An ROI Case Study

Metro Transit Authority

Measuring ROI for an Absenteeism Reduction Program

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Background

The Metro Transit Authority (MTA) operates a comprehensive transportation system in a large metropolitan area. Over 1,000 buses operate regularly, providing essential transportation to citizens in the metro area. Many passengers depend on the bus system for their commute to and from work, as well as other essential travel. MTA employs over 2,900 drivers to operate the bus system around the clock.

As with many transit systems, Metro has been experiencing excessive absenteeism with drivers and the problem continues to grow. Just three years ago, absenteeism was 7% compared to the most recent 3-month period of 8.7% - too excessive to keep the transit system operating in a consistent manner.

To ensure that buses run on time, a pool of substitute drivers are employed to fill in for unexpected absences. The number of drivers in the pool is a function of the absenteeism rate. At present, the pool consists of 231 substitute drivers. When the drivers in the pool are not utilized in a substitute assignment, they perform almost no essential work for the Transit Authority although they are required to report to work. When a substitute driver is used, there is usually a delay in the bus schedule, as the bus is late for subsequent stops.

Causes of Problems and Solutions

A Needs Assessment and Analysis was conducted using focus groups, interviews, and an analysis of Human Resources (HR) records. Focus groups included drivers and their supervisors. Interviews were conducted with supervisors and managers. HR records were examined for trends and patterns in absenteeism. The conclusions from the analysis are:

1. Individuals who are frequently absent have a pattern of absenteeism that dates back to the beginning of their employment and in most cases, was present in other employment situations.
2. Many of the absences could be avoided. The problem is primarily a motivation and discipline issue.
3. The prevailing attitude among employees is to take advantage of the system whenever possible, up to the threshold of being terminated.

As a result of these findings, Metro initiated two processes:

1. **A No Fault disciplinary system was implemented.** With this policy, an employee who experiences more than six unexpected (unplanned) incidences in a six-month time frame is terminated – no questions asked. A sickness that extends more than one day is considered to be one incidence. Thus, the policy will not unfairly penalize those who are absent for legitimate sickness or for scheduled surgery and other medical attention. The No Fault system was implemented after extensive negotiations with the union. When union officials realized the impact of problems caused by excessive absenteeism, they agreed with the new policy.
2. **The selection process for new drivers was modified.** During the initial screening, a list of questions was developed and utilized to screen out applicants who have a history of absenteeism dating back to their high school days. The questions, with scoring and interpretation, were added to the current selection process and required approximately 30 minutes of additional time during the initial employment interview.

To bring appropriate attention to the absenteeism issue and generate results as soon as possible, both initiatives were implemented at the same time.

Objectives of the Initiatives

The expected outcomes were established early in the form of implementation and impact objectives. The objectives of the two initiatives were to:

1. Communicate the No Fault policy, including how the policy is applied and the rationale for it.
2. Experience little or no adverse reaction from current employees as the No Fault absenteeism policy is implemented.
3. Maintain present level of job satisfaction as the absenteeism initiatives are implemented and applied.
4. Utilize the new screening process for each selection decision so that a systematic and consistent selection process is in place.
5. Implement and enforce the No Fault policy consistently throughout all operating units.
6. Reduce driver absenteeism at least 2% during the first year of implementation of the two processes.
7. Improve customer service and satisfaction with a reduction in schedule delays caused by absenteeism.

Supervisors were required to conduct meetings with their employees to explain the need for the policy and how it would be applied. Supervisors completed a meeting report form after the meeting and returned it to Human Resources.

The No Fault policy has the potential of influencing employment termination, essentially increasing employee turnover, which could create problems for some supervisors.

Because of this, it was important to demonstrate to the management team that these programs are effective when they are administered properly. Also, senior management was interested in knowing the payoff for these types of initiatives; they need to be convinced that there is an adequate return on investment.

