Sunny Mountain Retreat: Cash flow and profit in a seasonal, vacation rental

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ABSTRACT

This case is based on an actual vacation rental in a rural area near a national park. Students view the case through Susan, who struggles to keep her family home by running it as a vacation rental. Susan has invested substantial time and money into a business that appears to break even. Susan has been so focused on winning customers and saving the home that she has neglected to conduct a rigorous analysis of cost, cash flow, and profit. Quantity sold and customer reviews suggest the business is successful relative to competing vacation rentals. Students' regression analysis reveals that Susan is charging a lower price than direct competitors who offer a similar location and amenities. Understanding that Susan faces a highly elastic demand, students evaluate the impact of a price increase on Susan's profits in a monopolistically competitive setting. Students must also categorize the cost of Susan's business activities; and consider whether her use of the property and its appreciation outweigh its opportunity cost. This case is designed for use in a junior-level business course that integrates core material from microeconomics and statistics.

Keywords: vacation rental, sharing economy, monopolistic competition, linear regression, opportunity cost, economic profit, cash flow, pricing

CLASSROOM USE

This case requires students to apply concepts covered in microeconomics principles and business statistics to evaluate pricing and profitability in a small firm. Specifically, students categorize cost; and calculate opportunity costs, revenues, profits, and cash flows. Students describe market structure and how it impacts price elasticity of demand. Additionally, students perform linear regression analysis and use the results to predict price.

The case is used in a junior-level, “gateway” course that is designed to integrate lower-division core material while developing students’ teamwork and communication skills. Student teams prepare the case with coaching from faculty. One student team presents their case analysis with a formal, power-point presentation, while another team acts as a "challenge team" to ask questions and offer alternative analysis. All remaining teams submit written answers to case questions. Approximately three classroom hours are devoted to the case; 1.5 hours for student questions and faculty coaching and 1.5 hours for the formal, student presentation.

This case is fictitious but closely based on the author’s own experience. The rise of Airbnb and the professor’s adventures managing the business have generated lively classroom discussions and thoughtful case analysis.

CASE BODY

The 300-mile drive to Heart Lake is always a time of deep reflection for Susan. It's been five years since her Mother passed away (in 2012) and Susan inherited her childhood home –two rustic cabins on 12 acres of forest. Susan had been determined to sell this place despite her Mother's wish that it remain in the family which then consisted of Susan, her husband and one-year-old twins. Susan was a life-long student of economics and it was "rational" to sell the property. She was cash-strapped after having twins and buying her first home. She lived 4.5 hours away; had a full-time job; and no property management skills. Plus, the 75-year-old cabins would be expensive to keep (e.g., repairs, maintenance, property taxes, and insurance). Susan had appointments with several real estate agents and her Mother's best friends (and nearest neighbors, Rita and Dan) had generously agreed to help Susan remove all personal items in preparation for the sale.

Susan's "rational" plans were confronted by emotional attachments and unconsidered economic opportunities. The old cabins were warm and inviting and they held so many happy, childhood memories. Susan was not emotionally prepared to sell her family home. She grieved for the loss of her Mother and felt guilty about the prospect of selling it. Susan forged her own friendship with those neighbors (Rita and Dan) during the painful process of packing up her Mom's things. Rita and Dan were willing to help manage the property for 10% of gross revenue plus $300 per month for yard work.

One real estate agent said, "it would be a real shame to sell such an incredible place for $470,000! You could rent it out in summer for $325 per night and expect to sell 75 days." Local demand conditions looked promising for a vacation rental. The property was 20 miles away from a national park with annual visitation above four million and growing (Villano 2011). Moreover, the birth of the "sharing economy" and sophisticated, online platforms (like Airbnb) lowered the transactions costs of peer-to-peer rentals. Sellers, like Susan, could make some money on their underutilized, second home and buyers paid less than they would for a hotel room (Schor 2016). In 2011, 10% of U.S. travelers stayed in peer-to-peer accommodations (Quinby 2016).

