

Almaden Kitchen – Operating Expansion¹ Solution Set²

Narrative

Almaden Kitchen is a farm-to-table restaurant owned and operated by Juliana Mahlmann in the south end of the San Francisco Bay Area with revenues of \$1.2 million and gross margin of 55% for the most recent year. Given the recent expansion and expected continued growth of restaurant take-out and delivery, Mahlmann is considering offering a prepared foods selection her customers can “Grab ‘n Go”. The new menu selections are expected to be prepared daily for heating-up and consumption at home and come with detailed preparation instructions to assure her customers a food experience not unlike they would receive in the restaurant, but in the comfort of their own homes. The menu will be creative and maintain Almaden Kitchen’s commitment to using high quality, locally sourced products, of course, but will be distinct from her existing menu options to avoid unwanted erosion of current revenues.

As excited as Mahlmann is at the prospects of expanding her operation, she wants to be sure the required investment of time and energy is productive. As one of her better customers and an existing stakeholder, you’ve been asked to help Mahlmann consider the financial merits of the expansion, prepare a proforma profit and loss schedule, and both break-even and net present value analyses.

The local market appears to be able to support up to an additional 40 take-out, delivery orders each day with each order averaging two (2) meals at an average price of \$25 per meal and direct food costs of 42%. Mahlmann expects it will take up to a year before the new operation reaches full capacity and projects Q1 orders will average 10 per day, Q2 will average 20 per day, Q3 will average 30 per day and Q4 will average 40 per day. After Q4 she expects the market will support an annual increase of 5% (rounded to the nearest order) and price increases of 3%.

To accommodate the expansion in business the restaurant will require the repurposing of an existing storage room into additional prep space and the addition of a separate entrance with refrigerated display case and customer counter, a new walk-in refrigerator and refrigerated display case, repurposing the existing kitchen and storage room to meet additional food preparation needs, a new product ordering and delivery tracking system will need to be purchased and installed, approximately \$2,000 of additional inventory will be required to start production, and other operating expenses requiring payment in advance. Mahlmann believes she’ll need to hire an additional chef to support this effort and after the first 6 months of operations that chef will also need a food prep assistant.

To capitalize the new operation Mahlmann must choose between an SBA loan of \$200,000 at 11% or taking on an equity partner with an expected return of 30%. One of her requirements to move forward is for the operation to be financially viable within a period of four years and given a salvage value of the fixed assets and repurposed/remodeled facilities of 20% of initial their costs.

¹ This problem and solution set is intended to present an abbreviated discussion of the included finance concepts and is not intended to be a full or complete representation of them or the underlying foundations from which they are built.

² This problem set was developed by Richard Haskell, PhD (rhaskell@westminstercollege.edu), Associate Professor of Finance, Bill & Vieve Gore School of Business, Westminster College, Salt Lake City, Utah (2023).

In order to justify the additional responsibilities and pressure the “Grab ‘n Go” expansion may place on the existing operation, Mahmann’s been advised to require it contribute an additional \$2,000 per quarter plus 10% of its revenues to the restaurant. While this would be an operating expense, Mahlmann and her advisors want to see it accounting for in its own category on the firm’s income statement.

Operating Investments (start-up costs)

- Repurpose storage room and add separate customer entrance (\$115,000)
- Walk-In refrigerator and refrigerated display case (\$35,000 including installation)
- Delivery tracking system (\$5,000)
- Starting inventory (\$2,000)
- Insurance (\$3,500 paid quarterly in advance)
- Chef (one month of annual salary + tax & benefits; \$9,896)
- Marketing expense (\$1,500 one month, paid in advance)

Cost of Goods Sold

- Direct Food Costs (42%)
- Credit Card Processing Fees (2.5%)

Operating Expenses

- Digital and on-site marketing (\$1,500 per month, paid in advance)
- Utilities (\$400 increase per month)
- Supplies expense (8% of revenues)
- Insurance Costs (\$3,500 per quarter)

Personnel Costs

- Chef (\$95,000 per year salary)
- Assistant (\$65,000 per year)
- Tax & Benefits Overhead (25%)

