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SCOR-*e*STORE.COM

Scor-*e*Store.com was not yet a company—it was still simply the ideas and experiments of two budding entrepreneurs. Mark Burgess, a graduate student in computer science, and Chris Madsen, a professional musician, hoped it would become a company. They had both invested a lot of time and creativity to get where they were now.

Introduction

viewer is a device for looking at slides or similar photographic images.

convert (information or data) into a cipher or code, especially to prevent unauthorized access.

Burgess had created a prototype sheet-music viewer that could display sheet music on a PC screen, play it through the PC's speakers, and print it on the PC's printer, all via the web. For proprietary music, it would print the music only when purchased over the web, and all transmissions would be encrypted. This viewer, unlike other viewers currently available, would, when completed, read files created by the popular notation software used by musicians to write and edit music. This capability would give the viewer a competitive edge by accepting music uploaded to the viewer on the web. Composers could use the viewer to show their music to others, give them a chance to play the music (or a portion of it), and deliver printed sheet music on the web, without ever giving the user an electronic copy that could be copied to others. By using additional existing software that transcribed pieces played on an instrument into an electronic musical-notation file, a composer could even create the music by playing it on an electronic piano keyboard or other instrument. At this point, however, the viewer was not fully functional, and testing would be needed to confirm that it would do all of these things in practice.

Madsen had used the pilot of the viewer to convert a dozen selections of music into the viewer's format, adding a lot of touch-up work by hand. When perfected, the viewer would do all the conversion automatically, including all the music's diacritical marks. Madsen had created a prototype web page where invited visitors could browse, play, and print sample pieces of sheet music. From the comments of visitors to the site, there was ample reason to think that a dressed-up website, endowed with 1,000 or so selections and listed in the common search engines, could be successful.

alpha(inner)-beta testing?

The next steps, if Scor-*e*Store.com was to become a company, were to (1) bring the viewer to full functionality and finish alpha and beta testing and (2) create a first-rate website with a collection of at least 1,000 compositions, complete with shopping cart and payment

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capabilities. About $90,000 would be needed to pay the two principals subsistence wages and to lease computer equipment and use home offices (for about four months) and then to operate the website for a couple of months. By the end of six months, they would know whether the business was viable.

Burgess and Madsen had approached a variety of venture capitalists, friends, and friends of friends for funding, as they themselves were penniless. For various reasons, they had not managed to find a mutually acceptable deal with an investor, and they were down to their last prospect. Lance Bernard was considering a proposal whereby he would put up the entire $90,000 and take one-third ownership of Scor-*e*Store.com.

Bernard had said to Burgess and Madsen that "someone will make a lot of money with an online sheet-music business. It's the perfect way to deliver music—no stores, no sales clerks, no inventory; you don't even need to buy paper or do any printing and binding." In the privacy of his office, Bernard made some quick calculations, however, that led him to frown on the investment. Bernard believed that only about four sheet-music websites would survive to be worth anything, and that it would be apparent a couple of months after the website was officially opened (six months in the future) whether Scor-*e*Store.com would be among them. If it were not in the top group by then, in Bernard's mind, the business would not be worth pursuing further and it should just die. If the website were among the top four at that time, he would sell his share for what he thought would be about $500,000 and move on to something new.[1] Assessing a 15% chance[2] that the website business would be viable, he multiplied 15% by $500,000, obtaining $75,000, discounted it for six months at his usual rate of 20%, and concluded that his share of the business should be valued at no more than $68,465, which is $75,000 ÷ $1.2^{.5}$. This amount was less than the $90,000 investment, so Bernard planned to pass on the opportunity. He threw the file in his bag and headed for a casual dinner with some of his venture-capital buddies.

Decision tree analysis

At dinner that evening, Bernard mentioned the online music opportunity and lamented, "If an idea this good doesn't cut it, why do people invest in Internet start-ups?" Questions about the underlying business model prompted Bernard to describe how the business would work. He told them that two things were required: a competitively functional viewer and a winning website with attractive content. After four months he would know about the viewer, and in months 5 and 6 he could test the website. If this viewer were not functional after four months, his test of the website could still be performed by licensing an existing, more limited viewer and hand-editing the pieces for the music collection in the test. Then the others entered the conversation:

Allen: Suppose the viewer is competitively functional and yet, after six months, the website is not a winner. Could you abandon the web business and sell the technology, maybe as software for composers to publish their work online?