Questions for discussion:

1. Complete the attached Data Collection plan for this program.

2. What are feasible ways to isolate the effects of the program?

3. Can the cost of absenteeism be developed for Metro? What additional information is needed?

4. Which cost categories should be developed to determine the overall cost of initiatives?

5. Complete the attached ROI Analysis Plan.

Data Collection Plan

Evaluation Purpose: _____

Program: _____ **Responsibility:** _____ **Date:** _____

Level	Broad Program Objective(s)	Measures	Data Collection Method/Instruments	Data Sources	Timing	Responsibilities
1	**REACTION/SATISFACTION and PLANNED ACTIONS** • Positive Employee Reaction to the No Fault Policy	• Positive reaction from employees	• Feedback Questionnaire	• Employees	• At the end of the employee meetings	• Supervisors
2	**LEARNING** • Employee understanding of the policy	• Score at least 70 on post test	• True/False test	• Employees	• At the end of the employee meetings	• Supervisors
3	**APPLICATION/ IMPLEMENTATION**					
4	**BUSINESS IMPACT**					
5	**ROI**	Comments:_____ _____ _____ _____				

ROI Analysis Plan

Program: _____ **Responsibility:** _____ **Date:** _____

Data Items (Usually Level 4)	Methods for Isolating the Effects of the Program/ Process	Methods of Converting Data to Monetary Values	Cost Categories	Intangible Benefits	Communication Targets for Final Report	Other Influences/ Issues During Application	Comments
			Screening Process No Fault Policy		• Senior management • Managers and supervisors • Union representatives • HR staff	• Concern about supervisors consistent administration • Partner with Union reps on how to communicate results of study to employees	

Data Collection

Exhibit 1 shows the Data Collection Plan for the absenteeism reduction initiatives at Metro Transit Authority. The objectives are defined and the data collection methods selected typical for these types of programs. For Level 4 data, absenteeism is monitored on a post-program basis and compared to pre-program data. **Table 1** shows the absenteeism for the year prior to and after implementing both the No Fault policy and the new selection process. A complete year of data was collected to show the full impact of both initiatives to capture the delayed effect in influencing the absenteeism measure. In addition, schedule delays of more than 5 minutes caused by unexpected absenteeism was monitored and is reported in Table 1.

	Unscheduled Absenteeism *Percent of Scheduled Days Worked*		**Absenteeism Related Bus Delays** *Percent of All Delays*	
	PRE	**POST**	**PRE**	**POST**
July	7.2	6.3	23.3	18.3
August	7.4	5.6	24.7	18.0
September	7.1	5.0	24.9	17.5
October	7.8	5.9	26.1	18.2
November	8.1	5.3	25.4	16.7
December	8.4	5.2	26.3	15.9
January	8.7	5.4	27.1	15.4
February	8.5	4.8	26.9	14.9
March	8.6	4.9	26.8	14.7
April	8.5	4.9	27.8	14.4
May	8.8	4.0	27.0	13.6
June	8.8	4.9	26.4	13.7
Three Month Average	8.7%	4.8%	27.1%	13.9%

Table 1 - Absenteeism and Bus Delays Before and After Implementation

Also, for Level 3 and 4 data, a questionnaire was developed and administered to a sample of supervisors to determine the extent to which the programs have been implemented and are perceived to be operating effectively. Input was sought on problems and issues as well as success stories and changes in job satisfaction.

Data Collection Plan

Evaluation Purpose: _____

Program: Absenteeism Reduction **Responsibility:** Jack Phillips **Date:** January 15

