

# Bridgestone Behavioral Health Center: Cost-Volume-Profit (CVP) Analysis for Planning and Control

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## INTRODUCTION

In June of the current year Dr. Thomas Russell, Executive Director, and Susan Smyth, Accountant, at the Bridgestone Behavioral Health Center were discussing the necessity of gaining a better understanding of how to monitor the Center's operating and financial performance. Located in Cleveland, Ohio, Bridgestone provides prevention, intervention, and treatment services for individuals with substance abuse problems. Bridgestone's management is concerned about its financial performance after realizing a loss in the prior year although a small profit was projected. Despite management's concern and attention of Bridgestone's profitability troubles, the Center's annual budget once again contains a projection for a meager profit of \$7,000 (see Exhibit 1).

**Thomas:** According to the financial reports that you have prepared, we have been fighting to reach breakeven over the past three years. We have been able to just get past breakeven recently, but I am worried—it seems like only a slight variation in our operations could throw us into an operating loss. I've been actively involved in managing the Center, and I don't understand how we avoid showing a loss!

**Susan:** Unfortunately, I have no oversight with respect to monitoring performance since my job is to input the financial and units of service numbers into the accounting system as they occur. I am currently working more than 40 hours a week so I am not sure what else I could do. Maybe we can hire someone like a consultant to help us?

**Thomas:** In reality, securing some outside assistance seems to be a good option to avoid future losses. Since my training is in psychology, I don't have the accounting background to take the task on myself. We need someone who specializes in financial management for nonprofit human service organizations.

## BRIDGESTONE BACKGROUND

### HISTORY AND MISSION

Bridgestone is a comprehensive outpatient substance abuse treatment center located in the Midwest United States. Since 1985, Bridgestone has offered a continuum of outpatient services, including counseling, crisis intervention, detoxification, and methadone maintenance. The Bridgestone mission is to be a leader in healing and changing lives by providing high quality behavioral health care and rehabilitation to all individuals in need. With this mission, the Center promises to advance behavioral healthcare through the creation of innovative services and enriching the lives of patients one by one.

### EXECUTIVE DIRECTOR AND SUPPORTING STAFF

Dr. Thomas Russell, Executive Director, has over 30 years of behavioral health addiction experience and holds a Masters of Social Work from Ohio University and a Ph.D. in Clinical Psychology with a specialization on Addiction Counseling from Northwestern University. He is a fellow

of the American College of Addiction Examiners and is a former faculty member of the Ohio University Department of Psychology. Dr. Russell is the author of numerous papers in the field of addictions and presents frequently at major conferences.

In addition to a highly qualified Executive Director, Bridgestone has an outstanding support staff. They consistently maintain a low client-to-staff ratio with highly trained professionals who are well prepared to support patients in a large array of circumstances. The staff members at Bridgestone are like a family and are defined by their integrity and expertise. They are the key reason for the Center's success in terms of the thousands of lives that they have changed.

### **PATIENT TESTIMONIALS**

Patient and family member testimonials include:

“I wanted to say thank you for helping my daughter! I know of lots of therapists...in fact I am one. After 20 years of practice I was very frustrated sending my daughter to treatment until Bridgestone. Yes there are therapists...but your folks are THERAPISTS, with a capital T.”

“Today is my one year anniversary of sobriety, which would not have been possible without the help of the counselors at Bridgestone. I can't say thank you enough!”

“I'm thankful to Bridgestone for the treatment I received. The road to recovery was not an easy road back. I still do the same elementary things today that I had to do to achieve recovery. I realized that honesty and open-mindedness was a must. I had to surrender all—I wanted real success.”

### **BEHAVIORAL HEALTH AND ADDICTION SERVICES**

Bridgestone offers 10 services designed to treat a large array of substance dependencies from the point of detoxification to supporting long-term sobriety and preventing relapses.

**Patient Assessment** – Patient assessment is performed by an addiction counselor who uses a number of methods to determine if an alcohol or drug use problem truly exists. If such a diagnosis is established, it is necessary to determine the extent or severity of disease, if there is a need for medical detoxification, and the services or level of care required to safely and successfully achieve sobriety.

**Lab Urinalysis** – Laboratory urinalysis services are performed for screening and intervention purposes. This is aimed at helping the patient withstand urges to use drugs. Such monitoring also can provide early evidence of drug use so that the individual's treatment plan can be properly adjusted.

**Case Management** – Case management serves to monitor patient progress and compliance with recommended addiction treatment plans. Reports to outside parties such as courts, children's protective services, licensing boards, and employers are provided as needed.

