

A Perspective on Project and Programme Management

(Best Practices)

Chigozie DIMGBA, and Chijioke ACHUMBA, Nigeria

Keywords: Project Management, Surveying, Process, Schedule, Programme management.

SUMMARY

This paper discusses project management and tries to relate it to surveying. It briefly describes the knowledge areas of project management and also gives an insight into programme management showing the relationships and differences. The paper tries to make a case for project management principles and methodologies to be applied in geoinformatics. The benefits of project management and the problems that arise from not managing projects in line with the project management knowledge areas and processes are all detailed in this paper argues that effective project management can help organisations remain afloat even in economic recession.

A Perspective on Project and Programme Management

(Best Practices)

Chigozie DIMGBA, and Chijioke ACHUMBA, Nigeria

ABSTRACT

Recession has been a trend since the great economic depression between 1929 and 1939: the longest and severe negative growth in the 20th century. The late-2000's economy slowdown, spiked-up in July 2007 and according to Wikipedia. the global financial crisis of 2008 is a major financial crisis, the worst of its kind since the great depression. This has been affecting most local, national and regional economies. Businesses, experience trying time, revenue drop. and unmanageable cost.

The global trend to survive the challenges of recession and to enhance long-term sustainability is for organizations to align strategic objectives with effective delivery of project. Statistic Has shown that about 80% of projects worldwide are unsuccessful because they either could not be delivered on time to budget or specifications. This is not unconnected with the challenges associated with the planning, organizing and managing project resources. The primary challenge of managing a project is to achieve all the project goals and objectives while honoring the preconceived project typical constraints- scope, time and budget .

The need to follow project management principles/guidelines in building capacity in geoinformatics is imperative for the success of survey related projects. The objective of this paper is to provide a structure of information on project and programme management in a comprehensive fashion: it discusses project management as well as programme management. It also goes ahead to differentiate between the two and how it can be understood and optimally effected in the management of survey related projects. This paper also tries to make the reader appreciate and understand project management methodologies and principles, the benefits and provide explanation of the project management knowledge areas and process areas and all the other processes as it relates to survey.

In summary. the paper draws the conclusion that well executed projects through the application of project management principles ensures that organizations spend less, yet deliver quality products/services/solutions on time and at client specification while meeting every stakeholder's interest.

1.0 GENERAL OVERVIEW OF PROJECT MANAGEMENT.

A Project is a temporary endeavour, embarked on to create a unique product, service or result. (PMI, 2008) Projects usually have a specified duration and objectives. The product or outcome of a project could be short term or long lasting, but each product is usually unique, although they may some times contain some repetitive elements this does not undermine the uniqueness of the project. Projects can generate deliverables that go into other projects, or become finished product.

Project Management is the application of knowledge, skills, and techniques to project activities to meet project requirements.

Project management involves the application and integration of several processes grouped into five distinct groups namely Initiation, Planning, Execution, Controlling and Closing;

1.0.1 Initiation; is the process involved in committing the organisation to begin the project after signing the contract.

1.0.2 Planning; is the process undertaken in the preparation of the project. This process is very important in a project, as it could determine the success or failure of the project. Some processes have clear dependencies that require them to be performed in the same order for each project, these are known as core processes, while other processes that are dependent on the nature of project are known as facilitating processes. The output of these processes is the project management plan.

1.0.3 Execution; this is the process used to carry out or perform the project management plan, It is referred as Project Plan Executing processes. This process is primarily involved in co-ordinating and integrating people ,resources and activities, to achieve the project objectives. It also includes processes for formalizing the acceptance of the project scope. Also included in the executing process group are the processes for evaluating the project performance in line with the established quality standards, these are known as quality assurance processes. A major part of the project budget is usually expended on the executing processes.

1.0.4 Controlling; This is the process that is used to check and measure the project performance against defined baselines. This process is used to control changes and recommend preventive action, to forestall possible problems in the project.

