MEIGUODAIXIECOM

CAPSTONE CASE 1: ECO-PRODUCTS, INC.

A. Describe Eco-Products' early history (1990 through 2003). Would you view the firm during that period as being a life-style business, an entrepreneurial venture, or? Why?

Steve Savage and his father founded the company in 1990 with the intent to provide ecofriendly paper and janitorial supplies. They chose to locate the business in Boulder, Colorado, a community known for its support of environmental initiatives and natural products. However, consumers were slow to adopt eco-friendly products. Margins were low and salaries were small. Friends and family supplied funds for business operations. This early history was suggestive of a life-style business.

B. Discuss Eco-Products' revenue growth-based "business model" that evolved over the 2004 through early 2008 period in terms of (a) production versus distribution, (b) product line development, (c) branding, etc.

The company remained a local marketer of green janitorial paper and building supplies until 2004 when the company was set on a new course with both business supply and building supply divisions. The management team was expanded and sales in the business supply division grew rapidly as a result of a focus on brand and Internet strategies.

- a) In 2004-05 Eco-Products remained primarily a distributor of eco-friendly products such as biodegradable disposable drinking cups, etc. that were purchased from a variety of manufacturers. As the business focus shifted from retail sales to wholesale distribution, pressure increased to produce their own brand of eco-friendly products. Product suppliers were selected in China and Taiwan.
- b) Steve Savage emphasized the development of a signature Eco-Products line from a Polylactide (PLA) resin from renewable resources such as corn and sugarcane. This allowed the firm to offer a full, uniquely designed line of environmentally friendly products. However, lead times were long since orders from the Asian original equipment manufacturers took from 7 to 12 weeks to be filed.
- c) As wholesale distribution grew, existing product manufacturers restricted Eco-Products' ability to sell many products in the wholesale marketplace. After identifying Asian manufacturers, the "Eco-Products" branded line of compostable cups and food containers hit the market in March, 2007.
- C. What is the size of the domestic and global markets for foodservice disposable packaging? Who are the major competitors producing/selling environmentally-friendly food service products. What intellectual property or competitive advantages does Eco-Products, Inc. possess?

The global food service disposable industry produces an estimated \$30 billion in sales annually. Biodegradable products represented the fastest growing segment of the industry and had sales estimated to exceed \$700 million in 2008. Eco-Products previously carried the Fabri-Kal, International Paper, and Georgia Pacific paper product lines. These firms became direct competitors when Econ-Products decided to produce its own eco-friendly products line. It is difficult to produce intellectual property or competitive advantages in an industry where product production technology is reasonable simple and where there are several major competitors. Eco-Products had an available Asian production source for producing products from a PLA resin, as well as their own "brand" of compostable products.

D. Exhibits 2 and 3 present Eco-Products' financial statement information for 2005, 2006, and 2007. Prepare a ratio analysis of the firm's financial performance over the 2005-07 period.

Note: the financial statements for 2005 and 2006 were unaudited. For 2007, the income statement and statement of cash flow were "reviewed" while the balance sheet was "audited." As a result, some discrepancies exist when trying to reconcile changes in some of the numbers across financial statements. Students should understand that it is not uncommon for small, closely-held firms not to have their financial statements professionally "audited" by a Certified Public Accountant (CPA).

Note: we are using end-of-year balance sheet items (rather than averages) in order to have three comparison years and to recognize that the firm's business model (from a retailer of products manufactured by others to a manufacturer/wholesaler of eco-friendly products.

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2005 COGS/Revenues = 2,584,326/3,649,799 = .708 = 70.8%