**Group Counseling** – Groups are considered the most effective method of breaking patterns of isolation, which is typical of clients during their active addiction stage. During group counseling, clients have the opportunity to examine their thoughts through sharing, listening, and receiving feedback from their peers. In a group setting, clients also learn to develop social skills.

**Individual Counseling** – Individuals with addictions often consider their problems unique and, therefore, are best understood in a one-on-one session with their counselor. Individual counseling sessions focus on the patient's progress in the educational process, group participation, drug monitoring, compliance, 12-step work, and identification of areas for improvement to achieve long-term sobriety.

**Crisis Intervention** – Due to the volatile nature of the disease of addiction, Bridgestone provides crisis intervention or emergency counseling for stressful situations that may lead to relapse or to help patients work through cravings or urges that could lead to a relapse.

**Intensive Outpatient** – Outpatient care focuses on education and counseling in both individual and group settings to achieve abstinence and to develop a self-responsible plan of addiction recovery for each patient. The program lasts six to eight weeks depending on individual progress and involves three three-hour sessions per week.

**Medical Somatic** – The service evaluates and monitors the needs of adults, children, and adolescents exhibiting symptoms associated with a *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, (DSM-IV) diagnosis. (DSM-V is expected in 2013.) This consists of evaluating a patient's need for psychotropic medications associated with psychotic disorders, severe mood disorders, impulse control disorders, bi-polar disorders, and other psychiatric conditions impairing daily functioning.

**Methadone Maintenance** – Patients with an opiate addiction are provided with individualized healthcare and medically prescribed methadone to relieve withdrawal symptoms, reduce the opiate craving, and bring about a biochemical balance in the body.

**Ambulatory Detoxification** – Ambulatory detoxification (also known as outpatient detoxification) is designed to safely detoxify patients from drugs and alcohol without a hospital admission. Ambulatory detoxification as an outpatient treatment has the advantage of causing minimal disruption to a patient’s normal day-to-day life.

## MEDICAID FOR BEHAVIORAL HEALTH SERVICES

Ohio is one of the few states that includes behavioral health services in its Medicaid benefits package, although it is not required to do so by federal law. States that cover behavioral health services must clearly define which services are covered by Medicaid. To facilitate receiving payment for Medicaid patients, the types of services Bridgestone offers are consistent with those defined as covered services by the state of Ohio.

When a Medicaid client receives mental health and/or alcohol and drug addiction services, the local Alcohol, Drug Addiction and Mental Health (ADAMH) Board, Alcohol and Drug Addiction Services (ADAS) Board or the Community Mental Health (CMH) Board pays the provider. The Board is then reimbursed for 60% of the cost by the federal government, which flows to the Boards through the Ohio Department of Mental Health (ODMH) and the Ohio Department of Alcohol and Drug Addiction Services (ODADAS) via an interagency with the Ohio Department of Job and Family Services (ODJFS). The remaining 40% Medicaid match comes from both state and local sources.

The Medicaid reimbursement rates for each service type and the respective level of service expected for the upcoming year are used in preparing the Center’s annual budget and quarterly budget as presented in Exhibit 1 and Exhibit 2, respectively. Since there is modest fluctuation in the demand for services from quarter to quarter, the quarterly budget is 25% of the annual budget. Although Medicaid reimbursement is the primary source of revenue for Bridgestone, a minimal amount of revenue is generated from private pay customers.

## SERVICE CONSULTING PLUS, LLC

As identified earlier, Bridgestone has experienced significant financial stress, and the Executive Director, Thomas, was inquisitive about how to stabilize financial operations above a break-even level. As well, he would like to gain the ability to measure and monitor the Center’s continuing performance. Faced with the lack of internal personnel who could help with this issue, Thomas contacted *Service Consulting Plus, LLC*, a local consulting firm with a reputation for working with nonprofit organizations. The firm is owned and operated by Sheryl Marshall, who is also an accounting professor at Cleveland State University. Her firm specializes in the management of governmental and nonprofit organizations.

At the end of their initial meeting to discuss the situation at Bridgestone, Thomas stressed that he didn’t simply want to hire Sheryl to get the job done for the current year, but rather that he wanted to learn how to measure and monitor the financial performance of Bridgestone on an ongoing basis. With this in mind, Sheryl explained that Cost-Volume-Profit (CVP) analysis would be useful to Thomas after he gathered some basic information about costs, revenues, and units of service. She explained that CVP is a fundamental management accounting tool that is useful for planning, control, and decision making. It explores important relationships between costs, volume or activity levels, and profit.