1.0.5 Closing; The closing process is used to formally terminate the project or project phase activities, when the defined project processes have all been completed. Two main processes in this group are administrative closure and contract closure.

For a project to be successful these five groups of processes must be effectively managed. Each of these processes is characterised by specific inputs, tools and techniques, and expected outcome or outputs. The project team determines which process is appropriate for meeting the project objectives. Project management processes ensure the effective flow of the project through out its existence.

2.0 PRINCIPLES AND METHODOLOGIES

The Project management processes discussed above has been organised into nine knowledge areas. Integration, Scope, Time, Cost, Quality, Human Resources, Communication, Risk, and Procurement. The knowledge areas describe the project management knowledge and practice in relation to the component processes.

- 2.0.1. Project Integration Management** describe the processes required for co-ordinating the various elements of a project. In this knowledge area, we find processes and activities that identify, define, combine, unify and co-ordinate the processes and activities within the project management process groups. Project integration management applies knowledge, skills and processes in achieving the desired results of the project.
- 2.0.2. Project scope management** deals with the processes that ensure that only the work required to complete the project is included in the project. Project scope management defines the work that is needed to meet the project objectives. The processes of project scope management regulate the project against extra work or gold-plating, therefore they form the baseline for assessing the completeness of the project work. The entire work to be done in the project is broken down into work-packages for easy management.
- 2.0.3. Project Time Management** processes are followed to ensure timely completion of the project. These processes define the activities to be carried out in the course of executing the project. They put these so defined activities in an orderly sequence and estimate the required resources and the duration of work.
- 2.0.4. Project Cost Management** is interested in keeping projects within the proposed budget. This knowledge area consists of processes that are employed to ensure that the project is completed within the budgeted cost. The different types of project cost are analysed and managed effectively under this knowledge area. Project cost management analyses the cost of resources required to complete the project, this includes the fixed costs, direct and indirect costs and variable cost. Project cost management is one of most important knowledge areas in project management as project cost which has direct bearing on the final delivery of the project is regulated through these processes.
- 2.0.5. Project Quality Management** : The quality of a project work is measured as a degree of satisfaction or fulfilment of the requirements for the project deliverables. According to the International Standard Organisation, (ISO 1994) quality is the totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs. Project Quality Management creates the policies and procedures for ensuring that the project meets acceptable quality standards. The main product of the project quality management processes is the Quality Management Plan which guides the quality standards and quality control of the project. Project Quality Management is more concerned with avoiding defects and controlling quality to ensure that the output meets desired standards rather than measuring the level of product quality at the end of the

project. Under this knowledge area, there is quality planning, quality assurance, and quality control processes.

2.0.6. Project Human resource management as a knowledge area in project management is concerned with processes for successfully leading and direct the project team, the customers, project partners, contributors and any other stakeholders, to meet the project objectives. The processes of project human resource management are used to develop a human resource plan for the project, acquire the project team members, develop the project team, and manage the team. This knowledge area factors in the powers of the project manager, different management styles and motivational theories in defining roles and responsibilities and a human resource plan for the project.

2.0.7. Project Communication Management determines the information that needs to be communicated on the project and who needs them. The channels of communication and the plan are generated and managed under this knowledge area. The processes under this knowledge area ensure the timely and appropriate development, generation, collection, dissemination, storage, and ultimately disposition of project information. Project Communication Management ensures that information on the project gets to whoever needs it on time and without variations. The processes of project communication management are used to identify the stakeholders, manage stakeholder expectations, plan the communication, distribute information, and report performance. The importance of effective communication on a project can not be over emphasised, as this forms lifeline of every management activity.

2.0.8. Project Risk Management Projects usually have some risks associated with it, these risk need to be identified, analysed and responses to them planned ahead. Project Risk Management involves maximising the probability and consequences of positive events in the project and minimising the probability and consequences of negative or adverse events to the project objectives. This involves processes for identifying risks, planning risk management, performing both qualitative and quantitative risk analysis, planning the responses to risk, monitoring and controlling risks.