Level	Broad Program Objective(s)	Measures	Data Collection Method/Instruments	Data Sources	Timing	Responsibilities
1	**REACTION/SATISFACTION and PLANNED ACTIONS** • Positive Employee Reaction to the No Fault Policy	• Positive reaction from employees	• Feedback Questionnaire	• Employees	• At the end of the employee meetings	• Supervisors
2	**LEARNING** • Employee understanding of the policy	• Score on post test, at least 70	• True/False test	• Employees	• At the end of the employee meetings	• Supervisors
3	**APPLICATION/ IMPLEMENTATION** 1. Effective and consistent implementation and enforcement of the programs 2. Little or no adverse reaction from current employees regarding No Fault policy 3. Use the new screening process	1. Supervisors' response on program's influence 2. Employee complaints and union cooperation	1. and 2. Follow-up questionnaire to supervisors (2 sample groups) 3. Sample review of interview and selection records	1. Supervisors 2. Company records	1. Following employee meetings, sample 1 group at 3 months and another group at 6 months 2. Three mos and six mos after implementation	• HR Program Coordinator
4	**BUSINESS IMPACT** 1. Reduce driver absenteeism at least 2% during first year 2. Maintain present level of job satisfaction as new policy is implemented 3. Improved customer service and satisfaction with reduction in schedule delays	1. Absenteeism 2. Employee Satisfaction 3. Delays impact on customer service	1. Monitor absenteeism 2. Follow-up questionnaire to supervisors 3. Monitor bus schedule delays	1. Company records 2. Supervisors 3. Dispatch records	1. Monitor monthly and analyze 1 year pre and 1 year post implementation 2. Three months and six months after employee meetings 3. Monthly	• HR Program Coordinator
5	**ROI** Target ROI ➧ 25%	Comments:_____ _____ _____				

For Level 2 data, learning was measured with a simple ten item, true/false test. To ensure that employees have an understanding of the policy, the test was developed to be administered by supervisors in their meetings with employees. The scores were attached with the record of the meeting, which also noted the time, place, and agenda for the meeting along with a list of the attendees. A sample of the test scores revealed an average value above the minimum acceptable level of 70.

For Level 1 data, reaction was measured with a simple questionnaire using an objective format. The Level 1 questionnaire was distributed at the meetings to obtain reaction to the No Fault policy.

Exhibit 2 shows the ROI analysis plan for evaluation of the absenteeism reduction initiatives. Major elements of the plan are discussed below.

Isolating the Effects of the Initiatives

Several approaches were considered to isolate the effects of the two initiatives. At first, a control group arrangement was considered but was quickly ruled out for three important reasons:

1. To purposefully withhold the policy change for a group of employees could create contractual and morale problems for the individuals in the control group.
2. Since all employees would know the new policy, contamination would occur in the control group. The policy would have the effect of reducing absenteeism in those areas where it is not implemented.
3. Because of the operational problems and customer service issues associated with absenteeism, it was not desirable to withhold a needed solution – just for experimental purposes.

Trend line analysis was initially feasible since only a small amount of variance was noticeable in the pre-program trend data that had developed. Because of the possibility of this option, in the planning stage, trend line analysis was considered as a method to estimate the impact of both absenteeism initiatives. However, because multiple influences on absenteeism later developed, such as a change in economic conditions, the trend line analysis was aborted.

Finally, as a back up strategy, estimations were taken directly from supervisors as they completed the follow-up questionnaire. Supervisors were asked to identify various factors, which had influenced the absenteeism rate and allocate percentages to each of the factors, including the new screening process and no fault policy.

ROI Analysis Plan

Program: Absenteeism Reduction **Responsibility:** Jack Phillips **Date:** January 15

Data Items (Usually Level 4)	Methods for Isolating the Effects of the Program/ Process	Methods of Converting Data to Monetary Values	Cost Categories	Intangible Benefits	Communication Targets for Final Report	Other Influences/ Issues During Application	Comments
1. Absenteeism	1. Trend line analysis and Supervisor Estimates	1. Wages & benefits and standard values	Screening Process • Development • Interviewer preparation • Administration • Materials No Fault Policy **No Fault Policy** • Development • Implementation • Materials	• Sustain employee satisfaction • Improve employee morale • Improve customer satisfaction • Fewer disruptive bottlenecks in transportation grid • Ease of implementation by supervisors	• Senior management • Managers and supervisors • Union representatives • HR staff	• Concern about supervisors consistent administration • Partner with Union reps on how to communicate results of study to employees	
2. Employee Job Satisfaction	2. Supervisor estimates	N/A					
3. Bus Schedule Delays (Influence on Customer Satisfaction)	3. Management estimates	N/A					

Converting Data to Monetary Values

Since the primary business measure is absenteeism, a monetary value had to be developed for the cost of an unexpected absence. The value could subsequently be used to calculate the total cost of the absenteeism improvement. While there are several approaches to determine the cost of absenteeism, the analysis at Metro was based on the cost of replacement driver staffing.

