Financial Analysis of the Implementation of a Gainsharing Plan in a Construction Firm

by

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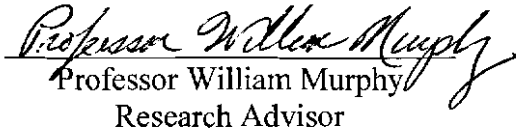

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ABSTRACT

The purpose of this study was to determine the financial impact of the implementation of a gainsharing incentive program for mid-level management employees of Company XYZ. Company XYZ is a residential construction company specializing in building luxury homes located in Milwaukee, WI. A gainsharing program was implemented for the company's estimators and project managers in an effort to improve profitability. A financial analysis was conducted to assess the company's performance in the two years before the gainsharing plan implementation in comparison to the same company's performance in the two years after the plan implementation. Limitations to the study include the uncontrollable variables in the construction industry, the length of the study, and the changing economic conditions during the study.

This research was conducted by reviewing relevant literature encompassing the history of gainsharing, the challenges of implementing gainsharing in the construction industry, and the

core principles of proven gainsharing programs. The literary review was followed by a thorough analysis of the company's job profit summary reports to determine the impact of the gainsharing plan implementation. A recommendation will be made on implementation of a gainsharing plan for a union construction company's labor force.

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Chapter I: Introduction

Background

Gainsharing is an employee incentive system designed to create continuous improvement within an organization. This incentive system involves "groups of employees in improving performance through better use of labor, capital, materials, and energy" (Boyett & Boyett, 2004, p.1). In return for the improved performance, the company shares part of the resulting savings from the performance gains with the employees in the form of a cash bonus. This cash bonus is based on a mutually agreed upon predetermined mathematical formula. "Employees must be able to impact the elements in the formula" (Pricone & Ricardo, 1996). It is important to note that the bonus is earned based on group performance, not individual performance. This factor helps promote teamwork and open communication. "Anytime that an owner/manager has tried to elicit more physical or mental effort from his employees in return for a financial reward, he/she is applying a form of gainsharing in the broadest of term" (Hauck & Ross, 1984). A well designed gainsharing program will give employees a sense of ownership in the company by giving each employee a vested financial interest in the production levels and profitability of the company. The financial incentive is a key catalyst for employee involvement and continuous improvement within the organization. Employee involvement is critical to the success of any gainsharing plan.

The history of gainsharing dates back to the 1930's. In their book The Gainsharing Design Manual Boyett and Boyett (2004) summarized the birth of gainsharing:

> Joseph Scanlon, a cost accountant and union official at the Empire Steel and Tin Plate Company in Mansfield, Ohio, developed the original concept. Faced with a company on the brink of bankruptcy, Scanlon persuaded company management and the union to cooperate in an effort to involve employees in generating ideas for improving productivity. Although there was no formal bonus system under the initial Empire plan,

> experience at Empire lead to the application of union/management cooperative efforts at other companies and eventually to the addition of a bonus system to encourage employees to find ways to improve productivity. (p.1)

Scanlon believed that the average worker was a major source of untapped information in regards to labor-saving methods (Graham-Moore & Ross, 1995, p.5). Scanlon-type plans are the most common form of gainsharing, although there are several other forms of gainsharing. According to Hauck & Ross (1984), the Scanlon plan is "attracting increasing interest from managers and behavioral researchers because of its heavy emphasis on quality of worklife variables such as involvement, recognition, feeling of achievement and so on." For the purpose of this paper, the term, gainsharing, will be referring to Scanlon-type gainsharing plans.

Over the years, gainsharing programs have been most commonly implemented in production based manufacturing environments. Gainsharing programs are not very common in the United States construction industry. This is ironic since there is a high demand for increased productivity and teamwork to meet the increasingly high demands of the highly competitive construction industry. One might think that the construction industry would embrace the idea of a gainsharing program in an effort to improve these factors. Kim (2005) noted that a gainsharing plan would be a good fit for most construction firms due to the labor intensiveness of the work involved. According to Graham-Moore & Ross (1995, p.95), "the construction industry in the U.S. has, with negligible exception, failed to adopt some form of incentive program to further its productivity." Studies to determine the lack of gainsharing programs in the U.S. construction industry have identified three main reasons: tradition and conservatism of the industry, the nature of the work, and union opposition (Graham-Moore & Ross, 1995, p.97).

The conservatism is caused by the high level of risk that is associated with many construction projects. Construction leaders would prefer to rely on proven methods of

performance, rather than trying an idea for the first time that might be more efficient in the long run. Graham-Moore and Ross (1983, p.98) noted the cause of the construction industry's conservatism, "typical causes related to tradition and conservatism are lack of experience and the absence of proven success." One mistake can sometimes cause a construction project to be a complete failure. Because of this uncertainty, construction leaders are not as receptive to new ideas. Manufacturing environments tend to be more suitable for trial runs to test the effectiveness of a new idea. Many manufacturing firms have research and development departments to test new ideas and new systems. These same research and development departments do not exist on construction projects for the most part. Construction activities can involve a series of one time events and trial runs are not feasible in most instances. A study by Graham-Moore and Ross (1983, p.97) noted that the nature of the construction industry provides a challenge to implementing a gainsharing plan, "the findings clearly demonstrate that some difficulties of implementing certain types of financial incentive programs stem from the specific nature of construction." Another significant reason for the conservatism in the construction industry is the scheduling deadlines that are incorporated in many construction projects. Many high profile construction project contracts include stipulations for completion dates. Typically, the construction contractor will incur severe financial penalties for every day, week, or month that the project exceeds the agreed upon completion date. This high risk leads many construction leaders to error on the side of conservatism when considering new ideas and causes them to rely on historically proven methods to accomplish there objectives on a construction project. Graham-Moore and Ross (1983, p.98) described this conservatism as "the general unwillingness of the industry to try new radical approaches."

The nature of the work in the construction industry is unpredictable and relatively short term. Factors such as weather, soil conditions, and labor relations can have significant impacts

on the profitability of a project. These unpredictable variables can make it difficult for management to identify when gains are taking place. Most construction projects take place outdoors where productivity can be affected by uncontrollable environmental conditions. Weather conditions such as extreme heat, extreme cold, rain, wind, and snow can make a significant negative impact on the productivity of a construction project. It can be difficult to quantify the difference in lost productivity due to weather conditions and employee performance. Graham-Moore and Ross (1983, p.98) emphasized the challenges faced in the construction industry, "difficulty of establishing standards for all possible circumstances, difficulty in measuring output because of the mixture of quantity and quality, and the significant variations in the working conditions over which the worker has no control." Most construction projects last between a few months to a few years, at the most. This factor can make construction leaders unreceptive to investing in their employees in a gainsharing plan due to this short term vantage point. A successful gainsharing program must be implemented with a vision for long term goals and long term success. On many large commercial construction projects, many of the workers are temporary for the duration of the project. This causes resistance on the worker's part to participate in bringing new ideas to the table. Workers have the mindset that once the existing project is completed, they will move on to a new project with a different company and management team. This attitude is very prevalent in multi-million dollar union construction projects. Gaffney, Sears, & Seeber (2005) suggested that the main challenges are due to the dependence upon a mobile workforce and the relatively short-term nature and intensity of most project work.