2.0.9. Project Procurement Management Projects can be internal endeavour of an organisation, or a contract between two parties. Whichever is the case most projects involve one form of contracting or outsourcing of services. Project Procurement Management deals with the group of processes required to purchase or acquire the products, services, or results needed from outside the project team to perform the work. These processes are used to plan the project procurement, conduct procurement, administer procurements and close procurements.

3.0 PROJECT VS PROGRAMME MANAGEMENT

The two terms project management and program management, sound similar yet there are some differences. While Project management focuses on creating plans and managing resources in order to accomplish a project, **Program management**, on the other hand, is about creating and managing multiple projects, usually these projects are related to one another.

A program is a group of related projects managed together to achieve specific organisational objectives that may not be achieved if these projects were managed individually. While project management focuses on delivering the specific objectives of the project – program management is focused on achieving the strategic objectives and benefits of the integrated program.

It follows that some projects are too complex to manage as a single entity, as a result they have to be split into smaller manageable projects (Buttrick, 2000). Project managers are assigned to these projects while an overall programme manager supervises them.

A good example of a program is the development of a new town, where several urban planning, surveying, engineering projects are implemented together for common objective of building a new town. Each of these specific projects is run by a project manager using a formal project management approach. The overall grouping of these related projects is then coordinated by a Program Manager. The success of a programme is therefore dependent on the success of the individual projects within the programme. Programme management ensures that these projects are coordinated towards the final goal of the programme.

The Program Manager is responsible for ensuring that all the individual projects are running towards achieving the overall goal of the programme but he /she is not involved in the day to day activities of those projects, those are responsibilities of the project managers.

A program management team works to identify the mission, projects to be accomplished, and it's close. The team provides support for the requirements of the projects. They monitor the program plan and keep track of information within the specific projects. After the completion of the project, it is reviewed and documented.

The processes of programme management include the following: Setting the baseline, Agreeing roles and responsibilities, Programme planning, Project prioritisation, Stakeholder communication, Progress reporting, Managing benefits, Quality management, Risk management, Issue management, Programme closure

4.0 PROJECT SUCCESS RATES IN RECENT TIMES

Technical project worldwide are costing companies billions of dollars more than they budgeted for, and more than half of them do not meet client expectations. Meta group estimates that 50% of all new US software projects will go over budget, META Group (2009). Completing projects on time and within budget is also a great challenge in the surveying and geospatial industry.

4.1. Why Projects fail

A project is considered to have failed when it does not meet the schedule, budget, and the products does not meet customer requirement. There is no one overriding factor that causes project failure, however some key factors have been identified as major causes of project failure. Ayodeji, (2008)

4.1.1. Lack of Knowledge

This evidently the worst culprit in most developing organisations and Surveying Companies, where there is technical knowledge of the project work but lack of management skills needed to deliver the project to client satisfaction. Most employees lack knowledge of basic project management processes and the application to the field of their expertise. In such situations projects are usually executed without any controlled or definite plan for its successful completion on time and budget.

4.1.2. Lack of organisational policy

Project management is unknown in many Survey organizations because there is no organizational policy supporting it. Management of projects is done using informal procedures which does not always guarantee success. Without an organizational structure that supports project management it is difficult to manage projects using the conventional project management processes. Sometimes there is a structure and policy in place, but none is ever or rarely implemented. Some organizations only have their management systems on paper, but are not functional.

4.1.3. Underestimating the complexity of a project

This a major cause of poorly planned projects. The complexity of Projects need to properly understood, before any meaningful planning can be made to deliver the project. However, often times the project management team fails to grasp the full extent of the project. According to META Group (2009), approximately 60%-70% of IT project failures occur directly as a result of poor requirements gathering, analysis, and management.

