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Summary

A husband and wife team from Northcentral Ohio are interested in obtaining a vending machine route in northern central/western Ohio. Currently, both individuals have experience in food service and would like to explore the opportunity of representing a vending machine company with existing vending machines in schools, businesses, colleges, retail store breakrooms, etc. They would also consider purchasing several vending machines and placing them in existing vending routes in college/university locations, retail store breakrooms, schools and other

locations. She is concerned about what types of vending machines would net the greatest profits, where to place the vending machines and how to track sales, etc. She is also concerned how to keep track of which products are selling the best. In addition, she is considering having at least some healthier items in her product mix including fruit snacks and cheese crackers as well as other low-fat snacks and at least some sugar free beverages as well.

Problems and Opportunities Task 1

Problem	Opportunity
Where to locate vending machines	<ol style="list-style-type: none"> 1. There is an opportunity to locate vending machines in high-traffic areas such as schools, colleges and retail store breakrooms. 2. Opportunity to place machines in safe, high traffic areas by agreeing to pay a percentage of sales for the space and agreeing to service the machines regularly as well as analyze sales in order to ensure a profitable product mix.
Which products to include in vending machines	<ol style="list-style-type: none"> 1. Opportunity to stock vending machines with traditional snack items or a mix of healthier items and traditional snack items 2. Opportunity to offer name brand products such as © Ruffles and © Lays Potato Chips as well as © Welch’s Fruit Snacks and © Pepsi and/or © Coke products 3. Opportunity to buy vending products at discounted prices from online retailers as well as to buy beverages from mass merchandisers and/or wholesale clubs 4. Opportunity to vary the product mix based on the location of each machine
What prices to charge for vending machine products	<ol style="list-style-type: none"> 1. Opportunity to set prices that are determined based on where the machines are located and based on what competitors are charging

<p>How to determine which products are selling the best and how to manage your expenses as well</p>	<ol style="list-style-type: none"> 1. Opportunity to use programs such as Excel and Access to track sales and to isolate products that are selling at higher rates in a table so that those products are ordered and stocked in higher quantities. 2. Opportunity to use zip codes and types of businesses as categories that look for patterns in sales in order to indicate the ideal product mix. 3. Opportunity to use Excel to manage your expenses
<p>How often to service the machines</p>	<ol style="list-style-type: none"> 1. Opportunity to establish a servicing schedule based on sales by utilizing credit card and mobile pay options that keeps track of sales and items sold.
<p>How to keep track of expenses and profits</p>	<ol style="list-style-type: none"> 1. Opportunity to use a program such as Excel for bookkeeping. 2. Opportunity to keep track of sales by product category as well as by individual product type. 3. Opportunity to pay taxes on a quarterly basis so that expenses are managed appropriately.
<p>Whether to buy their own machines or buy into an existing vending machine route</p>	<ol style="list-style-type: none"> 1. Opportunity to buy vending machines- possibly one beverage vending machine and two snack machines or three combo beverage and snack machines. 2. Opportunity to put the machines in colleges/community colleges and/or retail store breakrooms based on the combo machines and to change the product mix based on sales 3. Opportunity to place a machine in a community college setting in a busy canteen location that does not have other food service offerings outside of vending machines.

