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9B18N003

Yash Building Centre: Planning for expansion

M. Kannadhasan, Vinay Goyal, and S.K. Mitra wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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In March 2016, after achieving growth of more than 100 per cent and gaining goodwill in the construction market among builders and contractors, Mangesh Jadhav, managing partner of Yash Building Centre (YBC), was planning to expand. After elaborate discussions with local builders, Jadhav planned to enter the business of tiles, pavers, and curbstones. He believed that this expansion would improve the firm’s profitability and allow him to take full advantage of the relations with the company’s existing customers. After discussing the matter with his partner and considering the report submitted by a consultant Jadhav had appointed, Jadhav needed to decide whether to launch the new product line or continue with his existing line. Before he made his decision, Jadhav needed to consider the return on investment along with the capacity at which the new unit would break even.

company background

YBC was created by Jadhav and Shubhangi Bhamkar in 2014 as a partnership unit. In the short span of two years, the firm established itself as a supplier of quality fly ash bricks and blocks to building and other construction contractors. YBC was ISO-9001 certified and used the best skilled labour in its production process. It emerged as the prime manufacturer and supplier of fly ash bricks in Raipur—the capital city of Chhattisgarh—in central India. The firm owned land with ease of access to railway, road, and other transportation facilities, and basic infrastructure was erected on the land. Its operational capability mainly catered to the requirements of building contractors, and it did not sell its product in the retail market.

YBC started business by initially purchasing one brick-making machine, a mixer, a conveyer, and moulds. It used this equipment to manufacture two types of bricks and blocks. Fly ash bricks were in two sizes: 8 x 4 x 4 inches and 9 x 4 x 3 inches. Manufactured blocks were 16 x 8 x 6 inches. The firm used hydraulic vibration compaction technology.

YBC quickly gained a strong reputation among local contractors for quality and timely delivery. The firm could get orders in advance, which enabled it to make decisions about production quantity. The increase in demand motivated YBC to purchase one interlocking brick-making machine along with a vibrator to meet the growing demand from contractors. In 2014, the firm also purchased a truck for delivering the manufactured material. The increased demand for products led the firm to purchase another machine and truck for delivery in 2015. In the same year, YBC increased production by starting operations in another shift. To modernize production, the firm added an egg-laying machine and a mixer, which were used exclusively to manufacture blocks. This addition helped increase the firm’s product portfolio.

YBC’s manufacturing unit was approximately 5,058 square metres. It had all the modern facilities to manufacture bricks and blocks. It had an advanced warehousing facility to store additional products (if there were any) in a safe and secure manner, and to meet the urgent requirements of customers. Overall, the firm’s growth in terms of products and reputation in the market was satisfactory. The partners could provide all the necessary support to their customers in terms of product, quality, and replacement (if required).

Brick and Block manufacturing

Fly ash was the main constituent or raw material in the bricks and blocks. The other materials were metal dust, lime, dolomite chips, phosphogypsum, sand dust, super plastic, and white cement. The process consisted of mixing and grinding the materials in a pan mixer. The materials had to be mixed in specific proportions to ensure uniform quality and economic production. The pan mixer used for mixing was rotated for five minutes, and then the mix was discharged from the mixer. The mix, through the conveyer belt, was then moved to the brick-making machine where the hydraulically compressed bricks were continuously produced. A vibrating table was used to compact the mix into the moulds, making the bricks and blocks the desired shape and size. After compacting, the bricks and blocks were manually taken to the curing site on pallets, where they were cured by a water spray for early strength. The bricks and blocks were cured with water for approximately eight days to complete the moisturization process, which was the final step in the manufacturing process. The bricks and blocks were then ready for sale.

Financial Status

YBC was not considered to be a major player in the industry by its competitors and customers. As a small-scale firm catering to local markets, it faced challenges from other unorganized suppliers of building material. The products manufactured by YBC were used by a selective group of builders and wholesale distributors, who were reluctant to compromise on product quality. The company’s local supply helped contractors get quality products at a reasonable cost with minimal transportation costs. The firm’s overall performance in the first two years of operations was encouraging—despite it not having been able to earn a profit. The demand for YBC’s products resulted in the partners achieving profits from the third year onward (see Exhibits 1 and 2 and the student spreadsheet, 7B18N003).