Union opposition to gainsharing plans can be attributed to two main factors, a lack of trust between labor and management and a lack of complete understanding of the benefits that a successful plan could ultimately provide. As Collins (1998, p.2) stated, "implementing

gainsharing is a threat to management power and union power and to traditional relationships between management and workers because each group's interests are being redefined." Union leaders have fears that by management trying to increase production, they are ultimately attempting to reduce the workforce and eliminate jobs for union members. "Scanlon and his colleagues believed that dysfunctional conflict between unionized employees and managers was a primary inhibitor of improved firm performance" (Arthur & Jelf, 1999). Collins (1995a) noted that "adversarial managers regard employee involvement as a threat to their power and fear gainsharing will increase the power of some nonmanagement employees whom they believe are either untrustworthy or unqualified for this added responsibility." Gainsharing differs from traditional thinking. "Gainsharing is a change from traditional class structures. In terms of class interests, both management and nonmanagement opponents perceive gainsharing as a threat to dismantling the previously agreed upon boundary lines between the duties of management and labor" (Collins, 1995a).

Union officials also express concerns over the effect that a gainsharing plan will have on safety. They argue that by stressing productivity, safety will be compromised and workers could be put in danger. A study by Collins (1995a) contradicts this theory. The study showed that plant safety improved due to equipment improvements that were triggered by an employee suggestion program as part of the implemented gainsharing plan.

Historically, union leaders have pushed for increases in hourly wages and benefits for the workers and employee incentive plans has not been something of interest to union representation. A study by Graham-Moore and Ross (1983, p.109) examined the attitudes toward gainsharing by management, labor, and union and reported, "the contractors and owners with a positive attitude, the employees somewhat supportive, and the union opposed." Typically, union leaders will meet with the construction company's management before the commencement of a large construction

project to determine the number of employees each trade will have on the project. The trades include laborers, carpenters, iron workers, boilermakers, operators, etc. Management presents there plan for the number workers in each trade that will be needed for the project based on their estimated budget for the project and each particular phase of the project. The union stewards counter management's plan with a plan of their own. The two sides negotiate to determine a mutually agreeable allotment of workers for each trade for the project. This system is not conducive to the implementation of a gainsharing plan. The intent of a well designed gainsharing plan is to maximize the production output of the workforce. In this scenario, the goal of union leadership is to maximize the number of workers on a project. Union leaders see a gainsharing plan as a detriment to this goal. Adams, Hatcher, and Ross (1985) revealed union representations' mindset "there is a fear that management will violate the spirit of cooperation by laying off employees after productivity gains are made." This struggle between management and union representation is an obstacle to the successful implementation of a gainsharing plan. In this situation, the focus is on the quantity of the workforce. A well designed gainsharing plan would take the focus away from the size of the work force and put the emphasis on the quality of the workforce. "If unionized, as with all other employee involvement systems, the union must "buy into" the system or it won't work" (Hauck & Ross, 1984). A study by Adams, Hatcher, & Ross (1985) identified five main reasons why unions may oppose gainsharing plans: management may try to substitute if for wages, management can not be trusted, peer pressure to perform may increase, bonus calculations are not understood or trusted, and union influence is undermined. The same study by Adams, Hatcher, & Ross (1985) identified five main reasons why unions may support gainsharing plans: increased recognition, better job security, increased involvement in job activities, more money, and increased feeling of achievement of contributing to the organization.

Adams, Hatcher, & Ross (1985) identified four positions taken by national unions in regards to recommending gainsharing programs to local unions: general opposition, decentralized neutrality, decentralized policy with national union support, and support from the president. When there is general opposition, local unions are discouraged, but not prevented, from participating in the plan. In the case of decentralized neutrality, "national leaders do not take a stand on gainsharing plan involvement, but do offer guidelines to respond to employers to discuss having a plan. National union officials other than the president advocate worker participation in a gainsharing plan when there is a decentralized policy with national union support. When the union president supports a gainsharing plan, the president will go on record as advocating worker participation and will provide support to train local union leaders in integrating worker participation" (Adams, Hatcher, & Ross, 1985). Very few unions fit the description of being supported by the president.

A gainsharing plan can have benefits specifically for the union in addition to the benefits for the employees and the company as identified by Adams, Hatcher, & Ross (1985). Companies with gainsharing plans are more likely to focus on the long term interest of its employees. The gainsharing plan will allow the company to retain employees during down times and to generously reward the employees during prosperous times. The firm is allowed to do this due to the flexibility of the gainsharing plan. Base wages are kept at a level that a company can afford to pay during a business downturn. The modest base wage is offset by the generous bonus that is paid during profitable periods. Employment stability of its members is in the best long term interest of the union members. "A union that actively has supported a successful gainsharing plan probably will find itself in a better bargaining position during negotiations" (Adams, Hatcher, & Ross, 1985).

Kim (1999) emphasized the importance of union support in gainsharing, "union support

and participation provide an important mechanism to enhance the viability of gainsharing by using the full potential of employee's collective input into the gainsharing program." Many believe that a well designed gainsharing plan will have a positive impact on a union labor force by bringing the labor force and management team together. A gainsharing plan has the potential to have a positive effect in a union facility, although it will likely take more time to implement as in contrast to a non-union facility. Additional time may have to be spent developing the trust and employee involvement which seems to facilitate the decision to implement the plan. As Arthur & Jelf (1999) stated, "the plan's formal employee suggestion program and the joint labor-management committee structured provides a means for improved positive communication and information sharing between employees, unions, and managers outside of the traditional grievance and collective bargaining structures." A study by Arhur & Jelf (1999) showed that the implementation of a gainsharing plan had a positive effect on labor-management relations, specifically on grievance rates and absenteeism. The study showed that grievance rates and absenteeism steadily declined over the five year period after the implementation of the gainsharing plan. Although the company's profitability was uneven over this period from year to year, the long term effect was that the company's profitability increased from when the plan was first implemented. This study suggests that a well designed gainsharing plan will ultimately lead to increased profitability due to continuously improved employee performance and behaviors, although these results may not be visible in the short term due to certain variables and market conditions. Arthur and Kim (2005) emphasized the importance of trust between union and management, "the existence of this resilient trust allows employees to continue to share innovative cost-saving suggestions with management even in the absence of a specific economic exchange outcome."

Statement of the Problem

The construction industry has become increasingly specialized in recent years. In the past it was typical for a construction company to hire a construction professional with multiple responsibilities including sales, design, estimating, project management, and quality control. Today companies are hiring individual specialists in each area to form a construction team. This construction team consists of business development sales specialists, estimators, construction managers, and an administrative staff. The advantage of this approach is that it allows individuals to become experts in their particular department. There are several disadvantages to this departmentalized approach. Costly errors are made due to improper communication between departments. Employees become more concerned about the individual goals of their department instead of the overall goals of the company as a whole. Employees are more concerned with not being blamed for problems instead of finding solutions to problems. An incentive plan needs to be implemented that will promote teamwork and continuous improvement. This plan will cause each employee to take an ownership mentality and work towards a common goal. Pricone and Recardo (1996) pointed out that interdependence of the workforce is one of the seven key variables in assessing the feasibility of gainsharing. "Gainsharing works best in organizations that have highly interdependent operations and work processes." This point suggests that Company XYZ is a good fit for a gainsharing plan. The company has several different departments that work together to achieve a common goal.

The Purpose of the Study

The purpose of this study is to determine the financial impact of the implementation of a gainsharing incentive program for mid-level management employees of a construction general contractor. The intent of the study is to show that a gainsharing plan can be effectively implemented into a construction management firm. Historically, there has been a perception that gainsharing plans are intended for the manufacturing industry and not for the construction industry. This study will investigate several possible variables which impact the success of Company XYZ's gainsharing plan.

