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9B19N004

IVTL: ASSESSING PROJECT ECONOMIC VIABILITY

Alok Kastia wrote this case solely to provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The author may have disguised certain names and other identifying information to protect confidentiality.

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Indus Valley Telecom Ltd. (IVTL) wanted to set up an optical fibre cable (OFC) manufacturing plant at Cosmic Equipment Company Ltd. (CEC), a wholly owned subsidiary of IVTL. The new plant was to have an installed capacity of 114,000 kilometres (km) of OFCs of various specifications. The general manager of IVTL, Mohit Agarwal, had contracted an outside consulting agency to confirm that the project was technically viable.

In January 2016, Agarwal was looking to conduct a comprehensive economic viability study of the project before he presented the proposal to IVTL management for approval. He asked Suneel Saxena, finance manager of IVTL, to forecast financial statements for the project and then do a comprehensive economic viability study. The project had to be both economically and technically viable before management would give consent to proceed. Agarwal had already collected basic data for the study and was wondering whether the project would turn out to be economically viable—after all, the decision to move forward with the project now depended on this.

**INDUS VALLEY TELECOM LTD.**

IVTL was an Indian telecom company incorporated in 1989 with a sales turnover of ₹25.510 billion and net profit of ₹1.899 billion[[1]](#footnote-1) in fiscal year (FY) 2014/15. IVTL had shown compound annual growth of 89 per cent in sales turnover and 75 per cent in net profit over the last four years (see Exhibit 1). The company had cash and cash equivalent of ₹1.358 billion, and its net worth was ₹9.324 billion as of March 31, 2015.

The company’s main businesses were manufacturing telecom equipment and OFC, and implementing turnkey projects to develop telecom infrastructures. The company had been manufacturing and selling OFC in India since FY 2005/06, with manufacturing facilities in Daruhera, Haryana, and Rajkot, Gujarat.

IVTL was a professionally managed company with six board directors; one of the directors was an independent director and another had been nominated by bankers. The management team was highly qualified, with extensive experience in the telecom industry. The company had never defaulted on its loan payments, and its standing with banks was excellent (AAA rating). In the past, IVTL had been able to secure bank loans at an annual interest rate of 8.5 per cent.

In late 2015, IVTL decided to establish an OFC project at its subsidiary, CEC. This decision was based on CEC’s location near a port and its existing land and buildings, which could be used for the project. Also, setting up the project in a subsidiary meant that the subsidiary could act as a special purpose vehicle. IVTL wanted to protect its own assets from the project’s lenders in the case of bankruptcy of the subsidiary.

All equity in the project would be infused by the parent from its internal accruals. The long-term debt for the project would be secured by a bank based on the cash flows of the project alone, and the lenders of the project would have no recourse to the parent company.

The subsidiary (the special purpose vehicle) would be able to distribute dividends to its parent only after meeting the operating expenses, depreciation, interest on loans (long-term debt and working capital loan), taxes, and annual repayments of the long-term debt. In this arrangement, therefore, the lenders would be more secure than they would be in extending a loan to a typical company.

**COSMIC EQUIPMENT COMPANY LTD.**

CEC, located in Cochin, was wholly owned by the government when it was incorporated in 1985. The company produced telephone exchanges and transmission equipment for landline telephony until the year 2000. The telecom market switched to mobile telephony in the years that followed, and by 2005, all the products manufactured by CEC had become obsolete. In 2010, the company was left with no business or operations, becoming a dormant[[2]](#footnote-2) company with its only assets being five hectares (about 12.5 acres) of land and the 25,000-square-foot building on the land.

In 2014, IVTL bought CEC from the government for ₹20.2 million for the purpose of setting up any new project the company might find suitable for its growth. After taking over CEC, IVTL nominated two of its directors to become board members of CEC.

In 2015, IVTL envisaged establishing an OFC plant in CEC, and it entrusted Agarwal with the task of preparing a comprehensive proposal for the project.