Setting a new path

Celebrating two years of operations in 2016, Jadhav organized a get-together; he invited all of his customers, contractors, friends, relatives, and potential builders from nearby areas. In the informal discussions during the party, most of the builders, contractors, and executives of the construction firms seemed happy with YBC’s service and products. Many contractors and builders also shared the importance of tiles and pavers (required for their construction). They discussed the problems with tiles and pavers—the poor quality of the product and the huge transportation costs incurred in getting the product.

Jadhav saw an opportunity to expand the business along with the product portfolio. He deliberated with his partner and manufacturing staff on this issue. He was confident about the growth of the construction industry in the region and thought about how to capitalize on the opportunity of tiles and pavers. At the initial stage, both partners decided to hire a consultant to do the preliminary study of the potential market for the product. They appointed the consultant at a cost of ₹50,000[[1]](#footnote-1) and asked him to submit the report in one month.

Market potential

After regular discussions with the partners, considering all the relevant facts and the firm’s position, the consultant submitted the report. Based on the report, a market survey was also conducted by the firm itself in and around Raipur, keeping in mind the three products: tiles, paving blocks, and curbstones. These were the three products that the consultant suggested would also be in demand. The consultant pointed out applications not only in the construction of apartments but also in pavement, footpaths, gardens, passenger waiting sheds, bus stops, industries, and public places, which were common in urban areas.

Since Raipur was part of the newly formed state of Chhattisgarh, the government of Chhattisgarh was showing keen interest in the development of infrastructure and beautification of the city. Many improvements were to be made to roads, footpaths along the roadsides, government offices, industrial estates, commercial buildings, and other structures. Concrete paving blocks were ideal materials for footpaths due to their easy laying, and better look and finish; they were also more economical than cement roads. Tiles were used extensively outside large buildings and houses, as flooring in houses, in large commercial buildings and offices, and for residential apartments.

Chhattisgarh was said to be the land of opportunities. According to the Confederation of Indian Industry, Chhattisgarh was expected to become the number one state with world class infrastructure by 2022.[[2]](#footnote-2) The Confederation of Indian Industry clearly envisaged the present infrastructure as well as the opportunity for future growth in the state infrastructure.[[3]](#footnote-3)

Incentive for the new project

Jadhav was also motivated by the fact that the Chhattisgarh state government, to promote industries, provided an interest subsidy (75 per cent of interest paid up to five years) on the amount borrowed from the bank or financial institutions. (The maximum subsidy payable was ₹2 million.) The state government also provided exemptions from the payment of a 5 per cent electricity duty for new units. Furthermore, the government reimbursed the project up to ₹100,000.

These subsidies were payable by the government with a time lag, just as the project report subsidy was payable one year after the start of the project and interest subsidies were payable in the next year of paying the interest. The interest subsidy was only payable in the case of capital investment; it was not payable on any borrowings done by the company for working capital. The administrative cost estimated by the consultant for receiving the government subsidies was estimated to be 5 per cent of the claimed amount.

Financial Projections for the Proposed Project

The consultant obtained the market information from his research team and put the proposal to Jadhav and his partner. After discussions with the partners, the consultant estimated the resources and financial requirements for the project, and submitted a five-year projection to the partners for their consideration. The financial and other estimates included capital investment, working capital investment, production scheduling and estimates, approximate operating expenses, loan requirement from the bank, working capital loan requirement from the bank, and revenue. The partners discussed these estimates and found them to be appropriate.

The consultant also provided estimates of the land required, the cost of land and land development, the construction required to commence the plant operations, and the sheds and storage required (while keeping in mind the production and sales for the next five years). Jadhav and his partner anticipated the expenses required to establish the new production unit and to manufacture new products. They expected the land cost to be ₹75 per square foot with a minimum land requirement of 5,500 square feet. The land adjacent to their existing plant was available and they intended to purchase it. The construction area required to build the office, working shed, and storage were estimated to be 500, 2,000, and 1,200 square feet, respectively. The expected costs of construction of these were anticipated to be ₹650, ₹300, and ₹200 per square foot, respectively (see Exhibit 3).