Sheryl asked Thomas to provide her with Bridgestone’s annual budgetary income statement in a contribution margin format. She explained that this format is the basic foundation for CVP analysis since it presents revenues and expenses based on their variable or fixed behavior in relation to service activity (namely, volume of services). Sheryl’s understanding of Bridgestone’s operating environment and the contribution margin income statement will enable to provide suggestions regarding how to increase profitability. The three key suggestions include a focus on maintaining targeted service volume, reducing discretionary fixed costs, and offering off-campus programs to companies and nonprofits.

## SERVICE VOLUME

Sheryl’s prior experience consulting for health centers that rely on Medicaid reimbursement for revenue has taught her the importance of achieving projected levels of service volume in order to maintain profit targets. Missing the projected levels of service will cause centers to pass up potential revenue and contribution margin. Service levels underscore the importance of monitoring the volume of delivered service and to ensure that it doesn’t fall behind the planned volume when Medicaid is involved. Thus, it’s

**Exhibit 1:  
Bridgestone Behavioral Health and Addiction Center  
Next Year's Annual Budget**

	Assessment	Urinalysis	Case Management	Group Counseling	Individual Counseling	Crisis Intervention	Intensive Outpatient	Medical Somatic	Methadone Maint.	Ambul Detox	Total
<b>Revenue</b>											
Medicaid	\$ 40	\$ 100	\$ 80	\$ 30	\$ 90	\$ 140	\$ 110	\$ 200	\$ 15	\$ 260	
Rate	4,000	11,550	6,000	28,000	12,000	1,500	2,000	800	8,000	1,300	
Units of Service											
Revenue	\$ 160,000	\$ 1,155,000	\$ 480,000	\$ 840,000	\$ 1,080,000	\$ 210,000	\$ 220,000	\$ 160,000	\$ 120,000	\$ 338,000	\$ 4,763,000
State	-	-	-	-	-	-	3,000	-	-	205,000	208,000
Private Pay	10,000	500	-	5,000	10,000	-	3,500	-	-	-	29,000
Total	\$ 170,000	\$ 1,155,500	\$ 480,000	\$ 845,000	\$ 1,090,000	\$ 210,000	\$ 226,500	\$ 160,000	\$ 120,000	\$ 543,000	\$ 5,500,000
<b>Variable Costs</b>											
Medications/Tests	\$ 30,000	\$ 404,250		\$ 140,000	\$ 120,000	\$ 30,000	\$ 200,000	\$ 200,000	\$ 96,000	\$ 260,000	1,480,250
Other	2,500	2,000	\$ 10,000	2,000	2,000	1,000	250	-	-	-	19,750
Total	\$ 32,500	\$ 406,250	\$ 10,000	\$ 142,000	\$ 122,000	\$ 31,000	\$ 200,250	\$ 200,000	\$ 96,000	\$ 260,000	\$ 1,500,000
<b>Contribution Margin</b>	\$ 137,500	\$ 749,250	\$ 470,000	\$ 703,000	\$ 968,000	\$ 179,000	\$ 26,250	\$ (40,000)	\$ 24,000	\$ 283,000	\$ 3,500,000
<b>Fixed Expenses</b>											
Salaries & Benefits											1,827,607
Consulting Fees											174,685
Rent											419,244
Transportation											104,811
Office supplies											69,874
Depreciation											3 73,424
Other											524,055
<b>Total Fixed Expense</b>											\$ 3,493,700