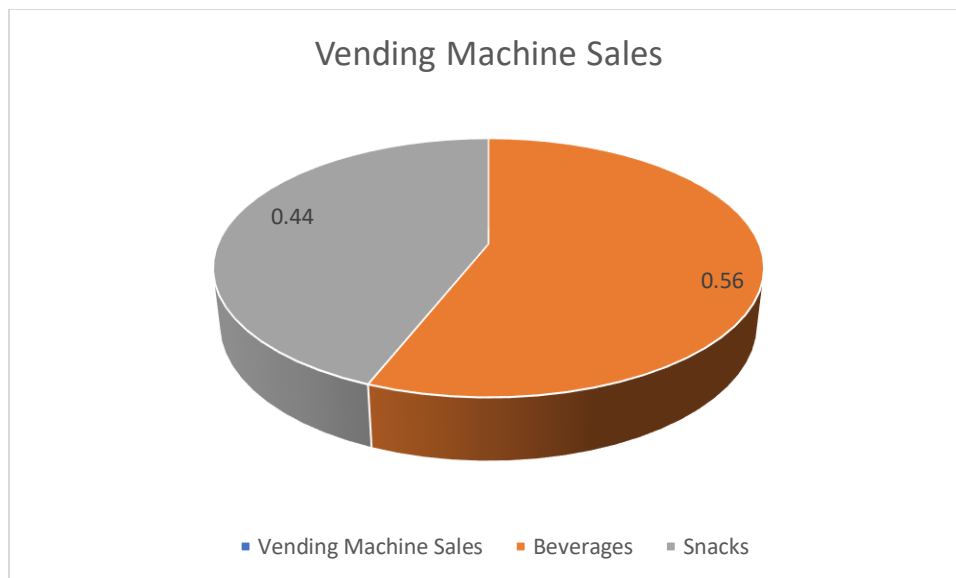
<p>Whether product mix should vary based on location of the machines</p>	<ol style="list-style-type: none"> 1. Opportunity to vary the product mix based on an analysis of which products are selling the best and to use a program such as Microsoft Access to analyze sales by product based on location to determine which products to include in each vending machine. 2. Opportunity to conduct marketing research on a location by location basis to determine which products to include in each machine based on location.
<p>What types of vending machines would be best to buy or what type of route would be best to buy into</p>	<ol style="list-style-type: none"> 1. Opportunity to place vending machines at schools or on college campuses where vending is likely to be the most popular for snacks and beverages 2. Opportunity to include bottled water and healthy snacks as part of the product mix
<p>Where to buy products to fill the machines</p>	<ol style="list-style-type: none"> 1. Opportunity to buy snacks based on sales at grocery store outlets, warehouse clubs as well as through online retailers.
<p>Whether or not to buy refrigerated/beverage machines or machines that hold both beverages and snacks, for example</p>	<ol style="list-style-type: none"> 1. Fifty-six percent of vending machine sales are for cold drinks (Gaille, 2017). Also, healthier snacks sell three times faster than traditional snacks (Gaille, 2017). 2. There is an opportunity, therefore, to sell beverages as well as healthier snacks through a machine that holds both snacks and beverages.



Purco Combo Soda/ Snack Machine

\$1,500.00 on eBay or \$73 per month for 24 months

According to research, 56% of sales in vending machines are for beverages while 44% are for snacks. The pie chart below reflects these statistics.



Problem:

Where to locate vending machines:

Solution:

The highest sales for vending machines were in K-12 schools where 30% of all vending profits were made, but now schools are not allowed to sell soft drinks, cookies or candy at school vending machines (Gaille, 2017). What this means is that many vending machine operators may turn to college dorms and breakrooms at mass merchandiser retail stores as well as hotels, hospitals, and movie theaters and public main libraries for their profits (McCulloch, 2017). Other locations might include clubhouses at apartment complexes as well as laundromats and college libraries and canteens. Possible colleges to approach might include Bowling Green Firelands Campus (1,970 Students), Terra State Community College (2,243 students), Lorain Community College (11,042 students), Ohio Business College in Sandusky (212 students), and Owens Community College in Perrysburg, Ohio (10,038 students), as well as find apartment complexes using the following link to locate potential vending machine locations:

[https://www.apartments.com/sandusky-oh/?msclkid=f0058640ec60134b668bdbbc4f493c36&utm_source=bing&utm_medium=cpc&utm_campaign=APTS_G_DMA_Cleveland%20Akron%20\(Canton\)%20OH_SRP_KWT_EST&utm_term=apartments%20in%20Sandusky%20Ohio&utm_content=APTS_G_DMA_Cleveland%20Akron%20\(Canton\)%20OH_CITY_Sandusky_Generic_SRP_KWT&gclid=CJah58Knw-YCFUWPxQIduZ0Flg&gclsrc=ds](https://www.apartments.com/sandusky-oh/?msclkid=f0058640ec60134b668bdbbc4f493c36&utm_source=bing&utm_medium=cpc&utm_campaign=APTS_G_DMA_Cleveland%20Akron%20(Canton)%20OH_SRP_KWT_EST&utm_term=apartments%20in%20Sandusky%20Ohio&utm_content=APTS_G_DMA_Cleveland%20Akron%20(Canton)%20OH_CITY_Sandusky_Generic_SRP_KWT&gclid=CJah58Knw-YCFUWPxQIduZ0Flg&gclsrc=ds)

Problem:

Which products to include in vending machines:

