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HDTV Systems

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CASE DESCRIPTION

The primary subject matter of HDTV Systems is capital budgeting within a mid-size electronics firm, and analysis of a possible merger with a large firm of international scale. HDTV Systems is recommended for students who have already had exposure to capital budgeting, cost of capital, and valuation techniques; thus, it is most appropriate for upper-level undergraduate students and second year graduate students. The case can be taught in two class hours, and student preparation should require no more than two hours.

CASE SYNOPSIS

This case involves both quantitative and qualitative aspects of capital budgeting in a firm whose principal owner desires growth and new products but finds constraints primarily due to the size of the company. The case begins with a description of HDTV Systems as a closely-held company with limitations to growth. It presents limitations to funding and shortfalls in analytical processes. Cash flow estimates for a new consumer television product are presented as well as the project's internal rate of return and payback period. The student will learn that capital budgeting is a complex process going beyond calculations of investment worth.

As the analysis of the capital expenditure is carried out, HDTV Systems entertains being acquired by Global Electronics. The combination is seen as perhaps offering a more realistic setting for the large capital expenditure for manufacturing the new television project. The case draws out financial motivations for the potential merger, as well as projections of free cash flow for HDTV Systems as a division of Global.

INSTRUCTORS' NOTES

Teaching Suggestions

The case allows instructors to demonstrate both acceptable and weak capital budgeting criteria, i.e., the IRR and Payback Period methods, respectively. Instructors can bring in other methods such as Net Present Value, and correct the Payback Period to reflect present value of cash flows.

The case also addresses the "post audit" process in which actual cash flows from past capital expenditures are compared to those originally forecasted. Instructors may also want to bring in underlying causes for shortfalls in cash flows such as missed predictions about consumer acceptance of company products, and in that way demonstrate the importance of marketing research upon financial decisions.

HDTV Systems highlights the advantages of merger with a larger, more sophisticated parent firm. Yet, as a target is brought into a larger parent, its results may not automatically improve. The case provides comprehensive data for use in evaluating the value of HDTV Systems as a potential target acquisition for Global. Instructors can emphasize the similarities of valuing a fixed asset acquisition (the production facilities and equipment for the high definition television considered by HDTV Systems) and valuing an entire target company (HDTV Systems as an acquisition target of Global).

HDTV Systems is considering moving into the production of a high-end electronic product. If the macro economy drops, so will the degree of luxury spending. Firms operating in this environment are required to develop insight into the demand for future products, and there will inevitably be a mix of hits and misses. The key is to be successful most of the time in product development design and sales, so that profitability and shareholder wealth increase on balance across the product offerings.

The case further allows instructors to present a realistic capital request through Exhibit 1 in the case. In this numerical example, the development of periodic cash flows is presented, and the resulting IRR and Payback are presented. Instructors can point out the flaw in assuming a fixed product price over time, as well as the importance of upfront start-up expenses, working capital requirements, and salvage value. Instructors may also address the shortfalls of the payback period.

DISCUSSION QUESTIONS

1. **George believed that as long as the IRR of a project more than covered the cost of capital, the firm should benefit. He also felt that the payback period indicated how long HDTV Systems' investment was at risk. Evaluate these investment criteria generally, as well as the specific interpretation George made of the IRR and payback period.**

    The IRR measure of investment worth is reliable in this case because the cash flows are normal with one sign change, and because the reinvestment rate assumption at 13.5% is reasonable to meet. However, the use of the firm's cost of capital without adjusting for project-specific risk can be challenged. Suppliers of new capital make an assessment of the risk of the firm's growth opportunities, but may or may not have specific information about the risk of HDTV Systems potential, new investment(s) compared to the risk of the firm's existing assets.

The payback period as calculated in the case ignores time value of money, and it ignores cash flows beyond the payback. Additionally, the payback period requires a subjective hurdle, i.e. a maximum acceptable payback is needed and it is subjectively determined.