Substitute drivers, as well as the regular drivers, are expected to work an average of 240 days per year, leaving 20 days for vacation, holidays, and sick days. The average wages for the substitute drivers is $33,500 per year and the employee benefits factor is 38% of payroll. When a regular driver is unexpectedly absent, he or she may charge the absence either to sick leave or vacation, thus substituting a planned paid day (vacation) for the unexpected absence.

The substitute driver staffing is not always the exact level needed for a specific days unscheduled absences. The number of substitute drivers is planned as a function of expected absenteeism. Because of the service problems that can develop with under staffing, for most days, there is a planned excessive number of substitute drivers. To minimize potential delays, all substitute drivers are required to report to work each day. Substitute drivers not utilized in driver seats essentially perform no productive work that can be counted as added value. During the previous year, over staffing occurred about 75% of the time for weekdays and non-holidays. This overstaffing represented 4,230 days of wasted time. During the weekends and holidays, which represent 114 days, over staffing occurred almost half of the time representing a total of 570 wasted days.

On some days, there is actually a shortage of substitute drivers, which causes the buses to run late and overtime must be used to make the adjustment. During the last year there were 65 instances where a driver was not available and it was estimated that in 45 of those situations, a regular driver was paid double time to fill in the schedule.

Average Daily cost of wages and benefits for a substitute driver
$33,500 X 1.38 ÷ 240 = $192.63
Cost of overstaffing, weekdays
192.63 X 4,230 = $814,800
Cost of overstaffing, weekends and holidays
192.63 X 570 = $109,800
Cost of understaffing, overtime (only one salary is used for double time pay)
192.63 X 45 = $8,670
Cost of recruiting, training, maintaining and supervising pool of drivers
33,500 X 231 X .25 = $1,934,600

Table 2 - Cost of Absenteeism

A final, and very significant, cost of absenteeism is the cost of recruiting, training, maintaining, and supervising the substitute driver pool, beyond the actual salaries and benefits. These items include recruiting and employment, training and preparation, office space, administration and coordination, and supervision. This item was estimated to be equal to 25% of the actual annual pay. Table 2 illustrates how the total direct cost of absenteeism is developed from the above information.

Costs for Initiatives

The cost for the new screening process contains four components:

1. Development
2. Interviewer preparation
3. Administrative time
4. Materials

The total development cost, including pilot testing, was $20,000. An additional $5,000 was charged for preparing the interviewers to administer the test. The materials and time are variable costs, depending on the number of drivers employed. Approximately 400 drivers are hired each year. For each new driver hired, an average of three candidates are interviewed. Thus, 1,200 interviews are conducted each year, with an average time of 30 minutes each. The average hourly wage for the interviewers is $14.50 per hour. The materials are $2.00 per test.

The cost for the no fault policy included development and implementation. The development cost was incurred internally and was estimated to be $11,000, representing the time of internal specialists. The material distributed to employees accounted for another $3,800. The costs of meetings with all supervisors and with employees were estimated at $16,500. The cost for routine administration was not included since the alternative to administer the no fault policy is to administer a progressive discipline process and the two should take approximately the same amount of time.

Results: Reaction, Learning, and Application

Employees expressed some concern about the new policy but the overall reaction to the change was favorable. They perceived the new policy to be fair and equitable. In addition, employees scored an average of 78 on the true/false test about the no fault policy. A score of 70 on the end of meeting test was considered acceptable.