**Exhibit 2:**  
**Bridgestone Behavioral Health and Addiction Center**  
**Quarter 1 Next Year's Budget**

	Assessment	Urinalysis	Case Management	Group Counseling	Individual Counseling	Crisis Intervention	Intensive Outpatient	Medical Somatic	Methadone Maint.	Ambul Detox	Total
<b>Revenue</b>											
Medicaid	\$ 40	\$ 100	\$ 80	\$ 30	\$ 90	\$ 140	\$ 110	\$ 200	\$ 15	\$ 260	
Rate	1,000	2,888	1,500	7,000	3,000	375	500	200	2,000	325	
Units of Service											
Revenue	\$ 40,000	\$ 288,800	\$ 120,000	\$ 210,000	\$ 270,000	\$ 52,500	\$ 55,000	\$ 40,000	\$ 30,000	\$ 84,500	\$ 1,190,800
State	-	-	-	-	-	-	750	-	-	51,250	52,000
Private Pay	2,500	125	-	1,250	2,500	-	875	-	-	-	7,250
Total	\$ 42,500	\$ 288,875	\$ 120,000	\$ 211,250	\$ 272,500	\$ 52,500	\$ 56,625	\$ 40,000	\$ 30,000	\$ 135,750	\$ 1,250,650
<b>Variable Costs</b>											
Medications/Tests	\$ 7,500	\$ 101,063	-	\$ 35,000	\$ 30,000	\$ 7,500	\$ 50,000	\$ 50,000	\$ 24,000	\$ 65,000	\$ 370,063
Other	625	500	\$ 2,500	500	500	250	63	-	-	-	4,938
Total	\$ 8,125	\$ 101,563	\$ 2,500	\$ 35,500	\$ 30,500	\$ 7,750	\$ 50,063	\$ 50,000	\$ 24,000	\$ 65,000	\$ 375,000
<b>Contribution Margin</b>	\$ 34,375	\$ 187,362	\$ 117,500	\$ 175,750	\$ 242,000	\$ 44,750	\$ 6,563	\$ (10,000)	\$ 6,000	\$ 70,750	\$ 875,000
<b>Fixed Expenses</b>											
Salaries & Benefits											456,901
Consulting Fees											43,671
Rent											104,811
Transportation											26,203
Office supplies											17,469
Depreciation											93,356
Other											131,014
<b>Total Fixed Expense</b>											\$ 873,425

not only important to focus on the achieved contribution margin and bottom line, it's also important to ensure that the planned level of volume is achieved.

The importance of meeting the project volume is further highlighted because Medicaid rates don't increase and, as a result, aren't a means of increasing revenue. Further, annual Medicaid funding is capped, so attempting to increase volume over time to increase revenues isn't possible.

### **DISCRETIONARY FIXED COSTS**

Sheryl mentions that another area to focus on to achieve profit targets is a reduction in discretionary fixed costs. In order to use this avenue, it's necessary to understand the difference between committed fixed costs and discretionary fixed costs. Every organization has some costs to which it is committed, for example, costs for facilities, equipment, long-term debt arrangements, or organizational strategy. Lease payments, interest payments on long-term debt, property taxes, and salaries of key personnel may only change if a major shift in the scope of operations occurs. These costs are viewed as committed fixed. The lease payments or interest payments, for example, have to be made in order for the organization to stay in operation. A failure to pay a lease payment may result in the loss of an asset or a failure to pay interest to bondholders may result in the bondholders taking over the business. Depreciation, while an allocation of historic costs, usually follows a pattern set at the time of the asset acquisition.

Discretionary fixed costs, on the other hand, are set because management has decided to incur these costs to meet organizational goals. These costs may vary at the discretion of management. Managers, in the short-run for example, could vary advertising, travel, employee training, office supplies, or research and development costs. In dire times, these costs could be decreased, and in abundant times they could be increased. Usually the discretionary fixed costs may be changed to meet short-run cost concerns, but it's usually unwise to reduce all discretionary completely or for long periods of time. Who would want to work for an organization that reduced its training costs to zero year after year just to improve the bottom line? While reducing advertising costs in the short-run might not hurt revenues, what about the long-run effects on revenues? Perhaps out-of-state travel could be trimmed in the short-run, but would the failure to attend national professional meetings out-of-state eventually have an unfavorable effect on organizational performance?

In the Bridgestone Behavioral Health Center case, depreciation or rent may be committed while others (such as salaries and benefits, consulting fees, transportation, office supplies, and other) may be discretionary. Sheryl encourages Thomas to identify which fixed costs are discretionary and which are committed. He then can make a modest reduction in the discretionary fixed costs to achieve Bridgestone's profit objective. This will also give him an idea of how "discretionary" the identified fixed costs are in reality and whether the level can be reduced in the long-term or short-term.

### **OFF-CAMPUS PROGRAMS**

Other behavioral health centers that Sheryl has consulted for have increased revenue by offering off-campus programs to corporations, governmental departments, or other nonprofit corporations. Possibilities include employee assistance programs (EAP) to deal with alcohol or other drug disorders or behavioral health counseling or other kinds of programs. According to the United States Department of Health and Human Services, mental illness causes more days of work loss and work impairment than many other chronic condition, such as diabetes, asthma, and arthritis.<sup>1</sup> Approximately 217 million days of work are lost annually due to productivity decline related to mental illness and substance abuse disorders, costing United States employers \$17 billion each year.

