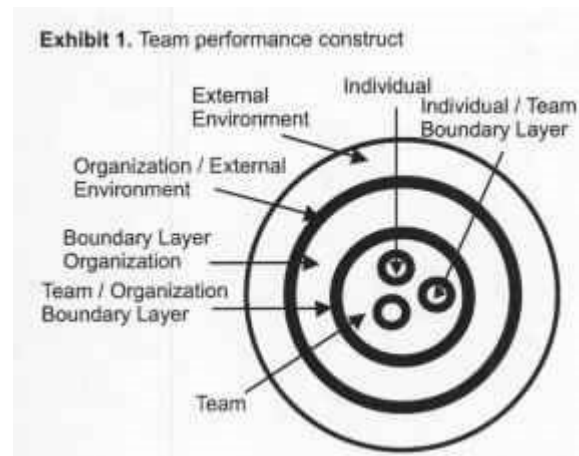


Figure 3. Onion Model

Hence, it becomes extremely important that an individual constantly and consistently improve their personal processes - both for the duration of the project and professionally.

## Personal Processes

For the purposes of this paper, personal processes are intrinsic behaviors and thought methodology of an individual. It is an individual's acknowledgement and recognition of the relationship that exists between personal values and values of the project. Therefore, each individual, regardless of their role: be it project manager, senior consultant or junior analyst - they must always be critical of their behavior. If the behavior of such an individual hinders the project, they must be held accountable. Subsequently, each individual must be held accountable such that they can execute their responsibilities more efficiently.

Personal processes also include an individual's recognition and acceptance of personal strength's and weaknesses relative to projects. An IT business will rely heavily upon the skill sets of its individuals and expect the individual to be able to operate efficiently. Therefore, if an individual has not yet received training to implement a high-level software implementation, he/she must not seek projects for personal gain - this will be detrimental to both the individual and organization.

## SAP (Sociology / Anthropology / Psychology) Implementation

The globalization of markets, mergers of international companies, and integration of managerial processes in corporations are changing project management fundamentals (Eriksson et. al 2002). Individuals within these organizations are now forced to adjust and respond to diverse environments. Just as the Enterprise Resource Planning vendor "SAP" offers an array of technological solutions and practices for its clients worldwide, it has become pertinent that individuals offer broad perspectives and diverse social competencies for projects they work on as

well. In other words, organizations and individuals are required to manage diversity efficiently. Diversity management is a strategically driven process whose 'emphasis is on building skills and creating policies that will address the changing demographics of the workforce and {client} populations' (adapted from Svehla, (1994) in Weech-Maldonado, 2000). Diversity in the future will be driven by the imperatives of competitiveness, demography, immigration, and globalization (Gandz, 2001 update).

Dealing with diversity at a global stage will require individuals to be culturally competent. Cultural competence, as defined by Marla Sutton (FPM magazine 2000) is where 'congruent behaviours, attitudes and policies come together as a system to work effectively in cross-cultural situations. It is representative of an integrated pattern of thoughts, communications, actions, and beliefs of ethnic or social groups'. This means understanding another individual's and teams social environment; what shapes that individual's and teams social beliefs; the anthropological history of the environment where the individual/group resides (example: if there is a joint PeopleSoft implementation within an organization in two countries - Canada and China - many times, individuals are unaware of the histories, mannerisms, and cultural practices that enrich each country).

Dealing with loads of diverse information will be quite difficult at first. All of this will require individuals to expand their cognitive abilities and psychological thought processes. The diverse amounts of information that individuals will be exposed to will result in cognitive dissonance. Cognitive dissonance challenges our individual abilities to process and understand information. An example of cognitive dissonance is provided in Figure 4. The key is in understanding that individuals must learn to strive for meta-cognitions, or coming over and above our ability to process and understand information i.e. coming over and above our way of knowing, also known as praxis. Therefore, to stay competitive and maintain an edge, individuals must increase their scope of understanding around social, anthropological, and psychological issues.



Figure 4. Cognitive Dissonance

## Conclusions and Recommendations

The preparation of this report, interview analysis, academic learning's, literature review, and personal experience of the group has led us to conclude that the many practices being implemented within the IT industry can in fact be deemed as best practices.

As with any industry and any organization within an industry, there is always room for improvement and opportunities to enhance one's business practices.

The method in which organizations leverage the knowledge that has resulted from the execution

of projects will be a differentiating factor between similar organizations. The exploitation of this knowledge can be a significant competitive advantage.

In striving towards the determination of IT best practices it has been realized that *Best Practices* implies a vision of Project Management utopia. Although this utopia may never be known or realized, the vehicle for the journey is fueled by the continuous improvement of the processes that define it.

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<http://www.spmn.com/16CSP.html>

[http://www.cio-dpi.gc.ca/emf-cag/largeitproj/lrg-public-it-grnd-ti05\\_e.asp](http://www.cio-dpi.gc.ca/emf-cag/largeitproj/lrg-public-it-grnd-ti05_e.asp)

[http://www.cio-dpi.gc.ca/emf-cag/solutions/procurement/procurmt-acquisitn\\_e.asp](http://www.cio-dpi.gc.ca/emf-cag/solutions/procurement/procurmt-acquisitn_e.asp)

[http://www.finance.gov.au/ctc/publications/purchasing/cpg/commonwealth\\_procurement\\_guide.html](http://www.finance.gov.au/ctc/publications/purchasing/cpg/commonwealth_procurement_guide.html)

<http://geo.arc.nasa.gov/uav-nra/whitepaper.html>

<http://www.ittoolkit.com>

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[http://www.pm2go.com/sample\\_research/chaos\\_1994\\_1.php](http://www.pm2go.com/sample_research/chaos_1994_1.php)

<http://www.pmforum.org/>

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[http://www.projectnet.co.uk/it\\_failure.htm](http://www.projectnet.co.uk/it_failure.htm)

<http://www.techtarget.com>

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