Contribution

- \$2,000 per calendar quarter
- Plus 10% of revenues

Questions

1. Prepare and provide an Assumptions table based on the information provided and other known quantifiable information.

Assumptions						
	Price	Daily Orders	Meals per Order	Price per Meal		
					Repurpose facilities	115,000
	Q1	10	2	25	Walk-In refrigerator	35,000
	Q2	20	2	25	Delivery Tracking System	5,000
	Q3	30	2	25	Starting Inventory	2,000
	Q4	40	2	25	Equipment Life	7.00
					Marketing (quarterly)	4,500
Post 2023 Order growth				5%	Chef	95,000
Post 2023 Price changes				3%	Chef's Assistant	65,000
	1	42	2	25.75	Personnel Overhead	25%
	2	44	2	26.52	Utilities (quarterly)	1,200
	3	46	2	27.32	Supplies	8.00%
Income Tax		26%			Insurance Costs (avg quarterly)	3,500
Debt		200,000			Annual change in op expenses	3.00%
Interest Rate		11%			Contribution (quarterly, fixed)	2,000
Investor Required Return		30%			Contribution (variable)	10.00%
Required Quarterly Profit		5,000			Salvage Value (% of FA cost)	20.00%
					Cost of Good Sold	42%
					Credit Card Processing Fees (avg)	2.50%

2. Prepare and provide a Proforma Profit and Loss Schedule based on the information provided including EBITDA, Operating Cash Flow, and Generalized Cash Flow (*generalized cash flow is equated as Net Income less D&A; it takes into account the effect of non-operating expenses on a unit's cash flow*).

Proforma Profit & Loss Schedule								
	Q1	Q2	Q3	Q4	2023	2024	2025	2026
Revenue	45,625	91,250	136,875	182,500	456,250	789,495	851,903	917,344
Cost of of Goods Sold	(20,303)	(40,606)	(60,909)	(81,213)	(203,031)	(351,325)	(379,097)	(408,218)
Gross Income	25,322	50,644	75,966	101,288	253,219	438,170	472,806	509,126
OpEx w/o D&A	(42,538)	(46,188)	(70,150)	(73,800)	(232,675)	(307,064)	(319,373)	(332,145)
Contribution	(6,563)	(11,125)	(15,688)	(20,250)	(53,625)	(86,950)	(93,190)	(99,734)
D&A	(5,536)	(5,536)	(5,536)	(5,536)	(22,143)	(22,143)	(22,143)	(22,143)
EBIT	(29,314)	(12,204)	(15,408)	1,702	(55,224)	22,014	38,100	55,104
Interest Expense	(5,500)	(5,500)	(5,500)	(5,500)	(22,000)	(22,000)	(22,000)	(22,000)
Taxable Income	(34,814)	(17,704)	(20,908)	(3,798)	(77,224)	14	16,100	33,104
Tax	-	-	-	-	-	(4)	(4,186)	(8,607)
Net Income	(34,814)	(17,704)	(20,908)	(3,798)	(77,224)	10	11,914	24,497
EBITDA	(23,778)	(6,669)	(9,872)	7,238	(33,081)	44,157	60,242	77,246
Operating Cash Flow	(23,778)	(6,669)	(9,872)	7,238	(33,081)	44,153	56,057	68,639
Generalized Cash Flow	(29,278)	(12,169)	(15,372)	1,738	(55,081)	22,153	34,057	46,639
Cash Balance	19,222	12,553	2,681	9,919	(23,163)	20,991	77,047	145,687

3. Prepare and provide a Break Even Analysis on the new operation including a true break even and a break even with a required profit of \$5,000 per quarter. Be sure to include the firm's interest expense as part of TFC

Output Quantity (forecast)	1,825	3,650	5,475	7,300	18,250	30,660	32,120	33,580
Break-even ($\pi = 0$)	3,935	4,527	6,583	7,175	22,220	29,110	29,522	29,936
Break-even ($\pi = 20000$ yr)	4,295	4,887	6,943	7,535	23,661	30,145	30,527	30,912

4. Prepare a multi-columnar valuation analysis including PV, NPV, IRR and MIRR based on two investment cost scenarios: 1) using debt as the cost of investment, and 2) using start-up costs as the cost of investment. Present each scenario using 1) the cost of debt as the discount rate, and 2) the investor's required return as the discount rate.