To provide services such as these, the idea is to use Bridgestone talent, but at the client's premises or a location selected by the client (to ensure anonymity). These would be companies that could pay for these services. If the services are used on a regular basis, they could be a supplemental and steady source of revenue with high contribution margins. Really large companies may be able to afford EAP or counseling programs, but smaller ones can't, so this type of contract would be attractive to boost employee benefits at a minimum cost. The cost to these companies could be a variable one (based on usage) without incurring the fixed cost of hiring permanent staff to do the counseling. It could be an advantage to Bridgestone because the Center is already incurring the fixed salary expense of the counselor.

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1 U.S. Department of Health and Human Services. Mental Health: A Report of the Surgeon General — Executive Summary. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health; 1999. Available online at: <http://www.surgeongeneral.gov/library/mentalhealth/home.html>.

Various services that could be offered include:

- Support management in addressing issues of productivity and absenteeism that may be caused by mental health or substance abuse problems.
- Support effective supervisory practices
- Assist employees with deteriorating performance relating to behavioral or other health problems
- Address work-related issues influencing disability or return to work
- Assist in the identification of stress-related problems that may be a result of work organization
- Assist the organization in its response to drug-free workplace policies and regulations and disaster and terrorism preparedness as it relates to psychosocial issues
- Serve as an internal consultant to management regarding issues of employee behavioral health.

## REQUIREMENT

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In business memo format addressed to Dr. Thomas Russell, Executive Director of Bridgestone Behavioral Health Center, describe why the Center is appearing to barely break even and what might cause decreases in financial performance. What recommendations would you offer to Dr. Russell for improving the current operation of the Center and how he can effectively monitor the Center's future performance? Included in your memo should be a discussion about the following points:

## ISSUES FOR DISCUSSION

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1. What is the weighted average contribution margin (WACM) percentage for Bridgestone's next annual budget?
2. What does a high weighted average contribution margin (WACM) percentage mean for the management of Bridgestone?
3. Is Bridgestone able to *plan* for breakeven or a modest over-recovery of expenses (or profit) for the next year? If the Center achieves breakeven or a modest over-recovery and you are concerned about events that could cause a potential loss, what would you try to change? (You may consider both on- and off-campus programs.)
4. A useful component of CVP analysis is the margin of safety for service revenue that can be calculated as a dollar amount (\$) or as a percentage (%). What is Bridgestone's project margin of safety for next year? Interpret your answer in terms of what it means to Dr. Russell.
5. Fixed costs can be discretionary or committed. Using your judgment based on the discussion in the case, identify which costs are likely to be discretionary. Assuming that management is able to decrease discretionary fixed costs by 10%, what would be the impact on Bridgestone's break-even point revenues?
6. As Bridgestone operates during the next year, do some services deserve more attention than others? (Hint: What is their relative contribution to the WACM % and to the total contribution margin? Which services?)
7. How can the budgetary weighted average contribution margin (WACM) percentage be used to help *control* the actual operations of Bridgestone?
8. If a budgetary weighted average contribution margin (WACM) percentage has been developed with an *expected* level of revenue and a *planned* fixed cost and the budgetary WACM percentage is in fact achieved in the next (future) time period, could the organization still face losses if the total revenue drops below the budgeted level or *total* fixed costs increase beyond the budgeted levels? Can you explain how losses still might occur even though the *planned WACM percentage* is being realized in the future time period?
9. Can you demonstrate with numeric examples how financial losses *might* occur? Describe the effects of the following three possible scenarios:
  - a. What is the financial impact if Bridgestone's group counseling unit of service *volume* decreases by 10% during the first quarter?
  - b. What is the financial impact if Bridgestone's *reimbursement rate* for group counseling service decreases by 10% during the first quarter?
  - c. What would be the financial impact, if any, if the *total* quarterly revenue remains the same but the quarterly Medicaid Revenue for Case Management *decreases* by \$48,000 (600 units of service at \$80 per unit) while quarterly Medicaid Revenue for Group Counseling *increases* by \$48,000 (1,600 units of service at \$30 per unit)? Note the change in volume changes total revenues, total variable costs, and contribution margin. Assume the unit price of Private Pay services in Group Counseling is the same as for Medicaid Services (\$30 per unit of service).
  - d. What is the financial impact if Bridgestone's fixed costs increase by 1% during the first quarter?

10. What are your *overall recommendations* for Bridgestone's management regarding the use of CVP analysis?
11. As accountants, it is common to focus on quantitative tools such as CVP analysis to increase the profitability of a business. But it is important for accountants to think outside of the box to identify avenues of increasing profitability. What suggestions could you provide to assist Bridgestone in increasing profitability?

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