

# CASE STUDY

## DEFINITIVE FEASIBILITY STUDY



Client: API Management  
Project Name: Definitive Feasibility Study  
Start Date: 2010  
Completion: 2012

### Overview of Company

API Management Pty Ltd (API) manages Australian Premium Iron Joint Venture (APIJV). APIJV is an unincorporated joint venture established to develop a long term iron ore export operation in the Pilbara region of Western Australia, comprises of two participants, Aquila Resources Limited (Aquila) and American Metals and Coal International Inc (AMCI). Both companies hold a 50% participating interest in the venture via wholly owned subsidiaries.

### Background of the Problem or Challenge Being Faced by the Client

The West Pilbara Iron Ore Project, managed by API, is an iron export operation focused on the pisolite iron ore deposits located 30km to 85km south west of Pannawonica. It is due to be operational early in 2014. API prepared a Definitive Feasibility Study (DFS) to identify (within a +/- 15% margin), a cost for the development of a 30 Mtpa pisolite mine and associated port and rail infrastructure for the West Pilbara Iron Ore Project.

The project incorporates the establishment of a Port in the vicinity of Anketel Point near Cape Lambert, mines in the area south west of Pannawonica, processing facilities, power stations, and approximately 280km of rail to transport ore from mines to the port. API needed to understand the CapEx and OpEx for the communications infrastructure for the project for inclusion in the DFS.

### Solution Overview

Titan ICT Consultants were engaged to deliver a DFS which identifies the cost of developing the communications backbone infrastructure for the project including; providing API with an understanding of the existing telecommunications infrastructure in the Pilbara Region and available options for connecting the proposed API Communications Network to the Public Switched Telephone Network (PSTN) and internet. The Communications Backbone is essential to provide communication services for API whole of business applications connecting Port, Mine, Perth office and Rail Operations. ICT Consultants developed, defined and costed the communication systems that included; digital radio systems, optical fibre cable, optical transmission network, towers, power and communication shelters. Titan performed an assessment of the bandwidth requirements for the port to Perth and port to site communications backbones (optical fibre and digital radio).

### Challenges

To understand the application and service requirements and determine the technology infrastructure for future mining operation.

### Solution

Titan ICT Consultants are vendor neutral thus ensuring fit-for-purpose solutions were evaluated and realistic cost to the business was considered.

### Benefits

A complete budget and validated communications design that complied with the business requirements. The composite DFS enabled API to proceed with development.



Based upon the options identified in the Pre DFS work, ICT Consultants defined the recommended optical fibre network access location(s) and associated infrastructure requirements.

Within the DFS Titan ICT Consultants provided recommendations on the structure of the communications links to provide the necessary performance across all phases of the project execution. The Construction Phase is where the microwave (DRS) will provide the initial high capacity communication link between the port and the mines and will provide a carrier platform for the voice mobile radio system and business services, ie Corporate IP.



The Operational Phase of the Stage One Project includes the development of the communication bandwidth between the mine, port and Perth. Titan participated in discussions regarding the public communications network requirements and associated implementation costs. Titan sourced CapEx and OpEx costs associated with the implementation of the port to Perth optical fibre communications link(s). Titan also produced the necessary specifications/drawings/calculations/data sheets etc to support the DFS design. A third party review of the DFS design was performed for the remainder of the communications systems performed by others.

#### Disclaimer

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#### Implementation

On delivering a bankable Communications Design Feasibility Study Titan ICT Consultants were able to provide API with a + or - 10% cost for implementing communications infrastructure which included material, freight and labour and an understanding of risks associated with implementation of overall communication infrastructure for the project for API. API combined DFS's from other disciplines including; railway, power, mines, and other infrastructure to derive a complete 'cost of project' figure for the investors to review within the production timeframe. This cost analysis provides investors confidence to commit collateral to proceed with construction. To ensure the cost was as accurate as possible, Titan was also required to work with an external third party to undertake a Value Improvement Process (VIP) where the complete DFS was audited. Options were considered to reduce CAPEX and Net Present Value (NPV) was performed.

#### Results

The outcome of the DFS was an overall capital expenditure estimate of A\$5.77 billion including EPCM and contingency costs. Titan ICT Consultant's portion of this estimate was A\$ 69.5 million. Approval from the joint venture owners to proceed with the project execution phrase is expected in Quarter 1 2011, with detailed design commencing shortly thereafter once the implementation organisation's structure has been finalized.

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