4.1.4. Poor Team selection

Wrong selection of project team members means the project is relying on inappropriate resources and an unreliable team to deliver the project. This is evidence of poor human resource planning. Various factors influence project team selection, which may include organisational structure, negotiating power of the project manager, project staff competency and assignments.

To develop an effective team, the project manager has to start by choosing the best people for the job. This may not always be easy or straightforward, as many of these factors mentioned above concerning the selection of potential members have to be considered, including factors such as: skills required of them to complete project tasks, level of influence in the organization, access to a network of other resources, capacity to participate effectively, ability to work well in a team environment.

In effect team building is part science, and part art. It is important to make sound decisions about resources that will perform well on the project team and who might be better suited to other opportunities. Project managers must rely on their own and their sponsor's networks and organizational knowledge to make sound choices for the project, Suchan (2003)

In situations where the project manager does not have the luxury of choosing team members, and resources are assigned to the project team, it is important for the project manager to establish a rapport with the team members before the project kicks off.

4.1.5. Unrealistic Scheduling

Having a reasonable time scale for a project is very important for a successful completion of the project. Project time scales need not be long or else they may not be manageable. If the project is large, complex then it could either be phased or broken into smaller projects for ease of management. Unrealistic scheduling also result from a lack of understanding of the complexities of the project, which informs or this time mis-informs the allocation of an unrealistic duration to activities and tasks.

4.1.6. Unclear or Understated Objectives

This is usually the result of poor communications in the project. When the project objectives are not clearly spelt out and every team member is confirmed to have understood it, the output of the project is bound to be at variance with the stated objectives. It is the responsibility of the project manager to clearly communicate the objectives of the project to the team members and ensure that it is well understood. Quality control on a project actually begins at this stage, and progresses through out the project. Another source of confusion in the project objectives could come from the client's inability to clearly and unambiguously state his/her requirements at the initial stage of the project, this usually leads variations and scope creep later in the project.

4.1.7. Lack of change control mechanism

Change are inevitable in many project , but what leads to project failure is inability to plan ahead for the changes. Changes can be as a result of variations to project scope or scope creep; this is a situation where the scope of the project grows insidiously and unchecked. Scope creeps may also arise when there is no well defined Scope of Work by the customer, it is important for the project manager to commit the customer and all the stakeholders in the

project to clearly defining what the deliverable of the project should be. When this has been done a change control system should be put in place to regulate any change to the already agreed or verified scope. Change in scope usually have a direct impact on the quality of the project if not balanced with time and cost.

5.0 THE BENEFITS OF PROJECT MANAGEMENT

The ability to deliver agreed requirements on a project is key for any organization to remain competitive in the dynamic and fast-changing environment that characterise our present business world. In view of this scenario project management has obvious benefits to any organisation handling project , whether on a large scale or a small scale. Some of these benefits include the following;

5.0.1. Efficiency

There is higher level of efficiency in delivering services given that Project management provides a “roadmap” that is easily followed and ensures that the project is successfully completed. By identifying the opportunities for actualizing project goals as well possible risks and challenges to the project managers can be able set up mitigating strategies at planning stage.

5.0.2. Client Satisfaction

Clients will be satisfied only when a delivered according to their expectations, meeting a set deadline for the project is of utmost importance to clients. Job quality and cost where they are well balanced always adds to the clients satisfaction and increases the chances of retaining them.

5.0.3. Competitive Edge

Companies that get the always get the job done according to specification and in good time usually have higher ranking on the contractors list. Such organizations have a competitive edge over their peers. The track record of successful project delivery always turns out as a favorable review / reference for the organisation. An organisation that can manage projects successfully is much more capable of carving out a niche environment within their sector or market. The niche advantage can not be overemphasized. It makes an organisation stand out among the crowd, and gain recognition as a leader in the industry.

5.0.4. Growth and Expansion

Every organisation desires growth, to expand beyond its present boundaries always require increased human resources, structures and greater ability to manage the large scale projects. An organisation’s ability to manage large scale projects is a sure testimony of its growth and development, else its size will amount to a dump of human and material resources wasting away without achievements. Ability to manage projects effectively determines the rate of advancement and diversification into new areas of operation.

