[1] Light & Shadow Video – Teaching Note

Conor Vibert developed this teaching note to guide the use of the multimedia case entitled Light & Shadow Video for instructional purposes. It is not the purpose of this material to serve as an illustration of how to effectively or ineffectively address a managerial situation.

SUMMARY

Stephen Peters, owner of a small video sales and rental operation understands the changing nature of technology. In this multimedia case his challenge is to determine the return on equity of his business in order to figure out a path forward. Advice is being sought as to how to proceed in resolving this real life issue. Students are offered access to a set of transcribed video clips that outline the issue and its cause along with providing context for the issue. In order to arrive at alternative solutions and justify their choice of a solution, students are expected to use sources of information not found in the case.

KEYWORDS

- Business Valuation
- Small Business
- Video Rental

CASENET VIDEOS

Each video in this multimedia case features a segment of an interview with one of the organization's key decision makers. The videos describe:

1. the *Issue* facing the individual or organization
2. the *Cause* of the issue
3. *Background* information for the individual, organization and industry
4. *Alternatives* for addressing the issue
5. A suggested *Solution* and justification

Transcriptions for each video are also available. Students may not access the *Alternatives* and *Solution* videos or transcripts.

OBJECTIVES FOR TEACHING

There are a number of instructional objectives for this case.

- To enhance the decision making skills of students by having them address a real life issue faced by managers of Canadian or international companies.
- To provide students with a brief introduction to the video rental industry.

[1] The Author wishes to thank Stephen Peters for his/her support of this project. At Acadia University, thanks are in order for Dave Sheehan.

- To offer students an opportunity to analyze a situation using concepts that illustrate business valuation.

POSSIBLE TEACHING STRATEGY

This case is ideal for in-class case analysis or as an assignment. Assuming an 80 minute class, here is an approximate class schedule:

Time (minutes)	Task
5	Introduce case and divide students into groups.
15	Students view *Background* case videos and make notes.
5	Instructor plays the *Issue* and *Cause* clip(s).
25	Students identify alternatives, a solution and rationale.
20	Instructor guides a discussion around alternatives, solution and rationale.
10	Instructor plays the *Alternatives* and *Solution* clips.

If the case is used as an assignment, the instructor may want to focus assessment on:

1) **Decision-making process.** The instructor would evaluate writing style, appropriateness of information sources, alternatives, solution and rationale. This approach recognizes that the alternatives and solutions offered in the case are not necessarily optimal, and other choices may be equally effective. Students can be rewarded for their selection of decision making approaches, analytical frameworks and cited reference material.
2) **Outcomes.** The instructor would evaluate how closely student responses match those offered in the *Alternatives* and *Solution* video clips. Or, the instructor could use the insight of an existing research paper or analytical framework as the basis for judging outcomes.
3) **A combination of process and outcome**. The instructor may apportion the grade between process and outcomes.

POSSIBLE QUESTIONS FOR ASSIGNMENTS

Students can be asked to identify a set of alternatives to address the issue outlined in the case, a solution and rationale. Other questions that will help students prepare for their case analysis include:

- What are common challenges facing small business owners?
- Is selling products online costless?

CASE ANALYSIS

Issue: The *Issue* and *Cause* video clips outline the problem or challenge of the case.

- My name is Stephen Peters, owner of Light and Shadow Video. The issue I am dealing with is figuring out the ROE of my business and its segments so that I can decide what to do with it.

Analysis:

To start their analysis of the case, students should view the *Background* video clips. These clips should help students grasp the following points or case facts.

- This case focuses on a decision facing Stephen Peters, owner of a video rental store, Light and Shadow Video in Wolfville, Nova Scotia. It is the summer of 2009 and Stephen is an entrepreneur who has owned the store for six years and recently completed an upgrade of his video collection from VHS to DVD format. Stephen has been following the HD DVD/Blue Ray technology battle with keen interest and is aware that the future of video rentals lies in the online rental domain. Stephen's business is profitable but being located in a university town in a rural setting, he has witnessed the contraction of his overall client base. He expects that his business will remain profitable for two or three more years with his existing collection of videos.