**OPTICAL FIBRE CABLE**

An OFC consisted of a bundle of glass threads called optical fibres, each of which was capable of transmitting data that had been converted into light waves. An optical fibre had a core, composed of the light-carrying fibres, and a cladding—a layer of material surrounding the core, selected for its ability to keep the light within the cable by reflecting the light back into the core (a phenomenon known as total internal reflection). An OFC was coated with a plastic film and encased in a protective tube suitable for the environment where the cable would be deployed. An OFC allowed the transmission of voice, data, or video over distances from less than a metre to hundreds of km. See Exhibit 2 for a process flow diagram of the manufacturing of an OFC.

An OFC had many advantages over conventional copper wire cable. An OFC offered greater bandwidth to carry more data, allowed digital transmission of data at the speed of light, was thinner and lighter in weight, and was less susceptible to electromagnetic interference than copper wire cable. In 2016, copper wire cable was used to transmit data for medium distances and covered the last mile to connect homes to a telecom network. Specific types of OFC cables were used for different applications, such as direct burial in trenches, installation in conduits, lashing to aerial telephone poles, and insertion in paved streets.

**OPTICAL FIBRE CABLE INDUSTRY IN INDIA**

The market size of the OFC industry in India was ₹12 billion in FY 2014/15. It was expected to grow at a compound annual growth rate of 15 per cent for the next five to six years, and was estimated to reach ₹28 billion by 2020.[[3]](#footnote-3) Government initiatives like the National Optical Fibre Network envisaged that retail broadband services would be available to all households at very reasonable rates; the budget for this initiative was ₹720 billion over the next 10 years.[[4]](#footnote-4) The Network for Spectrum project for the defence sector and the Digital India program, designed to connect all the villages in India through a telecom network, would further boost the demand for OFC in future.

India was the second-largest telecom market in the world, with the third-largest population of Internet users. In FY 2014/15, demand for OFC was generated by telecom service providers (60 per cent), cable television operators (25 per cent), and the government (15 per cent).[[5]](#footnote-5) The main telecom service providers were Reliance Jio Infocomm Ltd., Vodafone Group Plc, Airtel India, Idea Cellular Ltd., Mahanagar Telephone Nigam Ltd. (MTNL), and Bharat Sanchar Nigam Ltd. (BSNL). They used OFC mainly in upgrading their networks from second generation (2G) to third and fourth generation (3G and 4G) data technology.[[6]](#footnote-6)

In terms of volume, OFC production showed robust growth of 48 per cent in FY 2014/15 (412,500 km) over FY 2013/14 (279,400 km),—the result of catering to the surging domestic demand for, and growing exports of OFC.[[7]](#footnote-7) Domestic demand was expected to grow to 1,000,000 km by 2020.[[8]](#footnote-8) This meant there would be a significant gap between supply and demand for OFC in India for the next few years.

**Competitive Landscape**

Fourteen companies were manufacturing OFC in both the organized and the unorganized sectors. According to market share, the major players in the industry were Sterlite Technologies (31 per cent), Finolex Cables Ltd. (22 per cent), Aksh OptiFibre Ltd. (12 per cent), Paramount Communications Ltd. (10 per cent), U M Cables Ltd. (8 per cent), IVTL (7 per cent), and others (10 per cent).[[9]](#footnote-9)

Indian manufacturers were competitive in terms of both price and quality compared to the global players, so there was considerable scope to export OFC internationally. In FY 2014/15, India exported 40 per cent of its production to other countries, including the United States, the United Kingdom, Poland, Turkey, Germany, and Saudi Arabia. In the same year, imports from countries, including China, the United States, Japan, South Korea, and Canada, met 20 per cent of India’s total domestic demand.[[10]](#footnote-10) Overall, India had become a net exporter of OFC to the rest of the world.

**THE PROJECT**

IVTL would begin commissioning the proposed project in April 2016, once it had been approved by the company’s top management. The existing building would be modified to accommodate the needed plant and machinery. The necessary clearances from the government regarding land and building were already in place. The project would be completed within one year, and the commercial production of OFC would start by April 2017.

