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Title: Building a High Performance Project Team: The
Experience in a Major Water Utility Infrastructure Renewal
Programme

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The Country

- The twin island state of Trinidad (4828km²) and Tobago (300km²) is located in the Southern part of the Caribbean Sea.
- Rainfall averages 2000 mm per year. The climate is moderate with a mean annual temperature of 27degrees C.
- The country has a population of 1.3 million people of which 95% live in Trinidad.
- Population growth is projected at 1.5% per annum.
- The national capital is Port-of-Spain with a population of 90,000 people.

The Objectives

- Appreciate how major projects are undertaken in developing nations
- Identify the key players in mega projects
- Appreciate that success depends on an integrated, high performing team
- Share the experiences in building a team
- Learn from the experiences

The Programme

- Replacement of 35Km of 900mm diameter trunk pipeline
- Replacement and extension of 300 Km of sub transmission and distribution pipelines
- Construction of 5 service reservoirs
- Construction of 5 Booster stations

Estimated total cost \$1 Billion TT dollars

Project Elements

- Survey –existing route and right-a-way
- Soil Investigation – type, landslip areas, resistivity tests
- New route selection – illegal occupancy, avoid environmental and technical problems
- Land acquisition
- Pipe materials
- Hydraulic modelling
- Design
- Environmental management plan
- Tender documents

Undertaking of Mega Projects

- The assumption is that developing nations may not have the resources, technology, management systems and expertise to execute large complex projects
- The services of foreign consultants and contractors are usually solicited
- It is expected that they will bring the experience of a global manager to deal with cultural issues as well as transfer of technology
- The procurement route supports that assumption

The Planned Procurement Process

- Preliminary Design Consultant for the trunk main
- Detailed Design Consultant for the sub-transmission and distribution system
- Design Build Contractor for the construction of the trunk main
- Build Contractor for the construction of the large sub transmission pipelines, reservoirs and booster stations
- Small Works contractors for the distribution pipelines
- An Independent Engineering Auditor
- Programme Manager

Project Phase

- Project is in the planning stage
- The team does not include the contractors
- The paper captures the experiences of team building at eight months in this phase
- The project life is much longer and it is anticipated that the weaknesses observed will be addressed in creating a high performing team

Nationality of the Key Team Members

- The Client Project Manager
 - Trinidadian based at the Client Head Office
- The Client Operations Manager
 - Trinidadian based at a Decentralised Office
- Preliminary Design Consultant
 - Canadian firm in association with another Canadian based company and a local firm.
 - Project Manager is from the associate Canadian firm
- Programme Manager
 - Canadian firm in association with a USA based company and a local firm.
 - Project Manager is from the USA firm
- Independent Engineering Auditor
 - Canadian Firm with a local office

Team

■ Preliminary Design Consultant for the Trunk Main

- Undertake route selection, selection of pipe materials, preparation of preliminary designs and tender documents for a design/construct contract.

Team

■ Detailed Design Consultant

- Responsible for the route selection , final design of the distribution system; replacement pipelines, new pipelines, reservoirs and booster stations

The Team

■ The Independent Engineering Auditor

- to ensure that the programme is carried out at all times with
 - due diligence;
 - efficiency and
 - in accordance with sound technical, environmental, financial and managerial standards and practices

Team

■ Client Project Manager

- Ensures that the project meets its deliverables of:
- Cost, time, quality, customer and project team satisfaction;
- Seeks the interest of Client and
- Acts as the Interface Manager

Team

■ Programme Manager

- Supervising the preliminary design consultant and acceptance of works
- Supervising the design build contractor and acceptance of all works
- Supervising all other contractors and acceptance of works

Team

■ **Operations Manager**

- User and owner of the system, whose needs are to be satisfied

■ **Project Director**

- The Project Director is a member of the Executive Management and performs the role of Project Sponsor

Key Team Members

- Client Project Manager
- Client Operations Manager
- Preliminary Design Consultant
- Programme Manager
- Independent Engineering Auditor