Plant, Machinery, Standing, and other Fixed Costs

All the details of plant, machinery, and preoperative expenses were summed up (see Exhibit 4). This information included the estimated machinery and equipment details such as the concrete mixer, colour mixer, vibrator table, and polyvinyl chloride moulds—along with their cost, life, and disposal value. The wooden plates were to be replaced every six months at a cost of ₹100,000. The total pre-operating expenses were estimated to be ₹190,000, which was comprised of a project report cost of ₹50,000, interest charges during the implementation period of ₹20,000, non-refundable deposits of ₹50,000 (for the electricity board and other legal bodies), and travelling and establishment expenses of ₹70,000.

Capacity and Use of the New Plant

After due deliberation, YBC decided to produce two types of tiles and pavers: grey and coloured, with two variants in each category—except the curbstones. Based on demand, it decided to produce grey pavers, coloured pavers, grey tiles, and coloured tiles at these percentages: 66, 22, 10, 2.

It was predicted that the unit would run for one shift a day for 25 days a month (300 days a year). If need arose and demand for products increased, more shifts would be run. The installed capacity was based on the purchase of equipment and other resources, keeping in mind that the expectation was 1,000 square feet per day for pavers and tiles, and 50 running feet per day for curbstones. The expected capacity use of tiles and pavers was 15, 20, 25, 30, and 35 per cent in the first, second, third, fourth, and fifth years, respectively. Curbstones were expected to be produced at 5, 10, 15, 20, and 35 per cent of their capacity in the first, second, third, fourth, and fifth years, respectively. The expected capacity use for the sixth year was anticipated to be 50 per cent. Full capacity use was expected to be achieved only in the ninth year after the start of commercial production. It was assumed that production would be carried on evenly throughout the year.

Requirement and Purchase of Raw Materials

The partners considered the raw materials required to produce one square foot of tiles and pavers (and one running foot of curbstones) (see Exhibit 5). To avoid disruption in manufacturing, they decided to buy 10 per cent more raw materials than required for the estimated production. The prices of all raw materials were expected to increase by approximately 5 per cent from the second year onward. The procurement of all raw materials was on credit, and payments were made 30 days after procurement. The partners decided to maintain an inventory of raw material equal to 10 per cent of production; similarly, the beginning inventory of raw material at the start of the year/month was to be equal to one month of production.

Manufacturing Costs

Labour wages were fixed in consultation with the labourers every year. In the first year, the cost was estimated at ₹7 per square foot for pavers and tiles, and ₹6.50 per running foot of curbstones, which was expected to increase up to 10 per cent every year. The power cost was estimated to be ₹2.50 per square foot for pavers and tiles, and ₹3 per running foot of curbstones. The payment for both the labourers and power cost was to be done in the same month.

Operating Costs

The salary for the office staff was expected to be ₹15,000 per month, paid on the 10th day of the subsequent month. This amount included the accountant’s salary of ₹5,000. The accountant was not appointed for this project exclusively but was also taking care of accounting for the old project (the company apportioned the ₹5,000 salary of the accountant to this project). The other monthly estimated operating expenses were approximately ₹2,000 for telephone expenses, ₹500 for postage, ₹1,000 for printing and stationery, ₹2,000 for repairs and maintenance, ₹7,000 for fuel charges, ₹8,000 for transportation charges, and ₹2,000 for miscellaneous expenses. All these monthly expenses were expected to increase 10 per cent per year and were to be paid in the month after they were incurred.

Other information

The raw material holding period was expected to be 30 days. The finished goods inventory was expected to be in the warehouse for 60 days. The work in process was anticipated to be 23 days—two days for the production process and 21 days for the curing process, which was mandatory in the industry.