The economic life of the project was estimated at five years because OFC was a high-technology product, and the risk of product obsolescence was huge. Also, the OFC industry in India would mature over the next five years because a major part of laying OFC throughout the country would have been completed by then. Accordingly, the company should use the risk-matched hurdle rate to evaluate the project, and the term of the proposed bank loan for the project should be taken as five years.

CEC would produce four different kinds of OFC for domestic sale and for export (see Exhibit 3). The product mix of different types of OFC produced and sold would be in the ratio of their installed capacity, and this ratio would remain constant. The average selling price realized for the given product mix would be ₹25,775 per km of cable. The net sales realization of OFC would be the same for both domestic sales and exports because it would be based on the OFC prices prevalent in the international market.

**Marketing and Selling Arrangement**

CEC did not envisage any problem in selling the OFC that would be made available by the production department after keeping a buffer stock of work-in-progress and finished goods. The buffer stock would be necessary for avoiding stock-outs—and keeping customers happy.

The company had entered into an agreement with Reliance Jio Infocomm Ltd. to sell 30 per cent of CEC’s production of OFC on a monthly basis. CEC would also bid for tenders floated by the government, and it would use the parent company’s experience in selling OFC. The company would be able to secure customers without much difficulty because of the gap between supply and demand in the OFC market. The company also planned to export 15 per cent of its production to make inroads in the international market. Because the company was situated near a port, it would not face many logistical problems in exporting its products to countries throughout the world.

**Raw Materials**

CEC would use both imported and domestic raw materials. The main raw materials to be imported were fibre, amorphous nylon, cable filling compounds, and nylon 12. The raw materials to be procured domestically were colouring inks, fibre-reinforced plastic rod, low-density polyethylene granules, high-density polyethylene granules, and wooden drums. The company would not encounter problems in importing raw materials because of its proximity to the port. Both imported and indigenous raw materials were available in sufficient quantities from reputed vendors.

**BASIC DATA**

See Schedule I to Schedule V of the student spreadsheet (see Ivey product no. 7B19N004) for the preliminary data required for forecasting the income statement and the balance sheet for the project.

**Other Assumptions**

* Inflation was not taken into consideration because it was expected that the input cost of raw materials in the high-technology sector would decrease in the international market. The net realization from the sale of the products would also decrease, but the gross margin of the product sold would remain constant. Therefore, there would be no inflationary impact on a net basis when both the selling price of the product and the input cost of the raw materials were considered.
* Other operating costs would form a minor portion of the total operating cost when compared to the cost of raw materials. Therefore, the impact of inflation on the other operating costs would not have a significant effect on the total operating cost. Also, it was assumed that increased efficiencies in future operations would offset the impact of inflation on the other operating costs.
* Depreciation on fixed assets would be calculated on a straight-line method basis at 19 per cent per year, which would amount to ₹79 million for each year.
* The salvage value of the fixed assets at the end of the project’s life would be ₹20.80 million.
* Working capital would be recovered in full at the end of the project’s life.
* The effective income tax rate was assumed to be 30 per cent for the company.
* The interest rate on long-term debt was assumed to be 12 per cent per year, on a yearly repayment basis. The repayment of principal would be made at the end of each year starting from FY 2017/18. The collateral provided to the bank for the term loan would be fixed assets.
* The interest on bank borrowing on working capital was 14 per cent per year, and the collateral provided to the bank would be hypothecation of stocks and debtors.
* The required rate of return by IVTL (the equity shareholder) was 20 per cent per year, because OFC was a high-technology project. Accordingly, the weighted average cost of capital for the project would be 14.7 per cent per year.

Agarwal had asked a management trainee to do some preliminary groundwork for the project before he called upon Saxena to perform the economic viability study. The management trainee had done a strengths, weaknesses, opportunities, and threats (SWOT) analysis of CEC (see Exhibit 4). He had also compiled different ratios for the OFC industry in India (see Exhibit 5) and had collected information on general bank lending norms for term loans in India (see Exhibit 6).