A follow-up questionnaire, administered anonymously to a sample of supervisors, indicated that the policy had been implemented in each area and had been applied consistently. While supervisors reported some initial resistance from the habitual absenteeism violators, the majority of employees perceived the policy to be effective and fair. The supervisors also reported that the new policy took less time to administer than the previously used progressive discipline approach.

A review of Human Resources records indicated that 95% of the supervisors conducted the meeting with employees and completed a meeting report form. In addition, a review of a sample of interviews and selection records indicated that the new screening process was used in every case.

Business Impact

Absenteeism dramatically declined after the implementation of both processes, yielding an average absenteeism rate of 4.8% for the last 3 months of the evaluation period compared to the pre-program rate of 8.7% for the same period one year earlier. In the Metro situation, a reduction in absenteeism generates a cost savings only if the substitute driver pool is reduced. Since the pool staffing was directly linked to absenteeism, a significant reduction was realized. Table 3 shows the cost savings realized, using the approach to develop calculations described earlier in Table 2.

Cost Item	1 Year Prior to Initiatives	1 Year After Initiatives
Costs of overstaffing, weekdays	$814,000	$602,400
Costs of overstaffing, weekends and holidays	$109,800	$51,500
Cost of understaffing	$8,670	$4,340
Cost of recruiting, training and maintaining driver pool	$1,934,600	$1,287,750
Total cost of absenteeism	$2,867,070	$1,945,990

Table 3 - Cost of Absenteeism Comparisons

In addition, on the questionnaires, supervisors estimated and allocated percentages for the contribution of each factor to absenteeism reduction. The results are presented in **Table 4**.

Factor	Contribution Percentage	Confidence Percentage
No Fault Policy	67%	84%
Screening	22%	71%
Economic Conditions	11%	65%
Other	1%	90%

Table 4 - Supervisor estimates to isolate the effects of the initiatives

The bus schedule delays caused by absenteeism declined from an average of 27.1% for the 3 months prior to the initiatives to 13.9% for the last 3 months of the evaluation period.

In addition, several intangible measures were identified, including increased morale, improved customer service, and fewer bottlenecks in the entire system.

Questions for discussion:

1. Calculate the actual monetary benefits of the reduction in absenteeism from the combined impact of the no fault policy and screening process.

2. Develop the total cost for the first year of operation of the two initiatives.

3. Calculate the ROI, allocating all of the cost in the first year.

Monetary Benefits

Because the total cost of absenteeism for drivers is known on a pre and post basis (as shown in Table 3) the total savings can be developed as follows:

Pre Program	$2,867,070
Post Program	$1,945,990
Savings	$ 921,080

The contribution of the no fault policy:

$ 921,080 X 67% X 84% = $ 518,383 = $ 518,000

The contribution of the new screening process:

$ 921,080 X 22% X 71% = $ 143,873 = $ 144,000

Total First Year Benefit = $ 518,000 + $ 144,000 = $ 662,000

Costs

The total costs for both initiatives (shown in Tables 5 and 6) are as follows:

Total Costs = $ 36,100 + $ 31,300 = $ 67,400

Development Cost	$ 20,000
Interviewer Preparation	$ 5,000
Administrative Time (1200 X ½ X $14.50)	$ 8,700
Materials (1200 @ $2.00)	$ 2,400
TOTAL	$ 36,100

Table 5 - Cost of Screening Process

Development Cost	$ 11,000
Materials	$ 3,800
Meeting Time	$ 16,500
TOTAL	$ 31,300

Table 6 - Cost of No Fault Policy

ROI Calculation

The BCR and ROI are calculated as follows:

$$BCR = \frac{\$\ 662{,}000}{\$\ 67{,}400} = 9.82$$

$$ROI\ (\%) = \frac{\$\ 662{,}000 - \$\ 67{,}400}{\$\ 67{,}400} \times 100 = 882\%$$

Questions for discussion:

1. Could the absenteeism cost be developed in other ways? Explain.

2. Is the ROI value realistic? Explain.

3. How should the results be communicated to various groups?