Company XYZ is a general contracting firm located in Milwaukee, WI that was established in the 1960's and specializes in high end residential construction. Today, the company's core business is centered on building fifteen to twenty-five single family homes per year ranging in price from $500,000 to $4,000,000. In addition to building single family homes, Company XYZ also builds light commercial office buildings and does remodeling work including home additions and finished lower levels. The firm consists of fourteen employees that can be classified into one of three categories: senior management, mid-level management, and an administrative staff. Senior management is comprised of the two principle owners of the company. Mid-level management consists of three project managers and two project estimators. A gainsharing program was implemented for estimators and project managers in an effort to increase the overall profitability of Company XYZ. Profitability will be increased by improving accuracy and detail of job cost estimates and therefore improving the Anticipated Profit Percentage (APP). The APP is the profit percentage that the company anticipates making on the particular project based on the total contract price. The APP is calculated by subtracting the contractor's cost on a project from the total contract price of the project and dividing that number by the contractor's cost on the project. Profitability will also be increased by reducing the Total

Project Loss (TPL) on each job. The TPL is the amount of profit that is lost on a job due to negative internal change orders and warranty claims. The loss factor will be reduced by improving communication between estimators and project managers, and reducing the company's negative internal change orders on each project. The TPL will also be reduced by project managers demanding top quality from subcontractors and reducing the amount of call back warranty claims on each project. A call back is warranty work that is done on a completed project after the project has been closed due to some type of installation or material defect. A comprehensive one year warranty on all material and labor is standard in the state of Wisconsin for residential construction. Various products will have much longer warranties and these are provided by the material manufacturer. Some residential general contractors will extend the comprehensive warranty beyond one year at their discretion in an effort to create a reputation of superior customer satisfaction. The hard costs of call backs can fall on the shoulders of the general contractor, the labor supplier, or the material supplier, and sometimes a combination of the three. Regardless of which party is directly responsible for the hard costs of warranty callbacks, all call backs cost the general contractor financially due to the time that is involved with administering and managing the call back resolutions. A typical callback will require a project manager to make a trip to the site to determine the source of the problem. The project manager will then expedite the repair or remedy to the problem and follow up upon completion to verify that the problem has been fully addressed to the customer's satisfaction. A successful gainsharing plan will reduce the percentage of callbacks on each project. This will lead to increased customer satisfaction and will also save Company XYZ's warranty expenses and associated costs to manage such warranty issues. Regardless of who is responsible for the hard cost of the warranty claim, the general contractor will incur costs in managing and administering the warranty claim.

Research Objectives

This research addressed the following objectives:

1. Identify the effect of the gainsharing implementation on the APP caused by improved estimating accuracy.
2. Identify the effect of the gainsharing plan implementation on the TPL caused by negative internal change orders and warranty claims on each project.
3. Identify the effect of the gainsharing plan on the overall profitability of each project.
4. Provide recommendation on whether a gainsharing plan should be implemented for a union construction firm for the labor force.

Justification of the Study

1. The construction industry is an extremely competitive business with narrow profit margins. The performance of estimators and project managers have an extremely critical effect on the profitability of a particular project. A well implemented gainsharing plan will improve estimating accuracy on each project, reduce the amount of errors on each job, and improve communication between estimating and project management of each project and subsequently, overall profit margins will be increased.

2. The construction industry can be a very volatile business with a high employee turnover rate. The cash bonus aspect of the gainsharing plan will increase employee job satisfaction by making them feel that they have a vested interest in the daily operations of the company. This will result in less employee turnover and a more stable company that can develop successful systems and continuity. A successful construction company will invest a significant amount of money into employee training due to the knowledge and expertise that is required in this particular field. There is a high learning curve in the construction industry and experience is a vital learning tool. By minimizing employee turnover, a company will be able to

significantly reduce their employee training costs and also provide a better experience for its customers. Low employee turnover will lead to increased customer satisfaction, ultimately leading to higher profitability for the company.

4. Historically, most gainsharing plans have been implemented for production level employees. This study will focus on the implementation of a gainsharing plan at a mid-management level. The study will determine what effects the implementation of the gainsharing plan will have on employee involvement and the overall financial performance of the company.

Limitations of the Study

1. There are many variables that can affect the profitability of the construction industry. These variables can include weather, human error, and customer expectations. These factors can not always be predicted or controlled and can have a major impact on the profitability of a construction project.

2. The study was based on two 2-year periods of time, two years before the gainsharing plan was implemented and two years after the gainsharing plan was implemented. It is possible that a larger sample of years would provide more accurate results. According to Boyett & Boyett (2004), approximately half of all gainsharing programs survive less than five years with many losing their effectiveness after the first year or two.

3. The state of the economy can affect the profitability of a construction industry. It is possible that this could impact the profitability of a construction project and this would not be identified in this study.

Definition of Terms

Boilermaker. A person employed to make or repair boilers or other heavy metal items (Dictionary.com.Online).

Carpenter. A person who builds or repairs wooden structures, as houses, scaffolds, or shelving (Dictionary.com.Online).

Construction Manager. One who directs the process of construction, either as the agent of the owner, as the agent of the contractor, or as one who, for a fee, directs and coordinates construction activity carried out under separate or multiple prime contracts (RS Means Dictionary.Online).

Contractor. A constructor who is a party to the contract for construction, pledged to the owner to perform the work of construction in accordance with the contract documents (RS Means Dictionary Online). .

Estimator. One who is capable of predicting the probable cost of a building project (RS Means Dictionary.Online).

General Contractor. For an inclusive construction project, the primary contractor who oversees and is responsible for all the work performed on the site, and to whom any subcontractors on the same job are responsible (RS Means Dictionary.Online).

Iron Worker. A craftsman skilled in assembling structural steel or concrete reinforcing steel (RS Means Dictionary.Online).

Laborer. Ordinarily denotes a construction worker who has no specific trade and whose function is to support the activity of the licensed trades (RS Means Dictionary.Online).

Negative Internal Change Order. An increase in the cost of a construction project after the construction contract is signed that can not be passed on to the client.

Operator. Person who operates heavy machinery or vehicle on a construction site including cranes, all-terrain lifts, and bull dozers.

Productivity. Work performed per unit of time, or time to perform unit of work, such as square feet per hour (RS Means Dictionary.Online).

Project Manager. The individual designated by the principal-in- charge to manage a given project. Normally includes administrative and technical responsibilities (RS Means Dictionary.Online).

Research and Development. Creative work undertaken on a systematic basis in order to increase the stock knowledge, including knowledge of man, culture, and society, and the use of this stock knowledge to devise new applications (Wikpedia.com.Online).

Union. A confederation of individuals who share the same trade or similar trades and who have joined together for a common purpose (RS Means Dictionary.Online).

Union Steward. A union official elected to represent members of a particular trade or department. Position responsibilities include soliciting new members, collecting dues, and initial negotiations for grievances (RS Means Dictionary.Online).

Total Project Loss. The sum of negative internal change orders on an individual project.

Chapter II: Literature Review

Introduction

Financial analysis of a gainsharing plan necessitates a clear understanding of the core principles of gainsharing. This chapter will focus on the core principles that will allow a gainsharing plan to be implemented, to prosper, and sustain itself long term. The differences which distinguish true gainsharing and traditional compensation plans must be defined.

Core Principles

According to Boyett & Boyett (2004, p.2), the following principles are vital to the success of any gainsharing program: open-book management, employee involvement, and equity.