Agarwal wanted to present a proposal to IVTL’s top management that would give an accurate picture of the project so the company could determine whether to go ahead. Saxena proceeded with the task entrusted to him by systematically and accurately filling in the information required by Schedules I to XIV (see Ivey product no. 7B19N004). Because it had already been ascertained that the project was technically viable, the big question now was whether it would also be economically viable.

**Exhibit TN-1: IVTL FINANCIAL PERFORMANCE (₹ Millions)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fiscal Year** | **Sales** | **Net Profit** | **Net Profit Margin** | **Sales Growth (YoY)** | **Net Profit Growth (YoY)** |
| 2010/11 | 1,989 | 201 | 10.1% | — | — |
| 2011/12 | 2,607 | 114 | 4.4% | 31% | −43% |
| 2012/13 | 6,053 | 548 | 9.1% | 132% | 381% |
| 2013/14 | 20,187 | 1,474 | 7.3% | 234% | 169% |
| 2014/15 | 25,510 | 1,899 | 7.4% | 26% | 29% |
| **Compound Annual Growth Rate** | | |  | **89%** | **75%** |

Note: ₹ = INR = Indian rupee; ₹1 = US$0.0150 on January 1, 2016; YoY = year over year.

Source: Company files.

**Exhibit 2: optical fibre cable Manufacturing Process**

Source: Company files.

**Exhibit 3: IVTL PROJECT—PROPOSED INSTALLED CAPACITY AND CAPACITY UTILIZATION FOR DIFFERENT CABLES**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fiscal Year** | | | | |
| **Description** | **Units** | **2017/18** | **2018/19** | **2019/20** | **2020/21** | **2021/22** |
| **Installed Capacity** |  |  |  |  |  |  |
| 48 F SS Armoured Cable | km/per annum | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 |
| 48 F Arial Cable | km/per annum | 18,000 | 18,000 | 18,000 | 18,000 | 18,000 |
| 48 F Micro Cable | km/per annum | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 |
| 1 F FTTH Drop Cable | km/per annum | 48,000 | 48,000 | 48,000 | 48,000 | 48,000 |
| **Capacity Utilization** |  |  |  |  |  |  |
| 48 F SS Armoured Cable |  | 60% | 70% | 80% | 90% | 90% |
| 48 F Arial Cable |  | 60% | 70% | 80% | 90% | 90% |
| 48 F Micro Cable |  | 60% | 70% | 80% | 90% | 90% |
| 1 F FTTH Drop Cable |  | 60% | 70% | 80% | 90% | 90% |

Note: F = fibre; F SS = fibre stainless steel; FTTH = fibre to the home; km = kilometre.

Source: Company files.

**Exhibit 4: SWOT Analysis of Cosmic Equipment Company ltd.**

|  |  |
| --- | --- |
| **Strengths** | **Weaknesses** |
| * The company directors had extensive experience in the optical fibre cable (OFC) industry. * The holding company, IVTL, was already involved in OFC manufacturing. Thus, CEC would have easy access to both vendors and customers. * The plant was proposed to be set up in a factory building already constructed by CEC, thereby reducing the building costs of the project. * The plant would be located in Cochin, which was a port and well-connected internationally. | * Costs of the project could increase due to time overrun and cost overrun. * The company would import part of the raw materials for OFC manufacturing, exposing the project to foreign exchange fluctuation risk. |
| **Opportunities** | **Threats** |
| * The technology for the project was well-established, and the plant and machinery could be sourced from reputed suppliers with a proven track record. * Demand for OFC had had a major boost from government projects such as the National Optical Fibre Network, the Network for Spectrum, and the Digital India Program. * OFC manufacturers in India were few in number, although there had been a tremendous increase in demand for OFC. | * There were few barriers to entry. New entrants in OFC manufacturing could lead to increased competition in the future. * There was a product obsolescence risk because OFC could be replaced by a superior telecommunications technology. * The company could fail to capture the forecasted market share and to sell all of its production in the domestic and overseas market together. * The company might not be able to obtain all the statutory clearances from the government. * The generic threat of economic slowdown existed, which might affect the demand for OFC. |

Note: CEC = Cosmic Equipment Company Ltd.; IVTL = Indus Valley Telecom Ltd.; SWOT = strengths, weaknesses, opportunities, and threats.