5.0.5. Management Flexibility

Project management strategies spell out the roles and responsibility of every team member, so that there is no duplicating of duties, also when the management system is decentralized and various personnel are assigned different duties to handle running the project or the organization becomes much easier.

5.0.6. Clarity of goal

Project management processes outline the overall goal of the project, and the strategies for achieving them. Knowing the expected outcome of a project gives the team a focus to work with. It gives direction that makes the project run smoother and consequently faster. Goal setting is a key strategy in planning, when a project is focused towards a particular goal, the tendency to waste resources and time in confused endeavors is eliminated. Clear goals is very essential for meeting standard expected from the project deliverable, without this the project deliverables can be anything the team imagine to be.

5.0.7. Capacity building.

Project management strategies align human resources with their area of highest proficiency thereby build up the capacity of personnel involved in a project. Specialization is a key factor in project management and this is what leads to capacity building as personnel are trained and equipped for higher levels of performance.

5.0.8. Risk assessment and management.

Every project comes with its set of risks. The ability to assess such risks before they become a real problem is very crucial for the success of any project. Risks are identified at planning stage of the projects and this makes them easier to manage. The risk management aspect of project management aims at foreseeing problems before they occur, thereby putting the team in a better position to handle such issues.

By implementing fundamental project management strategies, an organization will remain focused, reach its desired goals and achieve said goals with specific schedule and budget. Project Management is also beneficial to individuals at various levels in organizations, when staff understand their roles and responsibilities and how their work relates to the bigger picture, conflicts are minimized, and effective communications increases productivity and enthusiasm.

Finally, projects translate organisational goals and strategies into actions.

6.0 APPLICATION OF PROJECT MANAGEMENT PRINCIPLES IN SURVEYING AND GEO-SPATIAL PROJECTS.

Surveying projects like other technical projects need to be properly managed to realise the full benefits to the organisation. Surveying projects are usually external projects carried out under contract for a client outside the organisation. These projects face the same challenges faced by engineering or construction projects. The need to manage surveying projects for a consistent delivery of customer requirements and expectations can not be overemphasised.

Applying project management principles to the execution of surveying projects follows the application of the processes across the knowledge areas. Using a pipeline route survey project executed at Polaris as a case study, the application of project management processes to the planning and execution of surveying projects can be explained here. The project; a pipeline route survey for a municipal water supply system required planning and managing the project along the knowledge areas which ensured timely and effective delivery of the requirements.

Being a matrix organisation, the structure allowed for a functional manager to be appointed as the project manager through the project charter. The assembly of the project team was then the responsibility of the project manager, but also involved the sponsor, as staff from different department had to be co-opted into the project.

Developing the Project Management Plan, involved the Project Manager and the key personnel in the team, who are also Subject Matter Experts (SME) in this field. These surveyors have long years of experience in pipeline route survey so their expert judgement was very vital in bringing a workable plan of action for the project. Two major segments of the project management plan; the Managerial Process Plans and the Technical Process Plans, made good of the expert judgement of these SMEs. The start-up plan specified how to carry out and achieve accurate estimates, plan for the personnel and resources.

The estimation plan gave the procedure for deriving the three important estimates in the project, work package and activities, cost, duration.

Staffing relied much on the expert judgement of the SMEs to determine the number of personnel required for various activities in the project, their skills level and the source, especially for the hired field labourers.

Creating a work plan for the project at this stage had to factor in both SME expert judgement and the use of project planning software to derive a work break down structure and prepare a schedule.

Breaking the survey operations down to manageable packages; activities identified from the scope and project deliverables ; reconnaissance survey, setting out, beaconing, traverse, detail survey, and levelling were decomposed into component activities and scheduled appropriately. Scheduling considered every milestone as agreed with the client, in a situation where milestones are used as to schedule payments , they had to be planned and achieved within appropriate time scale to avoid any constrain on funding.