Open-book management is essential to an effective gainsharing plan. Management must be willing to share privileged company information with its employees. This includes financial information, company goals, and thoroughly educating the employees on all aspects of the company's operations. A company must be willing to clearly communicate its objectives. While organizations may attempt to communicate their goals, clarifying how the individual can match personal goals with these team goals requires a continuous education (Graham-Moore & Ross, 1995). For a gainsharing plan to be successful, it is important for the employees to have the mindset of having ownership in the company. Open-book management is a key factor in developing this employee ownership culture and mindset. Each employee must fully understand the company's current financial status. This creates trust and sets a benchmark for improvement and a reference point for the vision of where a company wants to go. A gainsharing system should be as simple as possible and easy to understand by all employees, not just by accountants and upper management. By sharing financial information with the employees, the employees will

begin to fully understand the impact that their performance has on the overall success or failure of the company.

Another critical aspect of an effective gainsharing plan is employee involvement. Management must have the confidence and be willing to allow the employees to have a significant input into the operations of the company. Gainsharing plans that are implemented with employee input have a far better chance of survival than those that are implemented without employee input. As Kim (1999) noted, "programs implemented through employee majority approval in a vote are found to have been more persistent than those without such a vote." Gaffney, Sears, & Seeber (2005) noted that ensuring a free exchange of information among all individuals is key to the success of gainsharing implementation. Boyett & Boyett (2004, p.2) emphasized the importance of management's importance,"a company must have a commitment on the part of management to teams, participative management, flat organizations, training, job enlargement, organizational learning and a willingness to listen to and act upon employee suggestions." As Graham-Moore & Ross (1995, p.14) stated, "increasing the employee's awareness of his or her responsibility for achieving a fiscally sound and competitive organization is essential if both the employee and firm are to fulfill themselves." A study by Kim (1996) revealed a linkage between employee input on plan design and the overall success of the plan. "Gainsharing implementation by employees' majority approval had significant and positive relationships with quality improvement, cost reduction, and improvement in the production process" (Kim, 1996).

The final core principle is equity. Management must be accountable and balance the interests of both the customers and the employees. "The main challenge is to infuse enough risk in the compensation package to create a "common fate" between employees and the firm, without shifting so much risk to them that they become overly cautious in their behavior and

decision making, resulting in even lower performance than would otherwise be observed in the absence of such plans" (Gomez-Mehia, Welbourne, & Wiseman, 2000). A company must be committed to the equitable sharing of financial rewards that flow from employee input and creativeness. Woods, (1989) pointed out how equity was emphasized in a gainsharing plan implemented for an aviation depot. "The plan's goals include improving intershop cooperation and communication and involving workers at all levels, the committee decided to pay the same amount to every employee in the plant; lower level workers are recognized along with their supervisors, improving teamwork and cooperation between labor and management" (Woods, 1989). A mutual trust must be created between employees and management. Each party needs to make a commitment to give something and trust that the other party will reward their initial investment. Under a gainsharing plan, when the work force makes financial performance improvements, the company shares the benefits with them. It is important that the reward is paid out in close time proximity of the gain taking place so that the rewarded behavior is reinforced in the minds of the employees.

Gainsharing Versus Traditional Compensation Plans

In a traditional compensation plan, compensation is not directly linked to performance. The traditional system does not specifically reward outstanding performers. An employer could be paying a majority of workers fairly while overpaying low performers and underpaying high performers. At the start of employment, an employee and employer agree on a pay level. In a typical situation the pay level would be reviewed on an annual basis and adjusted slightly to account for a cost of living increase. Any bonuses are limited to a holiday bonus or a fiscal year end bonus. These bonus amounts are subjective and based on the discretion of management. The traditional compensation plan does not inspire employee involvement or continuous improvement. The attitude of the employee is that, as long as they meet minimum requirements

to stay employed, the level of their performance will not impact their compensation. "While the standard-hour compensation plan motivated high levels of employee effort and attracted a highly skilled labor force, it stifled creativity, penalized innovation, and discouraged cooperation" (Sprinkle & Williamson, 2004). In contrast, a gainsharing plan is not subject to management's discretion in awarding bonuses. Employee participation and continuous improvement are constantly reinforced due to the link between performance and cash bonus. Sprinkle and Williamson (2004) revealed how the traditional compensation plan created an "independent contractor" mentality among employees. Time spent communicating and coordinating with others could detract from a worker's compensation under an individual productivity plan.

A traditional compensation plan has inflexible wages and salaries. When the company is prospering, the employee is not rewarded. When the company is struggling, the employee does not suffer. This structure can lead to disgruntled employees when times are prosperous due to employee morale being low because they feel they are not getting a fair dividend of the rewards. Conversely, this traditional compensation plan can force management to have no other options than to lay off employees and even cut jobs when business is down. In addition, this situation can lead to low employee morale by those that are not affected by the job cuts due to fear and anxiety over their job security. A well structured gainsharing plan will allow an employer to keep wages and salaries below industry averages. Employees accept this because they understand that they will be compensated well above industry averages when the company is prospering due to their input and participation. "Companies such as Lincoln Electric in Cleveland, Ohio, have reportedly paid bonuses of 100 percent of base pay" (Boyett & Boyett, 2004, p.5). Layoffs and job cuts can be substantially reduced under a gainsharing plan. As Boyett & Boyett (2004, p.5) stated, "Under gainsharing, wages become much more flexible since a portion of every employee's total compensation, often a significant portion, is tied to group and/or company performance. In good

times, the company and its workers prosper. In bad times, both suffer, but they suffer much less, than they might as a result of repeated layoffs." Job security is becoming nearly as important as pay level in union contract negotiations. "A gainsharing plan adds significantly to job security by matching the compensation cycle with ability to pay and also creating the sort of team psychology that leads to cooperation in innumerable small areas of work throughout the crisis period" (Thor, 1999, p.5). "A key difference between open-goal plans such as gainsharing and predetermined-goal plans is that with the former, reaching the threshold target does not earn incentive money; rather, it defines the starting point whereupon participants can begin to earn bonus money" (Guthrie & Hollensbe, 2000). This factor cultivates continuous improvement with the gainsharing plan with unlimited goals. Gainsharing programs "have the potential to address both ability and motivational aspects of learning in organizations" (Arthur & Huntley, 2005).

Advantages of Gainsharing Compared to Other Incentive Plans

An effective gainsharing plan will likely "increase productivity, teamwork, pay satisfaction, and group communication" (Guthrie & Hollensbe, 2000). A gainsharing program can be a short term motivator to boost daily performance. Most employees view year-end profit sharing plans as a job benefit that is paid out at the end of the year. The employee does not see this as a motivator and the company does not receive the benefit of increased employee motivation and morale that the well structured gainsharing program provides. Min (2004) stated that "an effective employee incentive program should aim to increase the level of job satisfaction by motivating and rewarding employees for their contribution to improved productivity." According to Boyett & Boyett (2004, p.9) the main advantages of the gainsharing plan in comparison to other incentive plans are as follows: "it is based upon group, not individual performance, it encourages teamwork and cooperation, it is based on macro measures and thus is easy to administer, it results in payouts relatively close in time to performance, it is based upon

factors that can be controlled by the group, it rarely encourages destructive competition between groups, and it promotes an employee/company partnership for improvement."

Success Factors

Hauck & Ross (1984) identified the following as critical factors for success, "top management commitment, adequate planning and employee education, adequate base wages and fringe benefits, good labor relations: high cooperation and interaction, realistic expectations, middle-management and foreman support, properly designed formula-simple, accurate and available accounting and production data, heavy emphasis on communications, aggressive marketing to absorb increased production, and absence of major threat to job security."