2006 COGS/Revenues = 3,684,492/5,751,787 = .641 = 64.1%

2007 COGS/Revenues = 7,726,455/10,867,104 = .711 = 71.1%

2005 Gross Profit Margin = 1,065,473/3,649,799 = .292 = 29.2%

2006 Gross Profit Margin = 2,067,295/5,751,787 = .359 = 35.9% %

2007 Gross Profit Margin = 3,140,649/10,867,104 = .289 = 28.9%

2005 Operating Profit Margin = 239,519/3,649,799 = .066 = 6.6%

2006 Operating Profit Margin = 98,333/5,751,787 = .017 = 1.7%

2007 Operating Profit Margin = 128,443/10,867,104 = .012 = 1.2%

2005 Net Profit Margin = 237,336/3,649,799 = .065 = 6.5%

2006 Net Profit Margin = 41,946/5,751,787 = .007 = 0.7%

2007 Net Profit Margin = -36,199/10,867,104 = -.003 = -0.3%

2005 Sales to Total Assets = 3,649,799/795,465 = 4.588 times

2006 Sales to Total Assets = 5,751,787/2,103,478 = 2.734 times
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2007 Sales to Total Assets = 10,867,104/5,647,015 = 1.924 times
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2005 Return on Assets = 237,336/795,465 = .298 = 29.8%

2006 Return on Assets = 41,946/2,103,478 = .020 = 2.0%

2007 Return on Assets = -36,199/5,647,015 = -.006 = -0.6%

2005 Total Debt to Total Assets = 435,696/795,465 = .548 = 54.8%

2006 Total Debt to Total Assets = 1,781,218/2,103,478 = .847 = 84.7%

2007 Total Debt to Total Assets = 4,111,887/5,647,015 = .728 = 72.8%
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2005 Return on Equity = 237,336/359,769 = .660 = 66.0%
2006 Return on Equity = 41,946/322,260 = .130 = 13.0%
2007 Return on Equity = -36,199/1,535,128 = -.024 = -2.4%
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As Eco-products moved from being a distributor/retailer of other manufacturers' products to producing/wholesaling its own products, its profit margins declined from 2005 to 2007. In fact, the firm had a net loss in 2007 due in large part to the nearly \$200,000 (actually \$186,726) in interest expense associated with the obtaining of a line of credit which was \$2,843,242 at the end of December, 2007. As sales "ramp up" in the future, it is important to "spread" the "fixed" and "semi-fixed" operating expenses in order to improve the operating profit margin and the firm's value.

An accompanying Excel spreadsheet provides the following ratio calculations for 2007 and 2008 (data were not available until 2009).

Selected Ratios:	2007	2008
GOGS/Revenues	71.1%	75.7%
Gross Profit Margin	28.9%	24.3%
Operating Profit Margin	1.2%	3.2%
Net Profit Margin	-0.3%	1.6%
Sales or Revenues/Total Assets	1.924	1.819
Return on Assets	-0.6%	2.8%
Total Debt to Total Assets	72.8%	71.2%
Return on Equity	-2.4%	9.9%

E. Exhibit 4 presents Eco-Products' Statement of Cash Flows for 2007. Was the firm building or burning cash in its operating activities? When also considering cash flows from investing activities, was Eco Products in a net cash build or burn position in 2007?

In Chapters 4 and 6 we discussed the preparation of the Statement of Cash Flows. We use the indirect method which begins with an accounting period's (usually one year) net income (or loss) and adds back non-cash deductions (depreciation and amortization). We then adjust these income statement amounts by changes (between last year and this year) in non-interest bearing working capital accounts shown on the balance sheet to get net

cash flow from operations. We also calculate cash flows from investing activities and cash flows from financing activities. In actual practice, accountants use the direct method for preparing the statement of cash flows which aggregates all individual transactions made throughout the year that impact accounting cash flows. Thus, because of the lack of detail, the indirect method for preparing the statement of cash flows is sometimes difficult to exactly reconcile with the more detailed results provided from the direct method.

Also, as noted in the prior question, only the 2007 balance sheet was audited. Other financial statements were only "reviewed by a CPA firm. This makes it more difficult to separately prepare (using the indirect method) a statement of cash flows for Eco-Products for 2007. While many of the changes in balance sheet accounts between 2006 and 2007 match with the amounts presented in the consolidated statements of cash flow in Exhibit 4, others do not. Thus, for this question we suggest that students concentrate on Exhibit 4 to determine the extent to which Eco-Products was building or burning cash in 2007.

In Chapter 4 we presented a short method for determining whether a firm had been building or burning cash. The short method sums the net cash used in operating activities and the net cash used in investing activities.