Susan decided to keep the property as a vacation rental and to have Rita and Dan manage and maintain it. This decision was an enormous undertaking. The cabins had a newer roof, flooring, and interior/exterior painting. However, they lacked adequate septic, water, electrical, and heating/air-conditioning systems for guests. Many of the appliances were old and the furnishings were worn. There were also health and safety concerns (e.g., attic rodents, rotting decks, and an old, Doughboy pool). Addressing these issues was expensive, totaling $75,000 over five years. Further, Susan spent hours maintaining the listing's three websites; coordinating cleaning and repairs; and communicating with guests. Her husband, Jonah, also spent hours on bookkeeping and tax preparation. Neither of them had been careful about recording their hours managing these activities. Jonah thought he spent around 100 hours per year paying bills and taxes. This took time away from his job that payed $52 an hour. Most property managers charge 20% of gross revenue to provide "onsite guest support" and "sales & logistics" (Brown 2016). Thus, Susan estimated the value of her time spent on "sales & logistics" at 10% of revenue.

Susan and Jonah were so busy with their full-time jobs and young twins that they neglected to conduct a rigorous analysis of cost, cash flow, or profit. They believed the property was breaking even but they weren't sure. Many financial planners and consultants who work with small-business owners indicate this behavior is fairly common. New owners are so busy "winning customers" that they neglect cost reports (Opiela 2006).

Revenues and five-star, guest reviews poured in. The property regularly sold 150 days per year at $365 per night. This was impressive for a rural, summer, vacation spot with more than 300 vacation rentals and eight, medium-sized hotels. (Professional, vacation rental managers indicated that it was rare to sell more than 100 days in the area.) Any spare revenue (above insurance, taxes, and utilities) was spent to repair and improve Susan's property. Over the past five years, the two cabins' major systems, appliances, and furnishings were all replaced. Rodents were excluded and attics were sanitized. Old, wooden decks were rebuilt and the Doughboy pool was hauled away. The property had been transformed and its market value had increased to $600,000.

There were intangible benefits too. Dealing with difficult guests, dishonest repairmen, and logistical problems had cemented a deep bond with Rita and Dan. Susan and her twins had come to love them and looked forward to visiting Rita and Dan during the three weeks a year when they stayed at Susan's property. Moreover, Rita and Dan treated Susan's property like their own -making all kinds of small repairs and improvements- and never charging for their labor. For example, they re-screened windows, installed appliances, repaired driveways, and removed trees. They only billed Susan for materials and doggedly insisted that payment for "onsite guest support" and "yard maintenance" covered such extensive work. This reduced the costs of maintenance and repairs that can easily exceed 1% of a property's value each year (Baron 2012).

Susan also had an amazing cleaning lady, Rosa, who had cleaned the cabins for Susan's Mom. Rosa was reliable, diligent, and honest. She earned $220 per cleaning. Guest reviews raved about the level of cleanliness. Rosa's husband, Jose, was a plumber and responded immediately to any plumbing emergencies at the property. The comradery between Rita, Dan, Rosa, and Jose was palpable and Susan was so proud of the property's team.

Susan was grateful for these close relationships that stemmed from her deep roots in the area. Yet, she felt frustrated to spend so much time and money on a business that appeared to earn nothing. This sentiment shows Susan's naiveté about vacation rentals. Many wealth managers and real estate professionals argue that vacation rentals are a bad investment with risky, annual returns that quickly turn negative with reduced bookings or major repairs (Baron 2010 and Kosnett 2010). Moreover, home-value appreciation is never guaranteed. Prices of U.S. vacation properties have only recently returned to 2006 prices (Brown 2017).

Susan gathered data to better understand her business. She recorded all bills and calculated some estimates to determine last year's costs (i.e., Exhibit 1 in Appendix.) She gathered all receipts (i.e., Exhibit 2 in Appendix). Susan also gathered price data on 142 vacation rentals listed on Airbnb that were located within a one-mile radius of Heart Lake (i.e., Exhibit 3 in Appendix). There were no other properties with two cabins. However, the data would allow Susan to predict how competitors' listing prices varied with the number of bedrooms.

CASE QUESTIONS

(1) Calculate total revenue, total cost, and average cost per booking. Categorize fixed versus variable costs; and cash versus non-cash costs. Calculate total profit and cash flow over the prior year. State the profit or loss per booking. State the cash flow per booking.