The most critical factors that contribute to the success or failure of a gainsharing plan include the mathematical formula for calculating the cash payout and the structured employee involvement system. Kim (2005) cited disagreements amongst management and labor representatives over the formula determination as the main reason one third of the gainsharing plans fail in the first year. All gainsharing plans should be distributed according to a set formula, a specified mathematical formula that is used for calculating gains, not according to management discretion or subjective judgment. The formula should be simple and easily interpreted by all employees. The gainsharing formula should be set up so that it is flexible and can be easily changed and adjusted as dynamic business factors dictate. "A gradually rising level of achievement, with gradually rising financial rewards, consistent month by month, seems to work best" (Imberman, 1992). The plan should be reviewed and adjusted annually based on input from management and employee representation.

Another important factor is a structured employee involvement system. As Boyett & Boyett (2004, p.9) noted, "gainsharing programs fail as much as 40 percent of the time when there is just a formula and no structured system for involving employees." Arthur and Huntley (2005)

stated that "employee suggestion-based knowledge is significantly related to lower production costs." "In the 1920's, Elton Mayo declared that the failure to create collaborative mechanisms at the workplace was "the great stupidity of our time" (Collins, 1998, p.7). This emphasizes the importance of developing an organized system for obtaining and processing employee feedback to improve the company operations and processes. The employee involvement system can be done in a variety of ways. One of the most basic and first used employee involvement systems is the suggestion box. In this system, all employees are encouraged to fill out a card with a new idea or recommendation for improvement and place in a suggestion box for managements review. An advantage to this system is that it gives all employees the opportunity to contribute and provide input. An employee that does not normally share ideas due to shyness or self consciousness would more likely feel free to share their ideas in this type of a system. A disadvantage is that a good idea could potentially be overlooked if the employee does not communicate their idea very well in written form of if management misinterprets the information that is documented on the form. A more popular employee involvement system is to have organized routine meetings with representatives of upper management and labor to meet and discuss new ideas. These meetings would typically take place on a bi-weekly or monthly basis. New ideas can be better explained in detail at these meetings and instant feedback can be provided for the new ideas. These meetings also provide an opportunity to discuss how successful previously implemented ideas have performed. It is beneficial to also have a system of rotating the representatives that are participating in these meetings. This helps bring fresh new ideas and points of view to the employee involvement system. Collins (1998, p.9) provided a summary of the broad meaning of empowerment, "involve all personnel at all levels in all functions in virtually everything: for example, quality improvement programs and 100 percent self-inspection; productivity improvement programs; measuring and monitoring results; budget

development, monitoring, and adjustment; layout of work areas; assessment of new technology; recruiting and hiring; making customer calls and participating in customer visit programs." Empowerment is implemented by creating teams that are focused on task orientation, innovativeness, and continuous improvement. A company with a successful gainsharing plan will educate its employees on all aspects of the company's business and encourage employees to find ways to improve all aspects of the company's operation. Employees must understand each element of the company before they can improve it. The construction industry, in recent years, has begun to implement measures to promote involvement. Gaffney, Sears, and Seeber (2005) identified this new emphasis on cultivating employee involvement. There are several elements that are essential to employee empowerment, "these practices range from informal suggestion systems; to various quality programs in which employees study and identify means for improving performance; to self-managed work teams that are fully responsible for determining the tasks, resources needed, methods used, coordination with other teams, and performance requirements" (Gaffney, Sears, & Seeber, 2005). Other key elements include "participative management practices, or partnering approaches, that seek to fully engage employees in identifying and solving problems as well as looking for new opportunities for productivity and employee satisfaction" (Gaffney, Sears, & Seeber, 2005).

Employee input is vital to continuous improvement. "Under gainsharing, a second learning curve for employee ideas is driven by the deliberate transformation of tacit employee knowledge into explicit organizational knowledge in the form of written suggestions, and by the subsequent implementation and management of this store of knowledge within an organization" (Arthur & Huntley, 2005). The employee suggestions that result from a gainsharing program are a key residual effect. "The ultimate goal of gainsharing is to enhance organizational effectiveness; the

creation of employee suggestions for performance improvement can be seen as an important intermediate goal of these programs" (Aiman-Smith & Arthur, 2001).

Customization

Many gainsharing plans are customized to meet the specific needs of the specific company. This is an important element in determining the success or failure of a company's gainsharing plan. "Organizations should design a program that is consistent with the organization's goals and should adopt practices that compliment existing environmental constraints" (Kim, 2005). "Custom plans are used by organizations that want to customize various components of a gainsharing plan to closely support a unique aspect of their environment" (Pricone & Ricardo, 1996). As Pricone and Recardo (1996) pointed out, "no two organizations are alike, there isn't a map that can be used in all environments to design and implement gainsharing." In general terms, a company's gainsharing plan that attempts to rigidly duplicate a gainsharing template from another company without modifying the plan to fit the characteristics of the company, likely will not succeed long term. A successful gainsharing plan will be flexible and will adapt to the characteristics and particular needs of the company. There are many factors that should be considered when customizing a gainsharing plan for a particular company. The size of the company is an important factor in shaping the gainsharing plan. A smaller company might be able to have all employees directly participating in the employee involvement meetings. In contrast, a medium to large size company will likely need to appoint representatives of labor and management who will bring the ideas and suggestions from their particular group to the company gainsharing meetings. A gainsharing plan should be tailored to the specific industry of the company. A company that is high volume based would have a much different plan than a company whose production is low volume with a high emphasis on customization. The gains would be able to be paid on a more frequent basis with the company

that is high volume based. Collins describes the customization of gainsharing plans in Gainsharing and Power (1998):

> Some companies have three people on department teams, whereas others have all department employees on a team. Some companies have monthly department meetings; others have weekly meetings. Some companies have very broad bonus calculations that include many factors, and some have very broad bonus calculations that included only a few factors. Most companies also hold monthly meetings where upper-level managers discuss the bonus results, company operations, and economic conditions with non-management employees. (p.11)

Requirements For Successful Plans

Many factors need to be considered to optimize the longevity of a gainsharing plan. Aiman-Smith and Arthur (2001) note that some evidence indicates that more than half of the gainsharing plans instituted do not survive beyond five years and many lose effectiveness after the first two or three years. There are several factors that are critical to the success of a gainsharing plan. Gainsharing plans are designed for established companies to improve the performance and profitability of the company. Gainsharing plans are not recommended for brand new companies in the infant stages of the new company. A new company can plan to implement a gainsharing plan within a certain period of time, but should meet certain criteria before putting a plan into action. A new company should perform without a gainsharing plan long enough to establish a consistent level of output. This will serve as a baseline or benchmark for a future gainsharing plan to measure gains. A new company will also want to prove that they can operate at a profitable level for a sustained amount of time before implementing a gainsharing plan. Many companies that are ultimately successful, struggle in the initial stages of existence. Implementing a gainsharing plan during this development period of a company could have

detrimental effects on the long term health of a company. A gainsharing plan should only be implemented after the new company has established a sustained, consistent level of success and the company wants to improve on that success level which they have established. "A new gainsharing plan is most appropriate when you are lean and the market's there for more of your product or service" (Thor, 1987).