Sales

It was estimated that 50 per cent of sales would be cash and 50 per cent would be credit. The credit sales were to be collected two months after the sales, with no bad debts. The selling prices of the tiles, pavers, and curbstones were provided on a per square foot basis (see Exhibit 6). The selling prices were expected to increase 20 per cent every year in view of the increasing cost of production and to meet market demand.

Capital Investment and Bank loans

YBC decided to borrow from the bank for capital investment and for the working capital requirement. Because of the firm’s existing relationship, market goodwill, and present transactions with the bank, it was not difficult to get the funds. The bank manager had already shown the firm the interest required to finance after the submission of the project report. The tentative proposal received from the bank suggested that the term loan interest rate was to be 16.25 per cent for a period of five years, with an equated monthly installment payable monthly.[[4]](#footnote-4) The firm also arranged for working capital facility with the bank at an interest rate of 14.75 per cent—although the interest computation by the bank was to be done based on the principal outstanding on the first day of the year.

It was mutually decided by the partners to pay interest at a rate of 12 per cent on the capital contributed by them for the new project (if required). They also computed the firm’s cost of capital, which was anticipated to be 8 per cent. The partners expected a return of 20 per cent on the proposed project (including interest on their own capital). As the firm was a partnership, the *Indian Partnership Act* allowed interest to be charged on partners’ capital.

Decision dilemma

To be competitive, Jadhav needed to take the utmost care in making investment decisions. Each project had to enhance the firm’s value. Jadhav faced the dilemma of whether to accept this new project—of deciding whether it would fit the operations and enhance the firm’s value—and how to convince his partner to accept and implement the project.

Exhibit 1: Income statement (in ₹ thousands)

|  |  |  |
| --- | --- | --- |
|  | **2014–15** | **2015–16** |
| Sales | 3,887 | 7,153 |
| Other Income | 689 | 355 |
| Total Income | **4,576** | **7,508** |
| **Cost of Goods Sold:** | 2,143 | 3,770 |
| Raw Materials Consumed | 1,422 | 2,720 |
| Opening Stock of Raw Material | 233 | 426 |
| Purchases | 1,625 | 3,091 |
| Less: Closing Stock of Raw Material | 436 | 797 |
| **Manufacturing Expenses:** |  |  |
| Labour | 735 | 656 |
| Power | 169 | 207 |
| Other Manufacturing Expenses | 230 | 357 |
| Add: Opening Stock of Finished Goods | 473 | 886 |
| Less: Closing Stock of Finished Goods | 886 | 1,056 |
| **Gross Profit** | **2,433** | **3,738** |
| **Operating Expenses:** |  |  |
| Administrative Expenses | 574 | 735 |
| Selling and Distribution Expenses | 38 | 106 |
| Depreciation | 1,433 | 1,290 |
| Earnings before Interest and Tax | **388** | **1,607** |
| Interest on Long-term Loan and Short-term Loans | 334 | 1,267 |
| Interest for Others | 0 | 13 |
| Interest for Partners | 418 | 326 |
| Taxable Income (Loss) | **–364** | **1** |

Source: Company data.

Exhibit 2: Balance Sheet (in ₹ thousands)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assets** | **2014–15** | **2015–16** | **Capital and Liabilities** | **2014–15** | **2015–16** |
| Gross Block of Fixed Assets | 11,036 | 10,376 | Partners’ Capital | 3,487 | 3,480 |
| Less: Depreciation | 1,433 | 1,290 | Interest on Capital | 418 | 327 |
| Net Fixed Assets | 9,603 | 9,086 | Less: Loss and Withdrawals | 1,364 | 347 |
| Current Assets, Loans, and Advances |  |  | Capital | 2,541 | 3,460 |
| Cash and Bank Balances | 275 | 626 | Secured Loan | 8,566 | 7,645 |
| Sundry Debtors | 687 | 855 | Unsecured Loan | 980 | 1,870 |
| Inventory | 1,303 | 84 | Other Long-term Liabilities |  |  |
| Deposits | 84 | 1,853 | Sundry Creditors | 296 | 318 |
| Loans and Advances | 3 | 748 | Advances from Customers | 29 | 77 |
| Preliminary Expenses | 173 | 154 | Provisions | 13 | 36 |
|  | **12,425** | **13,406** |  | **12,425** | **13,406** |

Source: Company data.