Team building

- Team building is the process of taking a series of individuals from different functional specialisations and welding them together into a unified project team
- The nature of the works requires a fully integrated effort, with the use of expertise and good understanding of interdependency
- The evolution and effectiveness of the team is captured on a time schedule

Evolution of the Project Team

- Kick off Meeting (Initiation)
 - Introduction of the team members
 - Aim and objectives of the programme shared
 - Roles and responsibilities clarified
 - Key contract terms revisited, time, price, addendum, deliverables, payments schedule
 - Organisational structure reviewed and proposed changes discussed

Evolution of the Project Team

■ Kick off Meeting

- Communication channels set up including RFI
- Meeting schedules agreed- technical and progress meetings
- Work programme reviewed and agreed
- Format of monthly reports agreed
- Ground rules established-agenda, when draft minutes of meeting will be circulated, etc

Evolution of the Project Team

■ Kick off Meeting

- reinforced the view that the aim is a win-win situation and
- that problems may occur. However, the Client must possess a product that can be useful.

Evolution of the Project Team

- The objectives at this stage were
 - Establishing commitment by sharing and getting team members to accept the overall aims and objectives of the project
 - Developing team spirit by demonstrating positive attitude and readiness to work
 - Establishing clear goals and success/ failure criteria - time, cost, quality and client satisfaction

- Generally, it appeared that the objectives were being achieved

Evolution of the Project Team

- After about five months the deliverables started slipping and schedules were being revised regularly
- Reasons given were
 - Slow responses to RFI
 - Slow review of submissions and approvals
 - Blame game including external third parties inputs
 - Different interpretation of Scope of Works and responsibilities
 - New software are now required

Evolution of the Project Team

- Reasons given were(cont'd)
 - Payment claims for works considered additional
 - Payment requests for face- to- face meetings outside the schedule set at the the kick-off
- All of these were symptoms of a deteriorating and dysfunctional team
- It appeared that the programme was heading into time and cost overrun with an unfulfilled scope

Causes of the Team Deterioration and Suggested Recommendations

■ Resources

- The necessary resources to meet demand and the appropriate skills of people were not evident
- The key personnel identified in the organisational structure in the proposal were not available. The substitutions were not effective
- Unavailability of appropriate management and technical systems
- Most critical item, highlights also the interdependency nature of teams, Substitutions must be closely monitored, and adequate resources should be made available

Causes of the Team Deterioration and Suggested Recommendations

■ Communication

- Communication was mainly by E-mails due to the team members located in different countries.
- Co-location is important to build an effective team
- As a result, the team was fragmented and highly differentiated.
- Co-location is very essential in managing mega projects, it can overcome fragmentation and differentiation problems

Causes of the Team Deterioration and Suggested Recommendations

■ Availability of Project Managers

- The external project managers were not full time on the job.
- External project managers were working on many projects with their own company and as Associate with other consultants
- Shared loyalty characteristics, were very evident.
- Level of commitment to the project goals was questionable
- Full time project managers are required

Causes of the Team Deterioration and Suggested Recommendations

■ Problem Solving

- Lack of information, inadequate resources assigned created a number of problems in terms of determining options and solutions
- Technical Meetings were carded to deal with some of these issues
- Matters remain unresolved for a long time due to lack of mental, innovative and analytical skills.
- Strong Mental and Analytical skills are prerequisite to effective teams

Causes of the Team Deterioration and Suggested Recommendations

■ Control of conflict

- Differences of opinions will occur with multidisciplinary teams, especially in situations of additional works and claims
- Evidence of personality conflicts, on roles and responsibilities, surfaced
- Insufficient effort was placed in the resolution of these conflict.