[1] His current appraisal was that, based on projected earnings before interest and taxes, the entire business would be worth about $1.5 million at that time.

[2] This was a composite of a 50% chance that the website and its content would be a winner and a 30% chance that the viewer could be made competitively functional.

1)--website doesn't work, how to deal with viewer?

Bernard: Well, I believe that I could, and this would create some additional value to reward the development effort. In fact, the principals told me that, for an additional $25,000 of my money, they could turn a working viewer into a shrink-wrapped software product. But they, and I, wouldn't want to run a software business. They told me that they could sell the software rights for something like $450,000, and I would then get a third of that.

Soares: If you could use the technology separately, what about going ahead with the website separately? Suppose the viewer is not functional after four months, but the website proves to be a winner with a little extra effort by the end of month 6—what could you do with the website and the music content?

2) view doesn't work, how to deal with website?

Bernard: First of all, if the viewer didn't work, I'm sure we could arrange temporary rights with the alternate inferior viewer to test the website. If the website is successful, we could, after six months, build a website business by switching to a license of the alternate viewer. The value of the web business would be lower since the licensed viewer would not read files from existing notation software. I think we would sell the business to the owner of the other viewer in that case. We could probably get $300,000 for the sale, and remember, I only get a third of that.

viewer cannot work >> only work on website >>> sell website(10w)

Estes: Do you have any ideas on how to expand on the basic business if both the technology and website are successful after six months?

Bernard: One thing that came up in our conversations was to build upon our viewer's ability to directly read the files created by working composers. We thought about adding a capability for composers to upload their compositions to the website and earn either free copies of other works or royalties. This capability could be added after six months of operating a viable business, or 12 months from now. The online upload capability would take an additional $450,000 at the time the decision to expand was taken. I would put up my third of this money, and the other owners would find financing for their shares of it as well. The upload expansion would about double the value of the business (by the end of month 12 of operation, 18 months from now) from its base level without the expanded capability. I think the decision to finance this expansion would be taken only if the venture showed a good EBITDA.[3] I know if the EBITDA were as much as $18,000 per month we would expand, maybe for less. I would make sure in our start-up agreements that I had the right to make the decision about whether to expand in this particular way.

3) viewer&website work (after six months)>>> expanding business>> new features(EBITDA > 18000 per month) (After 12months) >>> expense:150000(45000/3) >>> if work, double the value(1.5 million*2=3 million)

Bouchek: I've now heard three grand ideas to add value to your venture. Let me add one more before dessert comes. This is based on something I've been wondering since you started talking about this business. Who has control in this business, and to what extent do you think these guys can make the right calls on running the company? Can you find a way to get more ownership and, perhaps, control if it is a viable business?

who control?

Bernard: One thing that worries me is that, if Chris and Mark get a working viewer, and quality website content together, they may not have enough business skill to really develop

[3] Earnings before interest, taxes, depreciation, and amortization.

1/3 share

and run the business. The thing is, they realize this also, unlike many founders. I believe they will agree to let me buy out some of their shares if the business works well—at least enough to give me control of the business and pick the management. Let's assume they would accept a clause in our start-up documents that would allow me to pay, say, $250,000, to buy 17% more of the company (giving me a controlling 50⅓% share) 18 months from now. They'd be happy to get some cash for their success and, at the same time, retain interest in the business.

4) additional investment:
after 18 months,
pay 250000, 17% share

Total share: 50.33 %

Bouchek: That clause could give you a bargain price on what could, at that time, be very valuable shares, even without considering the extra worth of having a controlling interest. You're lucky that they would give you that. I'll tell you what: I'll pay for dinner if you let me have the deal.

Bernard: Well, I'm not going to give the deal away and I want to think more about the value of the ideas the four of you have given me. Let me say thanks to you all by taking care of the check.