2007 Cash Build/Burn = net cash used in operating activities + net cash used in investing activities = -2.891.887 + -356.745 = -3.248.632

Thus Eco-Products had a cash burn of over \$3 million in 2007.

A more detailed method for estimating cash build or burn was provided in Chapter 5.

Cash Build = Net Sales – Increase in Receivables = 10,867,104 – 965,683 = 9,901,421

Cash Burn = Income Statement-Based Operating, Interest, and Tax Expenses

- + Increase in Inventories
- (Changes in Payables and Accrued Liabilities)
- + Capital Expenditures

Note: there may be deferred income taxes as well as changes in other less common current asset and current liability accounts (as shown in Exhibit 4) that must be accounted for in determining net cash used in operating activities. These include prepaid expenses and other assets, income tax receivable, deposits, other current liabilities, deferred lease liability, and deferred revenue and are considered below.

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Cash Burn = 10,786,740 [i.e., 7,726,455 + 1,822,206 +1,102,437 + 187,918 (interest & other expenses) + -23,276 - 29,000 (deferred income tax)] + 1,553,188 + 664,003 (i.e., 589,743 + 64,260 + 10,000)
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- 84,156 (44,800 + 39,356)
- 126,467 (i.e., 3,966 + 16,913 + 105,588)

+ 356,745 = 13,150,053

Net Cash Burn = Cash Burn - Cash Build = 13,150,053 - 9,901,421 = 3,248,632

F. Describe the early rounds of financing that occurred from Eco-Products' inception in 1990 through 2006. Beginning in 2007, the need for external financing began increasing. Describe the sources, amounts, and types of financing obtained during 2007 and the early part of 2008.

Exhibit 5 in the case summarizes previous rounds of financing. Eco-Products was started with \$8,000 in seed money in 1990. Additional equity investments from the founders, family, friends, and employees for purchase of inventory and to support the building supply division occurred in 1995, 1999, and 2003.

As sales began increasing rapidly in 2007, there was a need to finance more working capital, particularly inventory. In 2007, \$220,000 was raised from 14 investors which included friends, family, and angels. An additional \$2.5 million was raised from 30 angel investors in late 2007 and during the spring of 2008 through a private placement memorandum. Excerpts from the memorandum are shown in Appendix A.

G. In mid-2007, Eco-Products' management prepared a five-year (2007-2011) projection of revenues and expenses (see Exhibit 1). What annual rates of growth were projected for net sales? Make a "back-of-the-envelope" estimate of the amounts of additional assets needed to support the sales forecasts. How might these assets be financed? Prepare a "rough" estimate of the possible size of external financing needed to support these sales projections.

First, let's review recent actual sales growth rates:

Year	Sales/Revenues	Percent Increase
2005	\$3,649,799	
2006	\$5,751,787	57.6%
2007	\$10,867,104	88.9%

Financial Projections (made in mid-2007) in Thousands of Dollars:

		Change	
<u>Year</u>	Sales/Revenues	in Sales	Percent Increase
2007	\$9,200		
2008	22,000	\$12,800	139.1%
2009	38,000	16,000	72.7
2010	55,000	17,000	44.7
2011	78,000	23,000	41.8

Actual revenues for 2006 were 5,751,787 or in Thousands of Dollars rounded to 5,752. The five-year compound rate of growth between 2006 actual revenues and projected 2011 revenues of 78,000 is:

PV = -5752FV = 78.000

N = 5

I% Yr = 68.44%

It is also worth noting that actual sales or revenues for 2007 of \$10,867,104 substantially exceeded the mid-2007 forecast of \$9.2 million.

Over the 2005-2007 period, Eco-Products changed from being primarily a retail distributor of eco-friendly paper and plastic products produced by other manufacturers to a wholesale distributor of its own "branded" eco-friendly products. If we assume that the sales to assets relationship that existed at the end of 2007 would hold going forward, we have:

2007 Sales to Total Assets = 10,867,104/5,647,015 = 1.924 times

2007 Total Assets/Sales = 5,647,015/10,867,104/= .5196 = 52.0%

Thus, it will take approximately a \$.52 investment in assets to support each \$1.00 increase in sales.