A company must be financially stable before implementing a gainsharing plan, regardless of how long the company has been in business. A gainsharing plan should not be viewed as a tool to resuscitate a struggling company. Boyett & Boyett (2004) recommended not implementing gainsharing during a period of financial crisis or if the business does not have the funds to invest in program administration and employee development and training. A gainsharing plan will not provide a quick fix for a financially unstable company. As Kim (1996) stated, "the possibility of layoffs, if any, can discourage employees from fully committing themselves to the program." A gainsharing plan should be viewed as a long term program to improve an already successful company. By implementing a gainsharing plan when business conditions are good, there is a better chance of realizing early gains. This will show employees that the system has potential and will keep them from losing interest in the plan.

Along with financial stability, a company must have stability in management personnel and strong support from top management. Management support is vital to the success or failure of a gainsharing plan. "Top managers must serve as perpetual cheerleaders, complimenting improvement and achievement of target goals" (Imberman, 1992). "According to a 1987 gainsharing employee feedback survey, the most often stated complaint was the lack of managerial commitment to gainsharing teams" (Collins, 1995b). High turnover at the management level typically correlates to inadequate management support of a gainsharing plan. Management support is critical in encouraging employee involvement and participation. Boyett

& Boyett emphasized this point in The Gainsharing Design Manual (2004, p.17), "the senior manager of the organization implementing gainsharing should be prepared to state his/her commitment to the philosophy of gainsharing and the organization's gainsharing plan both verbally and in writing prior to the implementation of the plan." As Thor (1987) stated, "an organization is only ready for something like a gainsharing process if, for example, top management is truly interested in having this happen, and it's not just a staff specialist that is ramming it through." A 1989 study by the American Management Association (Imberman 1992) emphasized the importance of management support when they identified the top reasons for gainsharing plan failure as, "lack of top management support, inadequate middle management involvement, lack of training for first-level supervisors, inadequate assessments of suggestions, and failure to use some sort of expert guidance." The members of the management team must have the freedom to be critical about the gainsharing plan, and their criticisms must be addressed.

Trust between upper management and non-management employees is one of the most critical factors in the success or failure of a gainsharing plan. In an ideal situation, a reciprocal relationship will develop. Non-management employees will trust that they will be rewarded financially for working smarter, working harder, and proactively offering suggestions to improve the overall performance of the company. Upper management will trust that by rewarding performance improvements with cash bonuses, the non-management employees will aggressively pursue continuous improvement and provide a return on the investment in them. The importance of management's influence on the success of a gainsharing plan is emphasized by Collins (1998, p.21), "Scanlon plan success was related to the average level of participation in decision making reported by employees, the number of years a company had a Scanlon plan, managerial attitudes, the chief executive officer's attitudes, and the expected level of success of

the plan." Involving employees in decisions and implementation of all plans is a key factor in developing trust. "Involve employees in the decision to undertake gainsharing and in the design process. Consider having employees vote on the plan and do not implement the plan unless 80 percent of employees approve" (Boyett & Boyett, 2004, p.16).

Gainsharing plans can have an incredible effect on employee satisfaction and the financial performance of a company. However, gainsharing plans should not be implemented for all companies. "An organization now considering a new gainsharing effort must spend the time and thought required to review the basic rationale for gainsharing in their organization; to carefully plan timing and boundaries; and to let the system and formula design team take the time required to consider all the issues" (Thor, 1987). A great deal of research and analysis should be done to qualify a company and to determine if a gainsharing plan is a good fit for a company. This pre-qualification might show a company that a gainsharing plan is not appropriate for their company and will ultimately save time and money that would have been spent on the implementation of an unsuccessful gainsharing plan. This pre-qualification will also spare the company from the negative effect on employee morale that would result from a gainsharing plan failure. Companies who successfully implement gainsharing plans can benefit from the prequalification process. Weaknesses and concerns can be identified that will allow the company to customize their gainsharing plan to ensure the successful implementation of the gainsharing plan. There are a few main factors that need to be considered during the prequalification process. Upper management's attitude and level of support of a gainsharing plan is the first and most important factor. There must be stability at the upper management level and they must fully support the gainsharing plan and back up this support with actions and a long term commitment to continuous improvement centered around employee involvement. Financial stability of the company is also extremely important. Gainsharing should not be viewed as a lifeboat for a

sinking ship. A gainsharing plan should be viewed as a program to enhance and improve an already stable and successful operation.

Pricone and Recardo (1996) identified six factors critical to the success of a gainsharing program: utilization of a simple, easy to understand formula; regular program evaluation; employee involvement in plan design, implementation, and periodic evaluation; a reward system that pays at current market level; utilization of an expert to serve as a guide in the plan design process; and stable product lines.

Chapter III: Methodology

The research methodology used for this field problem includes a literature review, a financial analysis, and recommendations regarding the use of a gainsharing plan for Company XYZ's administrative staff.

The goals of the study are as follows:

1. Identify the effect of the gainsharing implementation on the anticipated profit caused by improved estimating accuracy.
2. Identify the effect of the gainsharing plan implementation on the total profit loss caused by negative internal change orders and warranty claims on each project.
3. Identify the effect of the gainsharing plan on the overall profitability of each project.
4. Provide recommendation on whether a gainsharing plan should be implemented for a union construction firm for the labor force.

The methodology began with a literature review that focused on the main principles of an effective gainsharing plan, the advantages of gainsharing versus other traditional compensation plans, and the importance of customizing a gainsharing plan to fit the particular company's needs and characteristics. The review focused on core principles including open-book management, employee involvement, and equity. An effective mathematical payout distribution formula and a structured employee involvement system were identified as the two most critical factors in the success or failure of a gainsharing plan. The review also emphasized the importance of customizing the plan to meet the needs of the particular company. Lastly, the review identified the prerequisite requirements for instituting a gainsharing plan including being an established company, a history of financial stability, stable management personnel with strong

management support for the gainsharing plan, and trust between upper management and non-management employees.

The literature review was followed by a financial analysis of Company XYZ's before and after the gainsharing plan was implemented. The analysis was based on comparing the profitability of fifteen randomly selected projects in the two years leading up to the implementation of the gainsharing plan to fifteen randomly selected projects in the two years after the implementation of the gainsharing plan. This analysis will determine what impact the gainsharing plan implementation had on Company XYZ's profitability.

Limitations

There are many variables that can affect the profitability of the construction industry. These variables can include weather, human error, and customer expectations. These factors can not always be predicted or controlled and can have a major impact on the profitability of a construction project.

The study was based on two 2-year periods of time, two years before the gainsharing plan was implemented and two years after the gainsharing plan was implemented. It is possible that a larger sample of years would provide more accurate results. According to Boyett & Boyett (2004, p.4), "many gainsharing programs, perhaps half, survive less than five years with many losing their effectiveness after the first year or two."

The state of the economy can affect the profitability of a construction industry. It is possible that this could impact the profitability of a construction project and this would not be identified in this study.

Chapter IV: Results

The purpose of this study is to determine the financial impact of the implementation of a gainsharing incentive program for mid-level management employees of a construction general contractor. The study began with an analysis of thirty job profit summary reports. The thirty reports were comprised of fifteen randomly selected projects that were completed in the two years before the gainsharing plan was implemented and fifteen randomly selected projects that were completed in the two years after the gainsharing plans was implemented. Table 1.0 shows an example of a job profit summary report.