Solution:

- According to Gaille (2017), there are three times more healthy snacks sold from vending machines than traditional snack foods.
- Having bottled water available in vending machines is a healthy alternative to sugar sweetened sodas (Berman & Johnson, 2015).
- At the University of Vermont, the breakdown of beverages sold was 100% juice: 15.3%, sugar free soda: 11.9%, low calorie soda: 11.2%, sugar sweetened soda: 28.2%, Milk and protein drinks: 17.3%, Bottled Water: 17.6% in the Spring of 2012 (Berman & Johnson, 2015). The low-calorie soda was primarily in the form of bottles of seltzer water with flavoring (Berman & Johnson, 2015). **Use this as a guideline for which beverages to include in the product mix.**
- The breakdown as far as consumption was such that 23.52% of the campus population regularly consumed vending machine beverages, and 19.26% of the university population consumed vending beverages in moderation while 57.2% of the university population consumed only healthy options or limited consumption of beverages altogether (Berman & Johnson, 2015). Use this as a guideline for choosing vending products.
- Research has also shown that people of college age (19-39 years) consume more bottled beverages than all other age groups combined (Berman & Johnson, 2015). The eight campuses combined in this study had 16,582 persons and were responsible for one million bottles of beverages or 60 bottles of beverages per person in a four-month period, which far surpasses the average expenditure per person of \$27 at vending machines per year. What this means is that colleges are apparently a very good market for vending services if the University of Vermont is representative of other colleges. **Place vending machine(s) at college campuses, if possible, in high traffic areas.**
- The average cash transaction in 2013 for a vending purchase was \$1.16. What this means is that, at the University of Vermont, each student/faculty/staff member was spending \$69.60 on vended beverages alone over a four-month period, or \$17.40 per month on soda and other beverages alone. This did not include other associated snack purchases which make up 44% of vending machine sales (Gaille, 2017).
- According to Horacek et al., (2019), these authors stated that the price of vending machine products has a great deal of influence over purchasing habits. Researchers have noted that healthier snacks have increased sales when they are strongly promoted. Therefore, choosing healthy snacks that are heavily promoted by the snack food manufacturer will likely increase sales. When the availability of healthier snacks is increased, healthier product sales also increase (Horacek et al., 2019). **Have at least some healthy snacks as part of the product mix.**
- Being able to at least see the calories per serving on the front of the package is also helpful in increasing sales of healthier snacks (Horacek et al., 2019).

- Price also affects sales of healthier products. According to Horacek et al., (2019), when healthier products are offered at a reduced cost, the sales of healthier products increases.
- In a study conducted by Horacek et al., (2019), a total of 228 vending machines were assessed on 9 university campuses. According to this same source, Horacek et al., (2019), only 12.2% of snack and 30.8% of beverage machines that were evaluated had $\geq 25\%$ total healthy products and this was based on machines in the Northeast, Midwest and Southern United States. A difference was noted in a study in which healthier products were placed in vending machines in the residence halls had far fewer healthier items than those machines placed in the recreation services areas (Horacek et al., 2019). **Make healthy snacks accessible to students regardless of where they are placed in the college environment.**
- More of the mixed machines in the study required restocking, which might have indicated that merchandise in the mixed beverage and snack machines was selling better (Horacek et al., 2019). The mixed machines are the type that are shown above in the picture displaying the Purco Vending Machine, which is a mixed machine that offers beverages, snacks and other related items that might include products such as Lunchables and pizzas that can be sold in this machine. **If machines will be purchased, it is best to have the mixed machines.**
- According to Horacek et al., (2019), when vending machine operators replaced at least some of the traditional snacks with healthy snacks, 80% of vending machine customers liked the healthier snacks. Also, Westomatic, a company that is a leader in healthy vending, said that they have seen strong growth in healthy vending opportunities in the last 12 months at colleges and universities (Westomatic.com, 2019). **Approach colleges and ask if you can place a vending machine on campus that offers healthy snacks and beverages as an alternative to the traditional snack machines they already have.**
- According to Ali et al., (2015), there is a high level of skipped meals and consumption of fast food and soft drinks among college students. According to this same source, Ali et al., (2015), vending machines in 11 college campuses that were studied in the United States contained limited healthy food choices. **Again, sell prospective colleges and universities on the idea of letting you place a vending machine on their campus that has a mix of healthy items along with some of the more traditional items.**
- Students tend to use vending machines between classes and especially in the morning before lunch (Ali et al., 2015). In one case, students suggested conducting a focus group on campus to determine which foods the students would like to see in the vending machines (Ali et al., 2015). Also, many students said they do not read the food labels, so they rely on vending machine operators to provide sensible choices (Ali et al., 2015). Students also suggested putting up a poster that identifies which items are healthiest in each vending machine (Ali et al., 2015). Also, in this study, students suggested offering a prize such as a gift card in exchange for participation in a focus group (Ali et al., 2015).