Exhibit 3: Total cost of Land and Building construction

|  |  |  |  |
| --- | --- | --- | --- |
| **Particulars** | **Square Feet** | **Rate per Square Foot (in ₹)** | **Value (in ₹)** |
| Land | 5,500 | 75 | 412,500 |
| Levelling of Plot and Site Preparation |  |  | 50,000 |
| Built-up Area |  |  |  |
| Office | 500 | 650 | 325,000 |
| Working Shed | 2,000 | 300 | 600,000 |
| Storage | 1,200 | 200 | 240,000 |
| Total |  |  | **1,627,500** |

Source: Company data.

Exhibit 4: Plant, Machinery, Equipment, and pre-Operative expenses (in ₹)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Particulars** | **Quantity** | **Cost per Unit** | **Total Value** | **Life** | **Terminal Value** | **Depreciation** |
| Concrete Mixer | 1 | 65,000 | 65,000 | 2 | 20,000 | 22,500 |
| Colour Mixer | 2 | 50,000 | 100,000 | 3 | 10,000 | 30,000 |
| Vibrator Table | 4 | 65,000 | 260,000 | 5 | 20,000 | 48,000 |
| Polyvinyl chloride Moulds | 16 | 60,000 | 960,000 | 2 | 320,000 | 320,000 |
| Total |  |  | **1,385,000** |  |  |  |

|  |  |
| --- | --- |
| **Pre-Operative Expenses** |  |
| **Particulars** | **Amount** |
| Project Report | 50,000 |
| Non-refundable Deposits | 50,000 |
| Interest Charges During Implementation | 20,000 |
| Travelling Expenses | 70,000 |
| **TOTAL** | 190,000 |

Source: Company data.

**Exhibit 5: Raw Material requirement per square foot (in Kilogram units)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Raw Material** | **60 mm Paver** | | **12 x 12 Inch Tile** | | **Curbstone** | **Price per Kilogram in ₹** |
| **Coloured** | **Grey** | **Coloured** | **Grey** |
| Cement | 1.9444 | 1.9444 | 0.7954 | 0.7954 | 2.6923 | 4.60 |
| Sand | 3.5555 | 3.3555 | 1.3365 | 1.3365 | 4.4923 | 0.395 |
| Grits | 6.5555 | 6.5555 | 2.6818 | 2.6818 | 9.0769 | 0.385 |
| Chemical | 0.0266 | 0.0266 | 0.0109 | 0.0109 | 0.0369 | 80.00 |
| Dust | 2.2111 | 2.2111 | 0.9045 | 0.9045 | 2.8153 | 0.12 |
| Marble Chips | 0.1777 | - | 0.0727 | - | - | 3.00 |
| Colour | 0.0222 | - | 0.0093 | - | - | 105.00 |
| White Cement | 0.1111 | - | 0.0454 | - | - | 7.50 |

Note: mm = millimetre

Source: Company data.

Exhibit 6: EXPECTED SALE PRICE OF PROPOSED PRODUCTS (in ₹)

|  |  |
| --- | --- |
| **Products** | **Price Per Square Foot** |
| 60 mm Paver Grey | 50 |
| 60 mm Paver Coloured | 52 |
| Tile—Grey | 40 |
| Tile—Coloured | 42 |
| Curbstone (in numbers) | 52 |

Source: Company data.

1. All currency amounts are in ₹ unless otherwise specified; ₹ = INR = Indian rupee; ₹1 = US$0.0150 on March 31, 2016. [↑](#footnote-ref-1)
2. Confederation of Indian Industry, *Chattisgarh@2022: Vision Document* (Raipur, Chhattisgarh State Office, n.d.),accessed November 25, 2017, www.indiaat75.in/document/chattisgarh\_vision\_document.pdf. [↑](#footnote-ref-2)
3. Ibid. [↑](#footnote-ref-3)
4. The equated monthly installment consisted of principal payments and the interest on the outstanding principal. [↑](#footnote-ref-4)