Valuation						NPV and IRR						
						With Debt as Cost of Investment			With Start-Up cost as Cost of Investment			
Based on Cost of Borrowing (interest rate)	Time	Year	Cash Flow	PV _{FCF}	Σ PV _{FCF}	FCF	PV _{FCF}	Σ PV _{FCF}	FCF	PV _{FCF}	Σ PV _{FCF}	
	0					(200,000)	(200,000)	(200,000)	(171,521)	(171,521)	(171,521)	
	1	2023	(33,081)	(29,803)	(29,803)	(55,081)	(49,623)	(249,623)	(33,081)	(29,803)	(201,324)	
	2	2024	44,153	35,836	6,033	22,153	17,980	(231,643)	44,153	35,836	(165,488)	
	3	2025	56,057	40,988	47,021	34,057	24,902	(206,741)	56,057	40,988	(124,500)	
	4	2026	68,639	45,215	92,236	77,639	51,144	(155,597)	99,639	65,636	(58,865)	
					PV _{FCF}	92,236	NPV	Σ PV _{FCF}	(155,597)	NPV	Σ PV _{FCF}	(58,865)
				Salvage Value	31,000	NPV Function	(155,597)	NPV Function	(58,865)			
				PV _{CV}	20,421	NPV PV _{BENEFITS} - PV _{COSTS}	(155,597)	NPV PV _{BENEFITS} - PV _{COSTS}	(58,865)			
				VALUE _{FCF}	112,656	IRR	-18.07%	IRR	-0.75%			
					MIRR	-13.04%	MIRR	-0.59%				
Based on Investor Required Rate of Return	Time	Year	Cash Flow	PV _{FCF}	Σ PV _{FCF}	FCF	PV _{FCF}	Σ PV _{FCF}	FCF	PV _{FCF}	Σ PV _{FCF}	
	0					(200,000)	(200,000)	(200,000)	(171,521)	(171,521)	(171,521)	
	1	2023	(33,081)	(25,447)	(25,447)	(55,081)	(42,370)	(242,370)	(33,081)	(25,447)	(196,968)	
	2	2024	44,153	26,126	679	22,153	13,108	(229,262)	44,153	26,126	(170,842)	
	3	2025	56,057	25,515	26,194	34,057	15,501	(213,761)	56,057	25,515	(145,327)	
	4	2026	68,639	24,033	50,227	77,639	27,184	(186,577)	99,639	34,887	(110,440)	
					PV _{FCF}	50,227	NPV	Σ PV _{FCF}	(186,577)	NPV	Σ PV _{FCF}	(110,440)
				Salvage Value	31,000	NPV Function	(186,577)	NPV Function	(110,440)			
				PV _{CV}	10,854	NPV PV _{BENEFITS} - PV _{COSTS}	(186,577)	NPV PV _{BENEFITS} - PV _{COSTS}	(110,440)			
				VALUE _{FCF}	61,081	IRR	-18.07%	IRR	-0.75%			
					MIRR	-9.95%	MIRR	5.84%				

5. Given everything you've considered, calculated and analyzed, provide your recommendation to Mahlmann given the options at hand and available information.

While the investment results in a positive quarterly cash flow by the end of its second year of operation the NPV remains negative under each of scenarios considered. One way to look at this would be to think about a return on investment (ROI), which is expressly negative – the cash flows don't even cover the capital outlay, resulting in a negative ROI of -16.62%. Over a period of four years the investment of \$200,000 (based on either the loan or equity contribution) is projected to

return a total of \$166,768 of cash flow ($-33,081 + 44,153 + 56,057 + 68,639 + 31,000 = 166,768$ and includes year-4 salvage value) for a total ROI of -16.62% or annualized ROI of -4.15%. This is consistent with the negative IRR and MIRR.

On a purely objective decision criteria-basis and short, four-year time frame the investment doesn't appear to be warranted and isn't worth recommendation. However, if we look at year-4 cash flow returns of \$68,639 against the \$200,000 initial investment, the year-on-year ROI increases dramatically suggesting the investment may be warranted given longer time frame.