- **Do a focus group to see what students want in your vending machine and offer a small prize to participants along with samples of the products so that they will be able to evaluate them.** Also, ask about putting up a poster near the vending machine or on an easel that advertises the healthier products to students. Fill the machines in the evening since the demand is high before lunchtime in the mornings. **Use the fact that you will refill the machines very regularly as a selling point to get into prime locations such as colleges and universities.**
- **According to Ali et al., (2015) you should also hold a short lecture for students in the cafeteria on nutrition and promote your vending machine which contains healthier products along with traditional items. You should organize this through the university at which you have your vending machine and let students know where the machine is located on campus. Agreeing to hold events such as this for students may make you an attractive choice for a vending contract with a prospective college or university.**
- Some of the products that K&K Vending considers as healthy include Skinny Pop, Pretzels, Pirates Booty, Special K Chips, Veggie Straws, Snyder's Pretzels, Fiber One Bars, Kind Bars, Lara Bars, Kashi Bars, Nature Valley Bars, Clif Bars, Nutri Grain Bars, Mott's Fruit Flavored Snacks, Planters Heart Healthy Mix, Belvita Breakfast Biscuit, Baked Lays Potato Chips, Sun Chips
- Some examples of healthy beverages according to K&K Vending include Propel Water, Vitamin Water, Lipton Green Tea, Bai, Horizon Organic Chocolate Milk, and Juices.

Problem:

What prices to charge for vending machine products?

Solution:

- Price also affects sales of healthier products. According to Horacek et al., (2019), when healthier products are offered at a reduced cost, the sales of healthier products increases.

Sample pricing:

Product	Sam's Club Price	Package Size	Our Cost / Item	We would Charge
Lays® Potato Chips	\$ 10.89	50 / Package	\$ 0.22	\$.50 - .75
Snickers® Candy Bars	\$ 28.34	48 / Package	\$ 0.60	\$1.25 - 1.50
Grandma's® Cookies	\$ 11.58	36 / Package	\$ 0.32	\$0.75 - \$1.00
Coca Cola® 12 oz Can	\$ 9.69	32 / Package	\$ 0.30	\$ 0.65 - 1.00
Gatorade® 20 oz Bottle	\$ 15.78	24 / Package	\$ 0.66	\$1.50 - 1.75

- According to the Discount Vending Store (2014), and based on the above chart, “you should price your product at two to three times the price you paid, which allows you to collect a profit without having to charge exorbitant prices.” The above list is some of the

most popular traditional vending products and what he charges. He buys in bulk at Sam's Club. These were 2014 prices so they might be a little higher now.

Problem:

How to determine which products are selling the best and how to manage your business:

Solution:

- You may want to use Microsoft Access to store your data and then import it into Excel to analyze it. You will want to familiarize yourself with both programs while you are taking time to sell customers on why they should allow you to place a vending machine in their business/organization. You will want to have a product table, a customer table, and a product sales table as well as a table that keeps track of the data and time that you serviced each customer, for example.
- A good book to help you to become familiar with Access is a book entitled Database Concepts, Eighth Edition by Kroenke et al., (2017). The ISBN # for this book is 13: 978-0-13-460153-3. See page 497 of this book for an example of each table and what is to be included. You can use the query wizard in Access to conduct query to get a better idea of what is selling best and where it is selling, etc. It will probably take you 6-8 weeks to become comfortable using Access if you have not used this program in the past. You can purchase this book on Amazon.
- You will want to keep hard copies and receipts for all your expenses. You may want to keep track of your expenses in Excel since you are probably familiar with Excel. You can use excel to create pivot tables and then create charts and graphs to better visualize how your business is doing and to see the percent of the whole pie occupied by each product or category of product.
- Expenses will include any machine repairs, many of which you can probably make yourself as a vending machine is a simple machine. Expenses will also include travel, product purchases, insurance for your vehicle and commercial property insurance for your machines, purchase of coolers for refrigerated or frozen products, ice packs to keep your products cold or frozen, mileage, fuel purchases, the cost associated with Microsoft Office 365 purchase, and any other expenses you incur in conducting business.
- You will want to keep receipts for everything you buy and record all expenses by category in Excel. If you purchase vending machines, you will want to record all payments that you make to pay off the machines and any expenses associated with the space you are given to sell your products such as having to pay a percentage of sales to the customer who allows you to place your vending machine at their organization or place of business. Along with storing your records in the cloud, you will also want to keep a hard copy of all your information in a fireproof filing box.
- You can also set up an office in your home to manage your business as well. You may eventually need a storage unit for product storage as well. You may also eventually want