Causes of the Team Deterioration and Suggested Recommendations

■ Control of conflict

- The choice of intervention was mainly absorption which led to low morale and motivation
- Openness and honesty deteriorated
- Conflicts have be been dealt with expeditiously, using appropriate methods

Causes of the Team Deterioration and Suggested Recommendations

■ Authority and Power

- Project Manager authority and power limited in the decision making process, approvals had to be referred to other levels
- In addition, as a result of inability to trade-off and make timely decision, led to time delays and frustrations at meetings
- Project leader should be given appropriate authority to make quick decisions and negotiate trade-offs in the interest of the project

Causes of the Team Deterioration and Suggested Recommendations

■ Field Information

- Reliance on the operational knowledge of the operational system, as information on the asset location and condition is incomplete
- Reliance on operational plans for future method of operation
- Operational staff have to be able to function in a matrix configuration and must be responsive. Leadership skills of influencing are imperative

Causes of the Team Deterioration and Suggested Recommendations

- Senior management support
 - Insufficient senior management support in resolution of conflicts and providing additional support
- Senior management must be seen to back and support the programme and it must be featured as part of its strategic policy

Causes of the Team Deterioration and Suggested Recommendations

■ Unrealistic Deadline

- Deadline was imposed by the Client.
- The deadline for the project was always impossible to achieve.
- Sufficient time to deliver the project, and contingency is required in case things take longer than expected.

Causes of the Team Deterioration and Suggested Recommendations

- Effective programme leadership
 - Each member of the team apparently functions as a leader
 - Full support of the leadership was not evident, as challenges were very pronounced
- The ability to lead the team, plan effectively and set up appropriate monitoring and control systems was essential.
- In addition, members must be able to function as team leaders and members at times
- Initial stage some team building exercises are required as well as choice of leadership. A leader as an excellent technocrat may not be appropriate.

Causes of the Team Deterioration and Suggested Recommendations

■ Upward Communication

- Monthly reports were provided
- Apparent failure in communication or general disinterest in the in status of the project
- When deadlines were missed it became serious issues.
- People must be informed and must be given an opportunity to and help in getting the project back on track

Causes of the Team Deterioration and Suggested Recommendations

■ Cultural

– Foreign based expectations

■ Availability of data

■ Availability of technology

■ Quick responses to queries

■ Client would have appropriate responses and options

Causes of the Team Deterioration and Suggested Recommendations

■ Cultural

– Local based expectations

- Data is insufficient and scenarios and sensitivity analyses need to be done in arriving at a decision
- Low end technology mainly manual and consultants are to find innovative ways to use the available system
- Consultant would educate and advise on options
- Technology transfer to educate and build local competencies

Causes of the Team Deterioration and Suggested Recommendations

■ Cultural

- These expectations were at the different ends of the spectrum and remained contentious issues , which affected , trust, respect, listening, empathy
- These core values underpin effective teams
- It is expected that global managers must understand cultural issues , expectations, and demonstrate , not only technical competence , but soft people skills.

Causes of the Team Deterioration and Suggested Recommendations

■ Cultural Orientation

– Foreign Based

- Individual role in pursuance of their objectives
- Focus on the work
- Very direct at discussions and meetings, expect contributions from others
- Decisions are more based on consensus

Causes of the Team Deterioration and Suggested Recommendations

■ Cultural Orientation

– Local/ other Foreign Based

- Like to identify with the team
- Team objectives are more important
- Look to build strong relationships
- Not very direct at meetings and tend to lobby outside the meetings
- Leader makes the decision
- Members tend to look for instructions

Causes of the Team Deterioration and Suggested Recommendations

■ Cultural Orientation

- Selection of leaders , who understand different cultures and flexible enough to bridge the cultural gaps that exist is necessary in pursuit of the project goals.

Lessons learnt

- Core values of Openness, Honesty, Support and Trust must be cultivated
- Training of people to function as team leaders and team members
- Open and well developed communication system
- Co-location for mega projects
- Decision making process must be flexible when working in different cultures
- Understand critical cultural factors and expectations and aim to satisfy those

Lessons Learnt

- Carefully review scope of works to minimise misinterpretation and ambiguities
- Resolve conflicts quickly
- Set realistic time frame
- Ensure that project managers have the authority to act decisively and to negotiate trade-off in the interest of the project
- Select leaders that are global with appropriate combination of technical and soft skills
- Allocate time for some team building exercises

Any Questions?

Thank You