The Background and Cause video clips offer the following financial information about Light and Shadow Video.

- Revenues are split between online and in store video sales and video rentals.
- Recent annual rental income is $45,000.
- Average Light & Shadow sales price per DVD is $25.00.
- Recently annual average sales are 1000 units online and 1000 units in the store.
- Gross margin is 80%.
- Existing Inventory 16,000 DVDs with an average purchase price of $5.00.
- For online sales Amazon fee is $2.00 per unit.
- Average annual expenses for the business are $50,000 and include $5000.00 in professional fees, $6000.00 in wages and $15,600.00 in rent.
- Annual net income split between retained earnings or taken out as a royalty.
- No retirement plans

Researching information sources other than the content of the cases should enable students to garner the following insights:

- From 2009 to 2014, revenue for the DVD, Game and Video Rental industry has severely contracted amid increasing external competition and a wider shift toward substitute services such as on-demand television and subscription-based streaming services. (IBISWorld, 2014)
- Industry Betas: $ß_{Storefront}$=0.83, $ß_{Online}$=1.31, $ß_{Storefront\ \&\ Online}$=2.62
- Digital movie purchases surged 47% in 2013 to $1.19 billion (Fritz, 2014)
- In 2014 Canadians spent 76 hours per month online, 25 hours of that total watching online videos, which equates to viewers watching 291 videos each per month (second worldwide to the U.S.A)
- Blockbuster and other large brick and mortar video rental companies depended on late fees to remain profitable in the industry. When other rental services such as Netflix removed late fees it applied tremendous stress on the financial sustainability of traditional movie renting.

With this information in hand students can be challenged to identify an analytic framework that will help them organize their thoughts.

- For instructors, a starting point might be for the student to undertake a SWOT Analysis. The strengths would focus on a fairly stable clientele along with Stephen Peters' entrepreneurial drive, the relatively low cost of his operation and his hands on management style. The weaknesses would include the location of his business in an area with a relatively low population base, the limited financial resources available to Stephen given his status as a small business owner and his DVD focused retail asset base. The instructor can guide the discussion by having the students research the HD DVD vs Blue Ray technology battle or point the students to the Statistic Canada site where they can explore the demographics of Peters' client base. Opportunities facing Stephen include the unique nature of his business in the marketplace, an operating environment that has been supportive of alternative organizational forms. Threats that Peters must worried about include the ongoing economic recession, the changing marketplace characterized by increasing consumer acceptance in the marketplace of online video rentals, and the size and financial strength of competitors.

Effort focused on research coupled with analysis should enable students to present a series of options. These can be compared to the options offered by the interviewee which are also summarized below and found in the Alternatives video clip.

- There are three alternatives. Continue as is with sales and rentals in the store and online. Close the store, sell inventory and start a new career. Close the store and business become an online seller.

- A financial analysis is critical part of this case and will enable the students to justify their choice of alternatives. **In Casenet, attached to the Cause video clip is a summary of the financial information.**

- Using this financial information, students can be guided to estimate Peter's cost of capital along with the return on equity for the online and store front segments of his business and the store front's figure ten years onward. To do so, students will need to construct income statements for each segment and then reconstruct the balance sheet of the business. Levered and unlevered beta's for industry sectors can be accessed via the Damodaran Online site http://people.stern.nyu.edu/adamodar/New_Home_Page/dataarchived.html#discrate A processed

$\beta_{\text{UNLEVERED, RETAIL(ONLINE)}} = 1.31$

$\beta_{\text{UNLEVERED, RETAIL(GENERAL)}} = 0.83$

$\beta_{\text{TOTAL}} = \dfrac{\beta_{\text{UNLEVERED}}}{\rho_{\text{INDUSTRY, INDEX}}}$, where $\rho_{\text{INDUSTRY, INDEX}} = 0.5 = \text{average correlation by industry}$

$$\beta_{\text{TOTAL,RETAIL(ONLINE)}} = \frac{\beta_{\text{UNLEVERED, RETAIL(ONLINE)}}}{\rho_{\text{INDUSTRY, INDEX}}} = \frac{1.31}{0.5} = 2.62$$

$$\beta_{\text{TOTAL,RETAIL(GENERAL)}} = \frac{\beta_{\text{UNLEVERED, RETAIL(GENERAL)}}}{\rho_{\text{INDUSTRY, INDEX}}} = \frac{0.83}{0.5} = 1.66$$