Table 1

Sample of Job Profit Summary Report

Job 0401	
Job Profit Summary	
6/12/04	
Project Cost	$544,862
Anticipated Profit	$85,870
Total Contract Amount	$630,732
Anticipated Profit Percentage	15.76%
Total Project Loss	$3,291
Total Project Loss Percentage	3.83%
Final Profit Percentage	15.16%

This report identifies the total cost of a job, the total amount of anticipated profit, the total contract amount, the percentage of anticipated profit, the total amount of loss, the total project loss percentage, and the percentage of final profit of the job.

The anticipated profit percentage is the amount of profit that Company XYZ is anticipating making on each job based on the anticipated jobs costs and the total sales contract

amount. This percentage is determined after the sales contract is signed and before the project is commenced. The estimator and sales representative have the most influence on the anticipated profit percentage. This percentage is used as a gauge to measure the performance of the estimator in relation to obtaining competitive bids and strong negotiating with subcontractors and suppliers. The project managers have no influence on the anticipated profit percentage. The anticipated profit percentage ranged from 13.97% to 18.78% with an average of 16.04% on the projects completed before the gainsharing plan was implemented (see table 2.0).

Table 2

Anticipated Profit Percentage Pre-Gainsharing Plan Implementation

Anticipated Profit Percentage	
(APP) 2004-2005	
Pre-Gainsharing Implementation	
Project #	Profit %
0401	15.76%
0402	17.76%
0403	16.84%
0404	15.99%
0405	15.41%
0406	14.29%
0407	16.07%
0408	13.97%
0409	15.11%
0410	18.78%
0411	17.28%
0412	14.46%
0413	17.16%
0414	17.12%
0415	14.54%
Average APP	16.04%

The average anticipated profit percentage increased by 1.33% in the two years after the gainsharing plan was implemented. The anticipated profit percentage ranged from 13.03% to 23.80% with an average of 17.37% on the projects completed after the gainsharing plan was implemented (see table 3.0).

Table 3

Anticipated Profit Percentage Post Gainsharing Plan Implementation

Anticipated Profit Percentage	
(APP) 2006-2007	
Post-Gainsharing Implementation	
Project #	Profit %
0601	17.10%
0602	17.48%
0603	23.80%
0604	13.03%
0605	17.24%
0606	16.63%
0607	17.27%
0608	17.46%
0609	17.78%
0610	20.42%
0611	14.63%
0612	17.65%
0613	14.70%
0614	18.86%
0615	16.57%
Average APP	17.37%

The total project loss percentage identifies unexpected costs that occur during the construction building process on a project in comparison to the anticipated profit of the project before the project begins. These costs can be caused by estimating errors and omissions, field errors, and warranty work. Both, the estimator and the project manager have a significant

influence on the amount of loss factor on each project. A high total project loss percentage is often the result of poor communication between an estimator and project manager or between an estimator or project manager and a subcontractor. The average total project loss percentage was decreased by 1.75% in the two years after the implementation of the gainsharing program (see table 4.0 and table 5.0).

Table 4

Total Project Loss Pre-Gainsharing Plan Implementation

Total Project Loss Percentage	
(TPL) 2004-2005	
Pre-Gainsharing Implementation	
Project #	Profit %
0401	3.83%
0402	4.54%
0403	6.30%
0404	2.59%
0405	0.39%
0406	3.29%
0407	1.24%
0408	5.03%
0409	1.20%
0410	2.18%
0411	6.52%
0412	0.35%
0413	1.62%
0414	3.20%
0415	9.08%
Average TPL%	3.42%

Table 5

Total Project Loss Post Gainsharing Plan Implementation

Total Project Loss Percentage	
(TPL) 2006-2007	
Post-Gainsharing Implementation	
Project #	Profit %
0601	0.82%
0602	0.46%
0603	2.05%
0604	0.00%
0605	1.73%
0606	3.49%
0607	1.09%
0608	0.00%
0609	4.54%
0610	0.34%
0611	3.08%
0612	0.25%
0613	0.77%
0614	3.23%
0615	3.26%
Average TPL%	1.67%

The final profit percentage is the most comprehensive figure in gauging the performance of Company XYZ's mid-management personnel. This figure shows the profitability of the project after the project has been completed and the one year warranty period has expired and all expenses have been paid. The final profit percentage ranged from 13.22% to 18.37% with an

average of 15.55% on the projects completed in the two years before the gainsharing plan was implemented (see table 6.0).

Table 6

Final Profit Percentage Pre-Gainsharing Plan Implementation

Final Profit Percentage	
(FPP) 2004-2005	
Pre-Gainsharing Implementation	
Project #	Profit %
0401	15.16%
0402	16.95%
0403	15.78%
0404	15.57%
0405	15.35%
0406	13.82%
0407	15.87%
0408	14.27%
0409	14.93%
0410	18.37%
0411	16.16%
0412	14.41%
0413	16.88%
0414	16.57%
0415	13.22%
Average FPP%	15.55%

The average final profit percentage increased by 1.53% in the two years after the gainsharing plan was implemented. The final profit percentage ranged from 13.03% to 23.31% with an

average of 17.08% on the projects completed after the gainsharing plan was implemented (see table 7.0).

Table 7

Final Profit Percentage Post-Gainsharing Plan

Final Profit Percentage	
(FPP) 2006-2007	
Post-Gainsharing Implementation	
Project #	Profit %
0601	16.96%
0602	17.41%
0603	23.31%
0604	13.03%
0605	16.94%
0606	16.05%
0607	17.08%
0608	17.46%
0609	16.97%
0610	20.35%
0611	14.18%
0612	17.60%
0613	14.59%
0614	18.25%
0615	16.03%
Average FPP%	17.08%

Chapter V: Discussion

The purpose of this study was to determine the financial impact of the implementation of a gainsharing incentive program for mid-level management employees of a construction general contractor. The goals of the study were as follows:

1. Identify the effect of the gainsharing implementation on the anticipated profit caused by improved estimating accuracy.
2. Identify the effect of the gainsharing plan implementation on the total project loss caused by negative internal change orders and warranty claims on each project.
3. Identify the effect of the gainsharing plan on the overall profitability of each project.
4. Provide recommendation on whether a gainsharing plan should be implemented for a union construction firm for the labor force.

Limitations

There are many variables that can affect the profitability of the construction industry. These variables can include weather, human error, and customer expectations. These factors can not always be predicted or controlled and can have a major impact on the profitability of a construction project.

The study was based on two 2-year periods of time, two years before the gainsharing plan was implemented and two years after the gainsharing plan was implemented. It is possible that a larger sample of years would provide more accurate results.

The state of the economy can affect the profitability of a construction industry. It is possible that this could impact the profitability of a construction project and this would not be identified in this study.

Conclusions

The anticipated profit percentage was increased after implementation of the gainsharing program. This reveals an improvement in estimating accuracy. The improved estimating accuracy could be attributed to more thorough and detailed estimate proposals and stronger negotiating of contracts with subcontractors and vendors.

The implementation of the gainsharing plan had the most significant impact on the average total project loss percentage. Loss due to field errors as a result of poor communication and planning were reduced. This suggests a correlation to the core principles of a gainsharing plan as identified in the literary review in regards to employee involvement and teamwork. The intent of the gainsharing plan was to improve communication between project managers and estimators. The reduction in average total project loss suggests that the communication was improved.

Overall, the implementation of the gainsharing program had a positive impact on the profitability of Company XYZ. The increase in profitability was not staggering. However, the results were positive and suggest that the gainsharing program should be continued.