to get a freezer to store frozen goods that you purchase ahead of time as well. In addition, you may eventually want to purchase a small truck or SUV to transport product for your machines as you grow your business.

Problem:

How often to service the machines:

Solution:

- At colleges and universities, it is likely that more product will be sold early in the day. At first you may want to service your machines as least 2-3 times per week. Unlimited hours of operation, according to Ali et al., (2015) along with competitive pricing of products are a big reason that vending machines are so popular on college campuses. Making sure the machines are full is a key to success.

Problem:

How to keep track of expenses and profits:

Solution:

- To determine expenses, you should use activity-based costing

The ABC calculation is as follows:

- 1. Identify all the activities required to create the product.**
 - 2. Divide the activities into cost pools, which includes all the individual costs related to an activity—such as manufacturing. Calculate the total overhead of each cost pool.**
 - 3. Assign each cost pool activity cost drivers, such as hours or units.**
 - 4. Calculate the cost driver rate by dividing the total overhead in each cost pool by the total cost drivers.**
 - 5. Divide the total overhead of each cost pool by the total cost drivers to get the cost driver rate.**
 - 6. Multiply the cost driver rate by the number of cost drivers.**
- Activities might include cost of insurance for your vehicle divided by the distance to drive to each account twice per week or 8 times per month to use this cost to determine the insurance cost of driving to your accounts. Another cost would be commercial insurance for each machine. Another cost would be the amount of money required to fill your machines with product to capacity. Another cost would be the price of fuel to drive to each of your accounts. Another cost would be the monthly payment for each of your machines during the first two years necessary to pay them off. You need enough sales to cover all these costs. At a busy college, you should be able to earn \$100 per week for each machine when you are just starting out or \$1,200 per month. You should make sure this covers all your expenses. If your insurance is \$120.00 per month, your payment for

your machines is \$220 per month, product for your machines is \$300.00, fuel cost is \$30.00, then your expenses for the month are \$670.00.

- The product costs will increase depending on how busy your machines are. This is hypothetical, but if you made the minimum payment per month based on this scenario, your profit would be \$530.00, which you could put into an account to pay down your machines more quickly. This scenario is based on having three machines in moderately busy locations. Once you pay off your machines based on the same scenario, your monthly profits are \$750.00 per month or \$9,000 per year, which you can use to invest in more machines.
- This is a very conservative estimate as a college with 16,000 students can sell one million cold beverages in one semester over 160 machines, or 6,250 beverages per machine in 4 months' time. This would add up to \$7,812.50 for the beverages alone at a price of \$1.25 per beverage. At a cost of \$1,875 for the beverages, that is a profit of \$5,937.50 for each machine. For 3 machines that is potentially \$17,812.50 in profit from beverages alone in four months.
- That is why it is worthwhile to do all the work and the focus groups, the educational programs as well as an agreement to service the machines often to get into a busy college environment with your vending machines. How much business you do will depend on the size of enrollment of on-campus students. This is just a scenario to let you know what is possible in a busy college environment.
- How much you insure your vending machine for depends in part on what kind of machine it is and where you place it. Vending machines are in high visibility spots, so theft and vandalism isn't much of an issue. And since the risk is small, you can probably buy property policy that covers all your machines for a low premium. It's a good idea to include this with all your liability coverage in single vending machine business insurance policy. Use the free services of NetQuote.com to compare quotes, and you'll quickly discover just how little you must pay. Protect your product and your assets, and your vending machine business will always run smoothly (NetQuote, Inc., 2019).