The control plan aspect of the project management plan encompassed the data, requirements, schedule, budget, and communication control plans. In survey operations data acquisition is actually the heart of the practice, as such the data control plan had to be thoroughly worked out to determine the types of data that has to be acquired, the formats and how it is to be processed and managed. Privacy and security, mode of collection storage, distribution, retrieval and archiving. The technical crew grouped the data in to raw and processed data. Formats described the various formats for presenting the data, these goes for both numerical data and graphics. Privacy and security of the data was planned to specify who has access to the data on the server, and their rights to modify it. The mode of data collection specified the data to be logged manually or collected by automatic capture. How the data is stored on the server distributed and later archived, were all specified here.

Client requirements can change and did change on the project; this however was planned for under the requirement control plan. Changes in the control azimuth, rounds of observation on zero setting for traverse, beacon specifications came up during the project execution and was managed using requirement control plan. Some of these changes also affected the budget and schedule.

The schedule control plan specified the mechanism used to measure the progress of the work. Initial project schedule was prepared in form a Gantt chart using MS project. Tracking of this schedule and management of the changes to the schedule kept the project on course with schedule revisions. This was achieved by a pre-agreed commitment of the client and the company.

Communication is very vital to project management as such the communication plan must identify the channels of communication, the type of reporting and their frequency. The communication and reporting plan for this project specified the reporting mechanisms, content, and information flow. From these were derived the type of Operations Reports, Expenses Reports, Safety Reports, medium of correspondences with client and the project team, that was used on the project.

Planning for risks on this project was given priority attention bearing in mind the fact that the survey area was one with many environmental threats. The risk management plan specified how to identify risk on the project, analysing and prioritizing these risks and how to control them. The pipeline route cut across busy highway, built up residential area, forests and swamps. The risks inherent in working in such environment were identified, safety risks of vehicular accidents, interference with observations, conflict with road users or property owners, atmospheric pollution, drowning, weather conditions. Analyzing these to determine their ranking, impacts and frequency, it was inferred that vehicular accidents, and interference with observations were very high risks, while bad weather and drowning were low risks in this context. The approach to respond to these risks having been carefully laid down, gave us control over them as the HSE department took care of the personal protective equipment in line with the identified risks. The project management team also put in place a system for controlling the traffic during the survey to avoid vehicular accidents, also a strategy of

approach and response to property owners was developed to reduce conflicts with them. Various cases of accidents and conflicts were eventually averted by following this risk management plan.

Quality of the project deliverables was a factor in client satisfaction. The quality assurance plan was put in place to ensure a high quality product by application of quality control processes. The quality assurance plan set the standards for each task in the survey operations, the number of rounds of observations to take on a traverse, accuracy levels for setting out points, computation of traverse, datum specification, the specification for benchmarks both land and swamp. These standards had to satisfy the client expectations while maintaining the high ethical and quality standards of the organisation.

7.0 MAXIMIZING ORGANISATIONAL GOALS THROUGH EFFECTIVE PROJECT MANAGEMENT

Organisational goals and business strategy can be leveraged if projects are managed effectively. In order to reach anticipated organizational targets, project performance must be able to meet the overall strategic objectives of the organisation.

In this period of global economic recession, many organisations are searching for ways to maximize organizational gains while saving on spending at the same time. This may not be as easy as saying it, but it is achievable. A paradigm shift is required to from technology to organisational process assets that facilitate effective delivery of projects. Our rapidly evolving business environment poses several challenges to organizations, and this calls for constant change. There is need for organizations to ensure that projects are aligned with overall strategic goals and business objectives.