Final decision >> invest

Bernard picked up the paper napkin showing the timeline he had drawn while they spoke (**Exhibit 1**), said goodbye to his friends, and drove home, thinking that each idea he'd gotten from the dinner conversation could be worth hundreds of times the cost of dinner. Are there other opportunities he ought to consider as well? First, he would evaluate the current ideas. Tomorrow he would ask his newly minted MBA hire to develop a model to value a viable base business, starting after the six-month development period, assuming that both the viewer and website prove out (see **Exhibit 2** for the spreadsheet model[4] that was produced). The two of them could then see how much incremental gain arose from each of the four ideas, over and above the value of the original opportunity he had been ready to reject. The spreadsheet would be useful for those opportunities that arose after the business became viable. His usual approach was to value companies using a multiple of EBITDA. The analysis he envisioned would only go up to 18 months, as he would definitely sell his interest at that point.

how to calucate the multiple EBITDA?

He felt confident that he could maintain decision-making control in return for putting up the money needed for each opportunity. The equal share ownership would not change if he actually carried out any of the ideas, except for Bouchek's buyout idea. He wondered whether $18,000 per month EBITDA was the right cutoff point for going ahead with the expansion, as well as how he would decide whether to purchase additional shares and control of the company. Control of a viable company was worth around $100,000 in and of itself, he thought. The valuation model would allow him to assess the value of each idea so he could revisit the decision about the basic investment opportunity.

1)After 6 months, Cut off points>>
18,000?

2) additional shares and control of conmpany?
100,000>>> enough to invest(buy 17% share)
compared with 250,000.

[4] The initial month of the spreadsheet ended seven months from now, and the final month ended 18 months from now. The spreadsheet used "page views" (the number of times visitors to the website viewed the company's home page), "conversion rate" (the percentage of page viewers who bought music), "margin per purchase" (the margin made when a purchase was made), net of all credit-card charges, and other variable costs. Initial page views, conversion rate, and margin were uncertain, and page views followed a random growth pattern over time. The company was valued as a multiple of EBITDA.

EBITDA stands for Earnings Before Interest, Taxes, Depreciation, and Amortization and is a metric used to evaluate a company's operating performance. It can be seen as a proxy for cash flow. In finance, the term is used to describe the amount of cash (currency) that is generated or consumed in a given time period.

Exhibit 1

SCOR-*e*STORE.COM

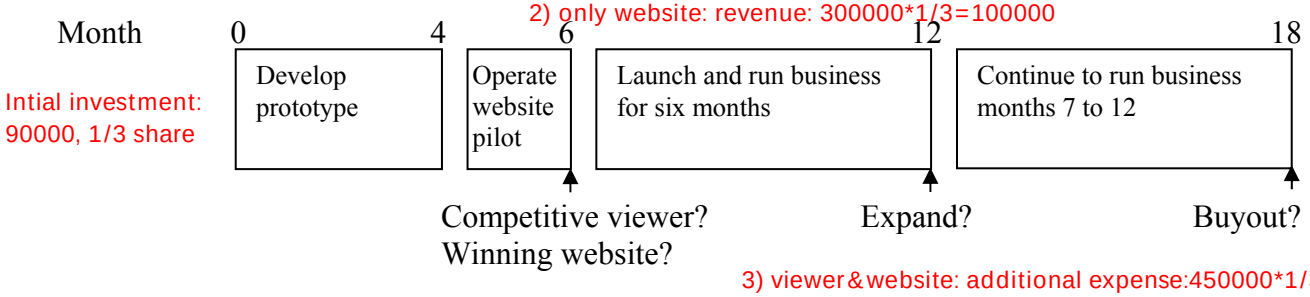
four ideas

SCOR-*e*STORE Timeline

1) only viewer: additional expense 25000, >>> 450000*1/3=150000(revenue)

2) only website: revenue: 300000*1/3=100000

Addition investment: 250000 buy 17% share>> now, 50.33share



3) viewer&website: additional expense:450000*1/3= 150000(if EBIDA >18000 per month)

Questions:

1)After 6 months, Cut off points>>18,000?

2) additional shares and control of conmpany?100,000>>> enough to invest(buy 17% share) compared with 250,000.