This particular gainsharing plan was linked directly to the profitability of the company. A similar gainsharing plan is not recommended for Company XYZ's administrative staff. The administrative staff's daily functions do not have as significant of an impact on job profitability as the project managers and estimator's daily performance. However, a customized plan is recommended for the administrative staff that would have a direct correlation between the cash payout and the regular performance of the staff. This would involve research and employee input to design a plan that will be effective and sustainable.

Recommendations

The gainsharing plan implementation has appeared to make a positive impact on Company XYZ's profitability. There are some recommendations to verify the accuracy of the study and also to improve the performance of the company's gainsharing program.

A second analysis completed in identical fashion in two year will allow for a larger sample of years. Four years before the plan implementation could be compared to four years after the plan implementation. This will provide a larger sample and would alleviate some of the limitations including the impact of uncontrollable variables and the current economic status of the country. These factors are less likely to have an impact on a larger time span.

Employee involvement has been identified as a critical component in the gainsharing plan. "Employee involvement should be an important consideration in every gainsharing plan" (Pricone & Recardo, 1996). Employee involvement and gainsharing work in a reciprocal relationship. "While employee involvement provides a method whereby workers can improve performance, gainsharing provides the rewards for the improved performance" (Kim, 1996). A modification to the current employee involvement system is recommended. Currently, members of mid-management and upper management are meeting monthly to discuss continuous improvement ideas. It is recommended to change these meetings to bi-weekly to allow more of an opportunity for the current topics and issues to be discussed while they are clear in the team member's thought process.

It is recommended that union construction companies consider implementing gainsharing plans for their labor force. An analysis should be done by each firm to evaluate gainsharing plan readiness. The high degree of labor in construction work makes it an optimal industry for gainsharing. "Labor-intensive production systems provide employees with more opportunities for offering suggestions and innovations, which can improve the production system" (Kim,

1996). A study by Kim (1996) found that a labor intensive production system had significant positive relationships with reduction of production costs and improvement in productivity. As competition increases in the construction industry, it is in the best interest of both, management and labor, to use gainsharing to bring both sides together for a common goal. A study by Eaton and Voos (2001), revealed a change in union philosophy, "union leaders themselves become convinced that the status quo carries with it serious costs for the people they represent, and that their members will be better off if they embrace workplace innovations." A gainsharing plan will improve employee morale and the overall work culture of the union construction firm. A study by Collins, Hatcher, and Ross (1993) found that a company's union status had little effect on the decision of whether or not to institute a gainsharing plan. They found that work climate was the most important factor in determining if a company was receptive to gainsharing. This study found that work climates were more positive in non-union facilities than the union facilities. It is recommended that the union facilities consider a gainsharing plan in an effort to improve their overall work climate.

In summary, the overall recommendations for Company XYZ include an identical financial analysis in two years to verify the accuracy of this study's findings. Lastly, the formal employee involvement system should be modified so that meetings between mid-management and upper management are taking place on a more frequent basis to allow for a discussion of current issues and ensure that important topics do not get overlooked.

References

Adams, D. B., Hatcher, L. L., & Ross, T. L. (1985). How Unions View Gainsharing. *Business Horizons,* 15-22.

Aiman-Smith, L. & Arthur, J. B. (2001). Gainsharing and Organizational Learning: An Analysis of Employee Suggestions Over Time. *Academy of Management Journal, 44, 737-754.*

Arthur, J. B. & Huntley, C. L. (2005). Ramping Up the Organizational Learning Curve: Assessing The Impact of Deliberate Learning on Organizational Performance Under Gainsharing. *Academy of Management Journal,* 48, 1159-1170.

Arthur, J. B. & Jelf, G. S. (1999). The Effects of Gainsharing on Grievance Rates and Absenteeism Over Time. *Journal of Labor Research*, 20, 133-145.

Arthur, J. B. & Kim, D. O. (2005). Gainsharing and Knowledge Sharing: The effect of Labour-Management Co-Operation. *International Journal of Human Resource Management, 16, 1564-1582.*

Boyett, J.H., & Boyett, J.T. (2004). *The Gainsharing Design Manual*. Lincoln, Nebraska. ASJA Press.

Collins, D. (1995a). A Socio-Political Theory of Workplace Democracy: Class Conflict, Constituent Reactions and Organizational Outcomes at a Gainsharing Facility. *Organization Science*, 6, 628-644.

Collins, D. (1995b). Death of a Gainsharing Plan: Power Politics and Participatory Management. *Organization Dynamics*, 24, 23-38.

Collins, D. (1998). *Gainsharing and Power: Lesson From Six Scanlon Plans*. Ithaca, New York. Cornell University Press.

Collins, D., Hatcher, L., & Ross, T. L. (1993) The Decision to Implement Gainsharing: The Role

of Work Climate, Expected Outcomes, and Union Status. *Personnel Psychology, 46, 77-104.*

Eaton, A. E. & Voos, P. B. (2001). The Ability of Unions to Adapt to Innovative Workplace Arrangements. *Department of Labor Studies and Industrial Relations Research Institute*, 172-176.

Gaffney, M.., Sears, S., & Seeber, R. (2005). *The Energy Construction Industry Gainsharing Handbook.* Ithaca, NY: Digital Commons.

Gomez-Mejia, L. R., Welbourne, T. M., & Wiseman, R. M. (2000). The Role of Risk Sharing and Risk Taking Under Gainsharing. *Academy of Management Review, 25, 492-507.*

Graham-Moore, B., & Ross, T. (1995). *Gainsharing and Employee Involvement.* Washington, D.C. The Bureau of National Affairs, Inc.

Graham-Moore, B., & Ross, T. (1983). *Productivity Gainsharing: How Employee Incentive Programs Can Improve Business Performance.* Englewood Cliffs, New Jersey. Prentice-Hall, Inc.

Guthrie, J. P. & Hollensbe, E. C. (2000). Group Pay-For-Performance Plans: The Role of Spontaneous Goal Setting. *Academy of Management Review, 25, 864-872.*

Hauck, W. C. & Ross, T. L. (1984). Gainsharing in the United States. *Industrial Management*, 26, 9-14.

Imberman, W. (1992). Boosting Plan Performance with Gainsharing. *Business Horizons*, 77-79.

Kim, D. O. (2005). The Choice of Gainsharing Plans in North America: A Congruence Perspective. *Journal of Labor Research*, 26, 465-483.

Kim, D. O. (1999). Determinants of the Survival of Gainsharing Programs. *Industrial and Labor Relations Review*, 53, 21-42.

Kim, D. O. (1996). Factors Influencing Organizational Performance in Gainsharing Programs.

Industrial Relations, 35, 227-244.

Mangel, R. & Useem, M. (2000). The Strategic Role of Gainsharing. *Journal of Labor Research*, 21, 327-343.

Min, H. (2004). An Examination of Warehouse Employee Recruitment and Retention Practices in the USA. *International Journal of Logistics: Research and Applications, 7, 345-359.*

Pricone, D. & Recardo, R. (1996). How to Determine Whether Gainsharing is for You. *Industrial Management*, 12-18.

Sprinkle, G. B. & Williamson, M. G. (2004) The Evolution from Taylorism to Employee Gainsharing: A Case Study Examining John Deere's Continuous Improvement Pay Plan. *Issues in Accounting Education,* 19, 487-503.

Thor, C. J. (1999). *Gainsharing: Creating and Sharing Success*. Menlo Park, California. Crisp Publications.

Thor, C. J. (1987). Employee Involvement and Productivity Gainsharing. *Industrial Management*, 21-25.

Woods, M. D. (1989). Gainsharing in Industry. *Journal of Accountacy*, 143-147.