Using the actual 2007 revenues, we have the following estimates for the change in both sales and assets:

		Change		Assets	s/	Change
<u>Year</u>	Sales/Revenu	<u>es</u> <u>in Sale</u>	X	<u>Sales</u>	=	in Assets
2007 (actual)	\$10,867					
2008	22,000	\$11,133		.52		\$5,789
2009	38,000	16,000		.52		8,320
2010	55,000	17,000		.52		8,840
2011	78,000	23,000		.52		11,960
		Total = \$67,133		,	Total =	\$34,909

Based, on these estimates, Eco-Products will need to acquire nearly \$6 million in assets in 2008 and nearly \$35 million over the 2008-2011 period. Recently 2008 sales forecasts have been revised to 45 million which would more than double the amount of assets needed for 2008.

Additional assets can be financed in part through the generation of net profits or income and the retention of those profits in the business. Some spontaneous financing will also occur through an expected increase in accounts payable and accrued liabilities. Any remaining asset financing needs will need to be met through the raising of external debt and equity funds.

In Chapter 6, we introduced a basic additional funds needed (AFN) equation which can provide a quick "back-of-the-envelope" estimate of future external financing needs.

AFN = (Total Assets/Sales)(Change in Sales) – (Accounts Payable + Accrued Liabilities)/(Change in Sales) – (Next Year's Sales)(Net Income/Net Sales)(Retention Rate)

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2007 Total Assets/Sales = 5,647,015/10,867,104 = .5196 = .520 (rounded) 2007 (Accounts Payables & Accrued Expenses)/Sales = 568,131/10,867,104 = .052 2007 Net Income/Sales = -36,199/10,867,104 = -.003
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Note: Eco-Products must return to profitability in order to finance its sales growth and to add to firm value. Exhibit 1 projects an EBITDA/Sales margin of 8.5%. A net profit margin of 4.25% (8.5% x .50) might be achievable and is used here for illustrative purposes. A 100% retention rate also is assumed.

Two AFN estimates are prepared for 2008:

- 1) 2008 sales estimate (in \$ Thousands) made in mid-2007 = \$22,000; with a change of \$11,133 (\$22,000 \$10,867)
- 2) 2008 sales estimate (in \$ Thousands) made in early-2008 = \$45,000; with a change of \$34,133 (\$45,000 \$10,867)
- 1) 2008 AFN for Sales of 22,000 = .520(11,133) .052(11,133) 22,000(.0425)(1.00) = 5,789 579 935 = 4,275
- 2) 2008 AFN for Sales of \$45,000 = .520(34,133) .052(34,133) 45,000(.0425)(1.00) = 17,749 1,775 1,913 = 14,061

The 2008 AFN ranges from \$4.275 million for \$22 million in sales to \$14.061 million for \$45 million in sales or revenues.

The large AFN estimates are due in large part to working capital needs primarily in the form of higher accounts receivable and inventory. The amount of funds tied up in inventory is problematic due to supply chain lead times and supplier terms (see Figure 2). Furthermore, relatively little supplier financing is provided and the business does not generate large profit margins. As a result, Eco-Products will likely need to improve its supply chain model.

Note: An accompanying Excel spreadsheet provides basic financial statement projections for 2008 for three different revenue projections. The results follow.