1. His current appraisal was that, based on projected earnings before interest and taxes, the entire business would be worth about $1.5 million at that time.(1.5 million*1/3=50w)
2. This was a composite of a 50% chance that the website and its content would be a winner and a 30% chance that the viewer could be made competitively functional.

Exhibit 2

SCOR-*e*STORE.COM

Spreadsheet Model of a Viable Website Business with Formulas

1000 trails

Scor-*e*Store Dot-Com Business

Page-views growth	60% annual
Page-views sigma what?	0.55 annual volatility
Yearly EBITDA multiple	15.1

All numbers in thousands

	Initial–Mo. 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18
Page views	110.00	115.50	121.28	127.34	133.71	140.39	147.41	154.78	162.52	170.65	179.18	188.14
Conversion rate	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
Margin per purchase	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88	$ 0.88
Monthly operating cost	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27
EBITDA	$ 8.28	$ 8.96	$ 9.67	$ 10.42	$ 11.20	$ 12.03	$ 12.89	$ 13.80	$ 14.75	$ 15.75	$ 16.80	$ 17.91
Valuation	$ 1,501	$ 1,623	$ 1,752	$ 1,888	$ 2,030	$ 2,179	$ 2,336	$ 2,500	$ 2,673	$ 2,855	$ 3,045	$ 3,245

Questions:
1.simulation? --- formulas refer?
2. decision tree (Excel &R)?
3. What would the addition of more uncertainty do to the values of the four alternatives?
(explain? use another uncertain variable into simulation models?
4. EBIDA---cut off points?
5. Question2 only for interpretation? do we need to use model to verify it?

Exhibit 2 (continued)

Crystal Ball Formulas

	A	B	C
1	**Scor-eStore Dot Com Business**		
2	Page Views Growth	0.6	annual
3	Page views sigma	0.55	annual volatility ##uncertain variable: marketing cost?
4	Yearly EBITDA multiple	15.1	
5		Initial-Mo. 7	Month 8
6	Page Views	=CB.Triangular(90,110,130)	=B6+B6*(Page_Views_Growth*(1/12)+Page_views_sigma*SQRT(1/12)*CB.Normal(0,1))
7	Conversion Rate	=CB.Triangular(0.08,0.14,0.2)	=$B$7
8	Margin per purchase	0.88	=B8+CB.Normal(0,0.08)
9	Monthly operating cost	=CB.Triangular(4.54,5.27,6)	=B9
10	EBITDA	=Page_Views*Conversion_Rate*Margin_per_purchase-Monthly_operating_cost	=Page_Views*Conversion_Rate*Margin_per_purchase-Monthly_operating_cost
11	Valuation	=MAX(0,Yearly_EBITDA_multiple*12*EBITDA)	=MAX(0,Yearly_EBITDA_multiple*12*EBITDA)

@Risk Formulas

what is risks formulas?

	A	B	C
1		Scor-e Store Dot Com Business	
2	Page Views Growth	0.6	annual
3	Page views sigma	0.55	annual volatility
4	Yearly EBITDA multiple	15.1	
5		Initial	Month 2
6	Page Views	=RiskTriang(90,110,130)	=B6+B6*(Page_Views_Growth*(1/12)+Page_views_sigma*SQRT(1/12)*RiskNormal(0,1))
7	Conversion Rate	=RiskTriang(0.08,0.14,0.2)	=$B$7
8	Margin per purchase	0.88	=B8+RiskNormal(0,0.08)
9	Monthly operating cost	=RiskTriang(4.54,5.27,6)	=B9
10	EBITDA	=Page_Views*Conversion_Rate*Margin_per_purchase-Monthly_operating_cost	=Page_Views*Conversion_Rate*Margin_per_purchase-Monthly_operating_cost
11	Valuation	=Yearly_EBITDA_multiple*12*EBITDA	=Yearly_EBITDA_multiple*12*EBITDA

The EBITDA/EV multiple is a financial valuation ratio that measures a company's return on investment (ROI). The EBITDA/EV ratio may be preferred over other measures of return because it is normalized for differences between companies.