

# A Case Study of Sampa Videos Inc.

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## Introduction

Sampa Video, Inc. was the second largest chain of videocassette rental stores in the greater Boston area, operating 30 wholly owned outlets. Begun in 1988 as a small store in Harvard Square catering mostly to students, the company grew rapidly, primarily due to its reputation for customer service and an extensive selection of foreign and independent movies. In March 2001, Sampa Video was considering entering the business of home delivery of movie rentals. The company would set up a web page where customers could choose movies based available in-store inventory and pick a time for delivery. This case study tries to evaluate whether they should go along with this project or not.

## Equity Financed

Assuming the project is completely equity financed, the discount rate will be equal to the equity cost of capital. Using the information on comparable firms, the unlevered equity beta is calculated to be equal to 1.5. The risk free interest rate is 5% and the EMRP of 7.2% is used.

$$r_E = 5 + 1.5 * 7.2 = 15.80\%$$

The Free cash flows have been calculated as : EBIAT + Depreciation – Investment in Working Capital - Capx. Discounted free cash flows using a discount rate of 15.80% are also shown.

	2002E	2003E	2004E	2005E	2006E	Future(FCF=495 @ 5% growth)
Sales	1,200	2,400	3,900	5,600	7,500	
EBITD <sup>a</sup>	180	360	585	840	1,125	
Depreciation	(200)	(225)	(250)	(275)	(300)	
EBIT	(20)	135	335	565	825	
Tax Expense	8	(54)	(134)	(226)	(330)	
EBIAT <sup>a</sup>	(12)	81	201	339	495	
CAPX <sup>b</sup>	300	300	300	300	300	
Investment in Working Capital	0	0	0	0	0	
Free cash flows	-112	6	151	314	495	4812.5
Discount at rE	1.158	1.340964	1.5528363	1.7981844	2.0822976	2.082297592285
Discounted FCF	-96.71848	4.474393	97.241415	174.62057	237.71818	2311.149000907

Figure 1: FCF expected

The total discounted FCF is equal to 2728.48508522593. Subtracting the initial investment of 1500, we get **NPV = 1228.485**

## Adjusted Present Value

If a constant debt of 750 is borrowed, we can directly add the tax shielding provided and add to the current value of the project. The corporate tax rate is at 40% and hence the tax shielding =  $0.4 * 750 = 300$ . Therefore the NPV of the project with a borrowed debt of 750 will have an **NPV** of  $1228.485 + 300 = \mathbf{1528.485}$ . This offers the highest NPV for the project

## WACC Method

The capital structure is 25% Debt and 75% Equity financed. The unlevered cost of capital ( $r_A$ ) is 15.8% and the cost of debt ( $r_D$ ) is 6.8%. The levered equity cost of capital =  $r_E = r_A + (D/E) * (r_A - r_D)$  and substituting the values we get:

$$r_E = 15.8\% + (0.333) * (15.80\% - 6.80\%) = 18.80\%$$

Now  $r_{WACC}$  can be computed as the following:

$$r_{WACC} = \frac{E}{E+D} * r_E + \frac{D}{E+D} * r_D * (1 - \tau(c))$$

$$r_{WACC} = 0.75 * 18.80 + 0.25 * 6.80 * (1 - 0.4) = 15.12\%$$

Discounting the FCF using  $r_{WACC}$  we get the following. Also the terminal value changes due to a change in the discount rate.

			FREE CASH FLOWS DISCOUNTED USING RWACC:					
	2002E	2003E	2004E	2005E	2006E	Future Growth		
FCF	-112	6	151	314	495	5135.87		
Discount ar Rwacc	1.1512	1.3252614	1.525641	1.7563179	2.0218731	2.021873148465	Total	NPV = Total -1500
Discounted FCF	-97.289785	4.5274086	98.974794	178.78313	244.82248	2540.154412704	2969.97244	<b>1469.97243609016</b>

Figure 2: FCF using WACC as the discount rate

We get the total discounted FCF = 2969.97, and after subtracting an initial investment of 1500, we get the projects's **NPV = 1469.97**

## Debt Balances

We calculate the Debt Balances to be 25% of the PV of the future cash flows at the end of a certain year. We inverse the discounting added earlier by multiplying it with a factor of  $(1 + \text{discount rate})^{(\text{year} - 2002)}$ . For the year 2004 we get:

$$PV_{FCF} = (98.97 + 178.78 + 244.82 + 2540.15) * (1.1512)^2 = 4058.92$$

The debt balance at the end of the year is simply 25% of this value = 1014.73

Finding Debt balances at the end of years						
	2002E	2003E	2004E	2005E	2006E	Future Growth
FCF	-112	6	151	314	495	5135.87
Discount ar Rwacc	1.1512	1.3252614	1.525641	1.7563179	2.0218731	2.021873148465
Discounted FCF	-97.289785	4.5274086	98.974794	178.78313	244.82248	2540.154412704
PV of future discounted FCF	2969.9724	3531.0323	4058.9243	4521.6337	4891.3047	
Debt balance	742.49311	882.75807	1014.7311	1130.4084	1222.8262	

Figure 3: Debt Balances

## Conclusion

The completely equity financed approach has the lowest valuation as it fails to provide for tax shielding and hence should not be used. The APV method returns the highest valuation for the project. The constant debt to equity ratio approach decreases the discount rate from 15.80% to 15.12% but the tax shielding also reduces as the debt is now dependent on the firms value. Even though the third approach seems to return lower NPV than the APV method, we must realise that this approach is the best to go forward with as this incorporates risk of both debt and equity. One explanation for the higher NPV for the APV approach is that we did not incorporate the Costs of Distress in our calculations.