Cost of capital for each industry :

$R_{\text{E, RETAIL(ONLINE)}} = 2.17\% + 2.62 \times 5.76\% = 17.26\%$

$R_{\text{E, RETAIL(GENERAL)}} = 2.17\% + 1.66 \times 5.76\% = 11.73\%$

$$\text{ROE} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

Sales $= 1{,}000 \times 25 = 25{,}000$ for each segment, but storefront also generates CAD 45,000 in DVD rentals. Below are income statements for two separate segments :

	Online sales segment	Storefront segment	Storefront segment in 10 years
Sales	25,000	70,000	25,000
Cost of goods sold	5,000	5,000	5,000
Gross profit	20,000	, 65,000	20,000
Rent	0	15,600	15,600
Professional fees	0	5,000	5,000
Wages	0	6,000	6,000
Pre-tax profit	20,000	38,400	-1,600
Tax at 30%	6,000	11,520	0
Net Income	14,000	26,880	-1,600

I assume that in 10 years DVD rentals will fizzle out.

Now let's reconstruct assets side of the balance sheet for each of the segments.

Assets	Online sales segment	Storefront segment	Storefront segment in 10 years
Inventory	10,000	80,000	80,000
Cash	0	15,600	15,600
Total	10,000	95,600	95,600
Liabilities and stockholdes equity			
Leases due	0	15,600	15,600
Equity	10,000	80,000	80,000
Total	10,000	95,600	95,600

Leases due will show up on the liabilities side of the balance sheet. On the asset side, they have to be offset by cash account with balance of 15,600 that will be used to pay rent. Note that leases due represent off-balance sheet debt financing - you can not get yourself out of this contract. Professional fees and wages are discretionary - you can lay off employees and put on hold professional certification payments any time.

$$ROE_{RETAIL(ONLINE)} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}} =$$

$$= \frac{14{,}000}{25{,}000} \times \frac{25{,}000}{10{,}000} \times \frac{10{,}000}{10{,}000} = 140\%$$

$$ROE_{RETAIL(GENERAL)} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}} =$$

$$= \frac{26{,}880}{70{,}000} \times \frac{70{,}000}{95{,}600} \times \frac{95{,}600}{80{,}000} = 33.60\%$$

$$ROE_{RETAIL(GENERAL)\,IN\,10\,YEARS} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}} =$$

$$= \frac{-1{,}120}{25{,}000} \times \frac{25{,}000}{95{,}600} \times \frac{95{,}600}{80{,}000} = -1.40\%$$

Industry Canada - ic.gc.ca - FAQ says that maximum fixed rate on a small business loan equals the lenders' single family residential mortgage rate plus 3%. Currently, 5-7 year mortgages are offered at approximately 4%, so the rate on the loan is set at 7%.

Cost of capital for storefront option :

$$WACC = \frac{80{,}000}{95{,}600} \times 0.113 + \frac{15{,}600}{95{,}600} \times 0.07 \times (1 - 0.3) = 10.62\%$$

Discount rate for online business equals cost of equity of 17.26% estimated earier.

ASSUMPTIONS:

Storefront segment	0	1	2	3	4	5	6	7	8	9	10
DVD rentals		45,000	40,000	35,000	30,000	25,000	20,000	15,000	10,000	5,000	0
DVD sales		25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Total sales		70,000	65,000	60,000	55,000	50,000	45,000	40,000	35,000	30,000	25,000
Costs		31600	31600	31600	31600	31600	31600	31600	31600	31600	31600
Pre-tax profit		38,400	33,400	28,400	23,400	18,400	13,400	8,400	3,400	-1,600	-6,600
Tax at 30%		11520	10020	8520	7020	5520	4020	2520	1020	-480	-1980
Net Income		26,880	23,380	19,880	16,380	12,880	9,380	5,880	2,380	-1,120	-4,620
Cash flow from inventory sales										40000	40000
Operating cash flow		26,880	23,380	19,880	16,380	12,880	9,380	5,880	2,380	38,880	35,380
Discount factor		0.90	0.82	0.74	0.67	0.60	0.55	0.49	0.45	0.40	0.36
PV		24,299	19,106	14,686	10,939	7,776	5,119	2,901	1,061	15,676	12,895
Enterprise value	114,459										