A harsh economic environment compels organisations to re-evaluate their cost – profit relationship, this can lead to panic and austerity measures to cut down on resources but in the end, adversely affects the final output. This trend has characterised the recent recession period, however organisations should actually look towards value engineering as an antidote to the effects of the recession on business objectives. As a component part of project management, value engineering uses a systematic approach to optimise the project life cycle cost, while saving time and improving quality. The end result is increased profit, appreciation in market share and innovations in the delivery system.

Meeting organisational objectives through project management also entails knowing which project to accept and the one to turn down. This is where many organisations miss the track, as Prioritizing and selecting project can a daunting task, (Rosacker and Olson, 2008). Project selection criteria and methods form part of the initiation input and tools for project scope management, these tools provides the project management team a framework for decision making. It is usually classified into two broad categories- Benefits measurement methods and constrained Optimisation Methods. Benefit measurement methods employ various forms of

analysis and comparative approaches to select one project over the other, while constrained Optimisation Methods make use of mathematical models. Generally, organisations can select project either by ranking benefits or by weighing the strategic values, yet this has to depend on the organisational objectives.

8.0 CONCLUSION

Project management is a management discipline, an individual competency and an organizational culture that underpins much economic activity, Manu (2007).

In facing the many global challenges in today's world as Geomaticians, The success of many gigantic Engineering, Environment and Planning projects will depend on the precision and accuracy of the information we provide as Surveyors. The need to build capacity in the skills of project management and develop strategy in the successful completions of our works cannot and would never be over emphasized.

Surveying firms and the geo-spatial industry in general have the need to remain in business with a competitive edge. Like other business organisations they are established for profit as well as economic development. It has become imperative that, as an industry that spearheads physical development, surveying projects from the small one to the very large and complex one should be managed effectively for optimum performance.

Project management procedures, principle and affirmed best practises are indispensable tools in achieving this goal.

REFERENCES

Ayodeji, J . 2008, "why projects fail" a presentation by Jemiyo Ayodeji at Knowledge Sharing Event , NNPC Towers, Abuja

Buttrick R, 2000, The Interactive Project Workout:-reap Rewards From All Your Business Projects (2nd Edition), New York, Financial Times

International Standard Organisation (ISO) 1994, Quality Management and Quality Assurance Geneva, ISO Press.

Kumar. M, 2007, "The Importance of Project Management in Organizations"
<http://www.articlesbase.com/leadership-articles/the-importance-of-project-management-in-organizations-246928.html>

Project Management Institute, 2008, Project Management Body of Knowledge (Guide) fourth edition. p.5, Project Management Institute, Newtown Square, PMI publications.

Rosacker K. M and. Olson D. L, 2008 “An Empirical Assessment of IT Project Selection and Evaluation Methods in State Government,” Project Management Journal, vol. 39, p. 49, Project Management Institute, Newtown Square, PMI publications.

Suchan. J, 2003, ”Building effective project teams”. Microsoft Office Online, <http://office.microsoft.com/en-us/project/HA012111721033.aspx>

BIOGRAPHICAL NOTES

Chigozie Dimgba is the Managing Partner at Polaris Consulting Company Ltd. He is a registered surveyor, and a member of the Nigerian Institution of Surveyors and Financial Secretary of the Nigerian Hydrographic Society. His career experience spans offshore surveys, pipeline route surveys, dimension control and engineering construction surveys. He is a certified QMS IRCA Auditor.

Chijioke Achumba is an urban planner and a technical director at Polaris Consulting Company Ltd. His career experience includes environmental research on waste management, and public water supply. He is a co-author of the paper ‘Environmental Impacts of Public Utilities Vandalisation, presented at the National workshop for protection of public utilities, Abakiliki – Nigeria, 2001. He is a member of the Nigerian Environmental Society.

CONTACTS

Chigozie Dimgba
Polaris Consulting Company Ltd
8A Lagos street, Rumuomasi
Port Harcourt - Nigeria
NIGERIA
Tel. +234-803 7081 333
Fax + 234-84 465 833
Email: cndimgba@polarisconsultingcompany.com
Web site: <http://www.polarisconsultingcompany.com>