Source: Company files.

**Exhibit 5: Optical Fibre Cable industry in India—Selected Ratios (Average)**

|  |  |
| --- | --- |
| **Ratio** | **Average Value** |
| Gross Profit Ratio | 9.20% |
| Net Profit Ratio | 3.20% |
| Current Ratio | 1.62 |
| Quick Ratio | 1.12 |
| Return on Net Worth | 7.10% |
| Return on Assets | 10.80% |
| Return on Capital Employed | 15.30% |
| Debt–Equity Ratio | 0.36 |
| Total Outside Liabilities/Tangible Net Worth | 2.37 |
| Interest Coverage Ratio | 3.15 |
| Fixed Asset Turnover | 3.94 |
| Fixed Assets to Net Worth | 0.56 |
| Sales to Capital Employed | 1.30 |

Note: The industry average was calculated based on nine companies. The ratios were averaged over a period of three years: fiscal years 2012/13, 2013/14, and 2014/15.

Source: “Optical Fibre Cable Industry, India,” Centre for Monitoring Indian Economy Pvt. Ltd., Prowess Database, accessed December 20, 2017.

**Exhibit 6: General Bank Lending Norms for Term LoanS in India**

|  |  |
| --- | --- |
| **Criteria** | **Lending Norm** |
| Profitability | Promoters\* should have an impeccable track record |
| Credit History | No known default by the company promoters or group |
| Promoter’s Contribution | Minimum 25–30% of the total project cost |
| Interest Coverage Ratio | Minimum 2:1 |
| Debt Service Coverage Ratio | Average 2× and in each year minimum 1× |
| Fixed Assets Coverage Ratio | Minimum 1.4:1 |
| Debt–Equity Ratio | Maximum 1.5:1 |
| Maximum Total Outside Liabilities/Tangible Net Worth | Maximum total outside liabilities/tangible net worth of 3:1 |
| Internal Rate of Return (IRR) | IRR over and above WACC (IRR spread) should be minimum 4–5% |
| Current Ratio | Minimum 1.33:1 |

Note: \*Promoters were people or entities who had major equity shareholdings in the company and controlling interest in the company’s management. WACC = weighted average cost of capital.

Source: Company files.

1. ₹ = INR = Indian rupee; all currency amounts are in ₹ unless otherwise indicated; ₹1 = US$0.0150 on January 1, 2016. [↑](#footnote-ref-1)
2. A dormant company was a company that had had no business operations for a minimum period of two years but that held an asset or an intellectual property. [↑](#footnote-ref-2)
3. “Indian Optical Fiber Cables (OFC) Market to Reach USD424 Million by 2020,” TechSci Research, February 17, 2016, accessed December 15, 2017, www.techsciresearch.com/news/298-india-optical-fiber-cables-ofc-market-to-reach-usd424-million-by-2020.html. [↑](#footnote-ref-3)
4. Frost & Sullivan, *Overview of Telecom Sector in India 2015*, February 16, 2016. [↑](#footnote-ref-4)
5. Telecom Regulatory Authority of India, *Yearly Performance Indicators of Indian Telecom Sector (First Edition) 2016*, July 3, 2017, accessed December 14, 2017, https://trai.gov.in/sites/default/files/Yearly\_PI\_Reports\_2016.pdf. [↑](#footnote-ref-5)
6. 3G (third generation) technology was used to transfer data besides voice signals. 4G (fourth generation) technology was more advanced yet and enabled the transmission of video calls and mobile television in addition to the applications available in 3G technology. [↑](#footnote-ref-6)
7. Dun & Bradstreet, “Telecom,” in *Macroeconomic and Sectoral Outlook 2014–15*, October 23, 2015. [↑](#footnote-ref-7)
8. Ibid. [↑](#footnote-ref-8)
9. Ibid. [↑](#footnote-ref-9)
10. Frost & Sullivan, op. cit. [↑](#footnote-ref-10)