Eco-Products, Inc.					
Financial Statements and Projections		Forecast Basis:	Mid-2007	Moderate	Early-2008
[Dollars]	Actual	Percent of	Forecast	Forecast	Forecast
Income Statements	2007	2007 Revenues (Sales)	2008	2008	2008
Net Revenues	10,867,104	Estimated Amounts	22,000,000	35,000,000	45,000,000
Cost of Goods Sold	<u>7,726,455</u>	0.711 x sales forecast	15,642,000	24,885,000	31,995,000
Gross Profit	3,140,649		6,358,000	10,115,000	13,005,000
Operating Expenses					
Bad Debt	141	0.000 x sales forecast	0	0	0
Depreciation and Amortization	87,563	0.008 x sales forecast	176,000	280,000	360,000
Employee Benefits	114,011	0.010 x sales forecast	220,000	350,000	450,000
General and Administrative	494,061	0.045 x sales forecast	990,000	1,575,000	2,025,000
Payroll Taxes	117,557	0.011 x sales forecast	242,000	385,000	495,000
Occupancy Expense	349,668	0.032 x sales forecast	704,000	1,120,000	1,440,000
Repairs and Maintenance	27,140	0.002 x sales forecast	44,000	70,000	90,000
Salaries and Wages	1,778,282	*0.123 x sales forecast	2,706,000	4,305,000	5,535,000
Selling and Marketing Expenses	43,783	*0.016 x sales forecast	352,000	560,000	720,000
Total Operating Expenses	3,012,206		5,434,000	8,645,000	11,115,000
Operating Profit	128,443		924,000	1,470,000	1,890,000
Other Income and (Expenses)					
Interest Expense	-186,726	*(0.009) x sales forecast	(198,000)	(315,000)	(405,000)
Other Income	<u>0</u>	0.000 x sales forecast	-	-	-
Other Expense	<u>-1,192</u>	(0.001) x sales forecast	(22,000)	(35,000)	(45,000)
Net Other Income & (Expenses)	-187,918		-220,000	-350,000	-450,000
Net Income (Loss) Before Taxes	<u>-59,475</u>		704,000	1,120,000	1,440,000
Provision for Income Taxes					
Estimated Taxes		*Assumes 35% Tax Rate	(246,400)	(392,000)	(504,000)
Current Tax Benefit	52,276				
Deferred Tax Expense	-29,000				
Total Provision of Income Taxes	23,276		-246,400	-392,000	-504,000
Net Income (Loss)	-36,199		457,600	728,000	936,000

Balance Sheets	Actual	Percent		Forecast	Forecast	Forecast
Assets	2007	of Sales		2008	2008	2008
Current Assets						
Cash	51,667	0.5%	0.005 x sales forecast	104,598	166,405	213,950
Accounts Receivable, Net	1,330,562	12.2%	0.122 x sales forecast	2,684,000	4,270,000	5,490,000
Prepaid Expenses & Other Cur. Assets	728,776	6.7%	0.067 x sales forecast	1,474,000	2,345,000	3,015,000
Income Tax Receivable	54,506	0.5%	0.005 x sales forecast	110,000	175,000	225,000
Inventory	2,415,916	22.2%	0.222 x sales forecast	4,884,000	7,770,000	9,990,000
Deferred Income Tax Asset	42,000	0.4%	Held Constant	42,000	42,000	42,000
Total Current Assets	4,623,427	42.5%		9,298,598	14,768,405	18,975,950
Property and Equipment						
Machinery and Equipment	641,773	5.9%	*0.039 x sales forecast	858,000	1,365,000	1,755,000
Building Improvements	479,481	4.4%	*0.029 x sales forecast	638,000	1,015,000	1,305,000
Vehicles	228,448	2.1%	*0.014 x sales forecast	308,000	490,000	630,000
Total Property and Equipment	1,349,702	12.4%		1,804,000	2,870,000	3,690,000
Less Accumulated Depreciation	-360,304	-3.3%	(0.022) x sales forecast	-484,000	-770,000	-990,000
Net Property and Equipment	989,398	9.1%		1,320,000	2,100,000	2,700,000
Intangible Assets						
Trademarks	20,800	0.2%	0.002 x sales forecast	44,000	70,000	90,000
Other Intangible Assets	5,440	0.1%	0.001 x sales forecast	22,000	35,000	45,000
Total Intangible Assets	26,240	0.2%	0.002 x sales forecast	44,000	70,000	90,000
Less Accumulated Amortization	-2,050	0.0%	0.000 x sales forecast	0	0	0
Net Intangible Assets	24,190	0.2%		44,000	70,000	90,000
Other Assets						
Deposits	10,000	0.1%	0.001 x sales forecast	22,000	35,000	45,000
Total Assets	5,647,015	52.0%		10,684,598	16,973,405	21,810,950