Online segment	0	1	2	3	4	5	6	7	8	9	10
DVD sales		25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Costs		5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Pre-tax profit		20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Tax at 30%		6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Net Income		14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000
Cash flow from invento	37500	37500									5000
Operating cash flow	37500	51,500	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	19,000
Discount factor	1	0.85	0.73	0.62	0.53	0.45	0.38	0.33	0.28	0.24	0.20
PV	37500	43,919	10,182	8,683	7,405	6,315	5,386	4,593	3,917	3,340	3,866
Enterprise value	135,106										

The analysis noted above is supported by the following assumptions:

- DVD rental sales decline by 5,000 a year
- Each business has a 10-year life span
- Note that valuing business as perpetuities will not change valuation conclusions – after year 10, we will be valuing the same perpetuities at same discount rates.
- In storefront option, inventory is sold off when profits turn negative. In online option, inventory is sold off right away. Inventory sales take two years

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The *Solutions* video clip offers the interviewees' solution to the issue along with a rationale. Highlighted below, this can be compared to the student response and explanation.

- I chose to close the store but continue the business selling my inventory online through Amazon. By running the business online from home, my costs are minimal and I can foresee a healthy income for a number of years with not a lot of effort. Much of my collection is of a niche variety that is not always easy for customers' access by other means. I did not choose to continue to operate the business with a retail sales and rental operation because I could see the future coming. I am sure that could continue to have loyal customers for a number of years but slowly but surely my rental volumes will decrease without a corresponding decrease in costs. The inevitable result is decreasing margins. I also did not choose to simply close the story, sell off the inventory immediately and change my career because selling the entire inventory for a desired price is easier said than done. Yes I could have had a fire sale but I would not have been able to get the price that I wanted. The inventory is valuable and with not too much effort I can continue to make money from it for quite a number of years In order to resolve this issue, for each segment, I need to figure out my Return on Equity and then compare it to my cost of capital.

SUGGESTED COURSES

We suggest that this case would be suitable for a number of courses. These courses include:

- Finance
- Entrepreneurship
- Management

ADDITIONAL RESEARCH

The case offers students opportunities to undertake interesting additional research.

Students may want to delve deeper into how managers make decisions. Classic approaches to decision making include works by Cyert and March (1963) and Tversky and Kahnemann (1974).

Students interested in learning more about the industry in general might make use of numerous online information sources some of which are noted below.

High Beam Business, http://business.highbeam.com/industry-reports, Industry Overviews
Plunkett Research, http://www.plunkettresearch.com/, Industry Overview
Value Line, http://www.valueline.com/Stocks/Industries.aspx, Industry Overviews

Other sources of use include:

- Canadian Industry Statistics, https://www.ic.gc.ca/eic/site/cis-sic.nsf/eng/home Helps students find statistics about the industry.
- Chron.com, http://smallbusiness.chron.com/movie-rental-industry-life-cycles-63860.html The site talks about the rise and fall of the movie rental industry from the 1990s to present day.
- Google Finance, https://www.google.com/finance, Source allows students to look up publicly traded companies in the industry to retrieve up-to-date industry betas.
- Investopedia - Return on Equity, http://www.investopedia.com/terms/r/returnonequity.asp, Source to help student learn about ROE better as well as how to calculate ROE, as it is a key measure in this case.
- Statista.com, http://www.statista.com/topics/1860/home-video/ Statistics and facts about the Home Video Market

REFERENCES

A number of articles, referenced below, offer insight that might help instructors effectively explore this case with students.

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