(2) Describe the competitive environment. In which market structure does this business compete? How elastic is consumer demand for a particular listing?

(3) Using the data in Exhibit 3, perform linear regression analysis to obtain an equation to predict competitors' listing price given the number of bedrooms. Predict the price Susan would charge to match her competitors' prices given that she has four bedrooms.

(4) If Susan matches her competitors' listing prices: (a) How many nights does she need to sell to break even? (b) How many nights does she need to sell to remain at her current level of profit? (c) Based on your calculations and understanding of the competitive environment, would you recommend that Susan raise price? Why or why not?

(5) How does the appreciation of the property; owners' usage of the property; interpersonal relations between owner, onsite hosts and cleaner; and opportunity cost of the owners' time and current investment of $600,000 in the property inform an understanding of this business?

(6) Is owning a vacation rental a good idea? Under what circumstances might owning a vacation rental make sense?

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APPENDIX

Exhibit 1. Costs Incurred During Prior Year	
Costs Incurred	Amount
Advertising & website subscription fees	$1,800
Bookkeeping & tax preparation	5,200
Cleaning expenses ($220 per booking)	10,340
Consumables used by guests	940
Depreciation on household goods	11,040
Financial transaction fees (3% of revenue)	1,643
Insurance	4,080
Onsite guest support (10% of revenue)	5,475
Phone & Internet	1,260
Property taxes	1,200
Sales & logistics (10% of revenue)	5,475
Structural maintenance & repairs	15,000
Transient occupancy taxes (11% of revenue)	6,023
Utilities	4,250
Yard maintenance ($300 per month)	3,600

Exhibit 2. Revenues Earned During Prior Year	
Price per night	$365
Number of bookings	47
Number of nights sold	150

Exhibit 3. Competitors' Listing Price and Number of Bedrooms					
Listing number	Price per night	Number of bedrooms	Listing number	Price per night	Number of bedrooms
1	118	2	11	140	2
2	175	1	12	233	2
3	253	3	13	187	3
4	469	4	14	126	1
5	153	1	15	167	2
6	343	2	16	175	2
7	213	1	17	182	2
8	200	2	18	155	1
9	449	5	19	200	3
10	250	2	20	456	3

Exhibit 3 Continued					
Listing number	Price per night	Number of bedrooms	Listing number	Price per night	Number of bedrooms
21	101	1	62	280	2
22	633	4	63	260	2
23	198	2	64	208	1
24	270	2	65	392	3
25	149	1	66	140	1
26	246	2	67	583	4
27	253	1	68	287	3
28	232	2	69	273	3
29	302	2	70	400	3
30	183	2	71	438	5
31	195	1	72	392	5
32	375	4	73	319	2
33	245	3	74	241	2
34	237	3	75	133	2
35	135	0	76	322	2
36	113	1	77	250	2
37	266	2	78	287	2
38	157	2	79	225	3
39	478	5	80	224	1
40	598	6	81	403	3
41	346	3	82	332	3
42	331	3	83	225	3
43	158	2	84	531	4
44	219	3	85	260	2
45	349	2	86	227	2
46	233	3	87	219	2
47	520	3	88	291	2
48	233	3	89	175	2
49	228	3	90	175	2
50	152	3	91	260	2
51	342	2	92	416	1
52	353	3	93	332	3
53	118	1	94	247	2
54	282	3	95	613	5
55	207	4	96	263	3
56	193	4	97	239	2
57	599	5	98	338	2
58	583	4	99	467	5
59	320	2	100	432	4
60	172	1	101	333	3
61	210	2	102	533	4

Exhibit 3 Continued		
Listing number	Price per night	Number of bedrooms
103	337	3
104	424	3
105	283	3
106	666	6
107	358	4
108	232	1
109	332	3
110	275	4
111	467	3
112	232	1
113	377	3
114	203	4
115	690	3
116	400	3
117	423	3
118	232	2
119	383	1
120	340	2
121	360	4
122	545	3
123	307	2
124	546	3
125	258	2
126	337	3
127	220	1
128	308	2
129	240	3
130	325	3
131	187	2
132	353	3
133	360	2
134	420	3
135	303	2
136	265	2
137	383	2
138	280	2
139	151	1
140	205	0
141	345	3
142	310	3