	Actual	Percent		Forecast	Forecast	Forecast
Liabilities and Equity	2007	of Sales		2008	2008	2008
Current Liabilities						
Accounts Payable & Accrued Expenses	568,131	5.2%	0.052 x sales forecast	1,144,000	1,820,000	2,340,000
Accrued Payroll & Payroll Taxes	6,712	0.1%	0.001 x sales forecast	22,000	35,000	45,000
Accrued Vacation	39,865	0.4%	0.004 x sales forecast	88,000	140,000	180,000
Lines of Credit	2,843,242	26.2%	*0.262 x sales forecast	5,764,000	9,170,000	11,790,000
Current Portion of Long-Term Debt	39,356	0.4%	0.004 x sales forecast	88,000	140,000	180,000
Current Portion of Capital Leases	37,919	0.3%	0.003 x sales forecast	66,000	105,000	135,000
Deferred Revenue	105,588	1.0%	Held Constant	105,588	105,588	105,588
Loan from Stockholder	93,394	0.9%	Held Constant	93,394	93,394	93,394
Other Current Liabilities	21,523	0.2%	0.002 x sales forecast	44,000	70,000	90,000
Total Current Liabilities	3,755,730	34.6%		7,414,982	11,678,982	14,958,982
Deferred Income Tax Liability	54,000	0.5%	0.005 x sales forecast	110,000	175,000	225,000
Deferred Lease Liability	36,383	0.3%	0.052 x sales forecast	66,000	105,000	135,000
Long-Term Capital Leases, Net of Current Por.	141,228	1.3%	Held Constant	141,228	141,228	141,228
Long-term Debt, Net of Current Portion	124,546	1.1%	Held Constant	124,546	124,546	124,546
Total Liabilities	4,111,887	37.8%		7,856,756	12,224,756	15,584,756
Stockholders' Equity						
Common Stock, \$.001 Par Value						
50,000,000 Shares Authorized						
16,935,000 Shares Issued & Outstanding	156,300	1.4%	Held Constant	156,300	156,300	156,300
Preferred Stock, \$.001 Par Value						
1,750,000 Shares Authorized						
1,366,666 Shares Issued & Outstanding	0		Held Constant	0	0	0
Additional Paid-In-Capital	1,269,908	11.7%	Held Constant	1,269,908	1,269,908	1,269,908
Retained Earnings	108,920	1.0%	[+2008 Net Income]	566,520	836,920	1,044,920
Total Stockholders' Equity	1,535,128	14.1%		1,992,728	2,263,128	2,471,128
*Additional Financing Needed	<u>0</u>			<u>835,114</u>	2,485,521	3,755,066
Total Liabilities & Stockholders' Equity	5,647,015	52.0%		10,684,598	16,973,405	21,810,950

Notes on Projected Financial Statements							
Income Statement:							
*Salaries and Wagesreduced by 25% from	the 16.4% 20	007 relationsh	ip to reflect expected e	conomies			
*Selling and Marketing Expensesincreased	l 4 times the	.4% 2007 rela	ationship to reflect the r	eed for high	er expendit	ures	
*Interest Expense was projected at one-hal-	the 2007 pe	rcent of sale	s rate due to a likely slov	wer growth r	ate for inter	est-bearing	debt
*Assumes 35% Tax Rate for 2008 projections	(Deferred T	axes were no	ot projected due to insuf	ficient data)			
Balance Sheet:							
*Property and Equipment was reduced to tw	vo-thirds of	2007 rate due	to production being ou	tsourced			
*Lines of Credit were increased with sales u	nder the ass	umption the	y would be available to	inance work	ing capital		
*Additional Financing Needed is the amoun	t of long-ter	m debt and e	quity funds needed to f	inance proje	cted sales gr	owth	

Note: Actual 2008 operating results are presented in the Epilogue (What Happened) at the end of this teaching note: $\frac{1}{2}$

2008 Actual Sales/Revenues: \$34,378,138 (well below the early 2008 estimate of \$45 million due to a slowing economy, greater competition, and supply chain issues) 2008 Net Income: \$538,344 (resulting in a 1.6% net profit margin)

2008 Year-end Inventory: \$12,222,801 (excess inventory was produced in anticipation of higher sales which did not materialize)