Many potential asset acquisitions are of a replacement nature, and the risk of such investments is less than for equipment for new product offerings. In the case of the UHDTV project, there is contemplation of a new television model within a company that already manufactures televisions and other electronic products; thus, there is less risk than in alternative projects that might take the company into an entirely new direction.

2. **Discuss the effects on the net income of HDTV Systems if the majority of projects undertaken, especially those with large capital outlays, result in actual cash flows below cash flows originally estimated. What are the implications if the expected return is not achieved and the company has to absorb the depreciation expense associated with weak projects undertaken in the past?**

Future net income will definitely be lower if cash flows from capital expenditures are lower than forecasted. However, if a firm calculates a high IRR for a particular project with strong projected cash flows, actual cash flows can be lower than projected and net income can still increase.

Depreciation continues under the original schedule even though revenues and/or do not meet projections. Project abandonment must be considered if weak performance results, and depreciation write-off will likely result even if a company finds a buyer for the fixed assets.

3. **Discuss some steps that could be taken to allow HDTV Systems to recover market share.**

The company could identify production cost reduction opportunities and then perhaps lower product price; it could also enhance product features and/or quality, find more effective promotional methods, offer innovative new products, and additional distribution channels.

4. **How could selling HDTV Systems to another firm lead to improvement of its financial performance and to enhanced shareholder returns?**

There should be synergies derived from Global's acquisition of HDTV Systems; the larger parent firm may have more effective management and better and less expensive access to capital, and it may have more flexibility to enter new markets. However, large firms may become lethargic, suffer from poor coordination of the firm's activities, and exhibit agency problems.

5. **Comment on the stable price assumption underlying the IRR and payback period results for the potential UHDTV project.**

The consumer electronics industry has long been characterized by declining product price after an introductory period, and the assumption about constant price over eight years is unrealistic.

6. **Verify the accuracy of the 13.5% IRR result for the UHDTV, as well as the six year payback period.**

The IRR and payback period shown in Exhibit 1 to the case can be verified using a calculator or Excel.

7. **Describe the underlying reason(s) for the trend over time in both cost per unit and operating margin, as shown in the supplemental data in Exhibit 1.**

The general decline in cost per unit occurs because of the level of depreciation. Then, as cost per unit declines, operating margin increases.

8. **Evaluate the uncertainty of Global actually realizing the cost savings assumed through synergies.**

The value of HDTV Systems as perceived by Global may not be fully realized if Global finds that it needs to hire additional management to operate the acquisition. The possibility exists that Global could overestimate administrative synergies, leading to higher costs than originally projected.

9. **Discuss the realism of the assumption that the HDTV division will use non-union workers in its operations.**

It is a tenuous assumption that the HDTV division will be able to remain non-union, while the remainder of Global's hourly plant workers are unionized. Perhaps this disparity can remain for a period of time, but at some point one can foresee higher wages at the HDTV division.

10. Name and discuss other valuation techniques that could have been used in connection with Global's assessment of acquiring HDTV Systems.

Global could have used multiples of earnings or cash flow. The multiple approach requires obtaining multiples of companies in the public market, and applying those multiples to HDTV's earnings and/or cash flow. Adjustments would need to be made for the smaller size and likely greater risk of HDTV Systems compared to the public companies from which the multiples were obtained. Another approach that could be used, at least as a reality check for the discounted cash flow and multiple methods, is the net assets approach; here, the target's liabilities are subtracted from the book and/or market value of the assets.

11. One objective to acquisition of a target in the same industry as the acquiring firm is to "take out the competition". What are the basic advantages to doing so?

The acquiring firm acquires market share and greater control over product pricing. In this way, the acquiring firm's revenues should increase.

12. Discuss other synergies that Global might achieve beyond savings in administrative costs.

Global should be able to leverage its relationships with suppliers of materials. The company should be able to achieve economies through purchasing in larger volume. The fact that both companies are in the same line of business will enhance the likelihood of achieving these savings.