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# A MULTICOMPONENT INTERVENTION SYSTEM USING HUMAN PERFORMANCE TECHNOLOGY CONCEPTS TO IMPROVE PERFORMANCE IN SMALL SERVICE BUSINESSES

by

Doug LaFleur

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Faculty of The Graduate College
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requirements for the
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Department of Psychology

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Doug LaFleur

## A MULTICOMPONENT INTERVENTION SYSTEM USING HUMAN PERFORMANCE TECHNOLOGY CONCEPTS TO IMPROVE PERFORMANCE IN SMALL SERVICE BUSINESSES

### Doug LaFleur, M.A.

## Western Michigan University, 2004

A small business servicing dealerships in the chimney lining industry was responsible for training and resupplying contractors in a propriety chimney lining system. A process was developed for sharing and comparing the dealerships' financial reports and business processes. The process involved a small group of dealers attending regular 6-month meetings called Impact Groups. Dealers took turns hosting the meetings and having the attending dealers analyze their business. A detailed list of problems and solutions was provided to each host business.

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#### INTRODUCTION

The words "small business" conjures up a variety of images for many Americans. These range from memories of small, rural, five and dime stores that they went to as a child to the local Subway franchise in the strip mall across town. However, small business, when looked at closely, is anything but small. In fact, it contributes more jobs to the United States' economy than big business each year, it employs more people than big business, and it is the main source of innovation and new ideas. Small business is a vital link in the economic fabric of our country and its growth and stability are essential for a strong economy.

According to the Small Businesses Association (SBA) and for the purposes of this paper, a small business is one which employs fewer than 500 people. In the United States economy, small businesses represent 53 percent of the private work force, contribute 47 percent of all sales in the country, and are responsible for 50 percent of the private gross domestic product (US Small Business Administration Office of Advocacy, 1997). In 1992, approximately 48 million private sector workers were employed in 6 million small establishments, representing about 98 percent of all the establishments in the United States. The remaining 2 percent (130,000 establishments) employed 40 million workers (Wiatrowski, 1994).

The future for small business looks even brighter than the past. Specifically, the total number of small businesses shows a definite upward trend. The number of small businesses in the United States has increased 49 percent since 1982 (US Small Business Administration Office of Advocacy, 1997).

Small business is a dynamic and vital market in the U.S. and the success of this market can greatly affect the U.S. economy. The globalization of our economy and the advent of electronic communications greatly increases the ability of U.S. small businesses to work with consumers in other countries. Having productive and efficient small businesses can greatly enhance the U.S.'s ability to become a world leader in many industries. However, small business owners often lack the financial resources to find new methods and apply the latest technologies to improve their businesses. The rates charged by many of the top consulting firms in the country often fare beyond what the average "small" business would ever consider paying, even if small business owners were familiar and interested in some of the services that these firms have to offer. Short of hiring a consultant from one of the large consulting firms (Accenture Consulting, The Boston Consulting Group, etc.) small business owners often sift through all of the available seminars, workshops, books, etc. and use intuition to apply what they feel will work in their businesses. If small firms could have access to the same services that the top firms in the country utilize (if the financial barriers were removed), the benefit to our economy could be dramatic. The dilemma is in how to structure a method to deliver effective tools to small business owners and have them systematically apply them to their businesses. The following paper outlines a method used by some small business owners which gives them access to some of what is arguably the best performance improvement technology available.

An effective method for improving performance in businesses which has been used in both large and small businesses has been the tools and techniques of a field called human performance technology (HPT). HPT has its roots in behavioral psychology

(derived from operant and respondent conditioning) and has also drawn from the practice of instructional technologists, training designers, organizational developers, and various human resource specialists. Using the key concepts that have defined the field, additional research is currently being conducted to further develop and improve upon this technology.

Various authors have attempted to define HPT. Among the most prevalent are the ones included in the <u>Handbook of Human Performance Technology</u> (Stoltovich & Keeps, 1992). Some of the most notable definitions of HPT are the following:

"HPT is a set of methods and processes for solving problems - or realizing opportunities - related to the performance of people. It may be applied to individuals, small groups, or large organizations" (Rosenberg, 1990, p. 6).

Harless (Geis, 1986) describes it as follows: "HPT is the process of selection, analysis, design, development, implementation, and evaluation of programs to most cost-effectively influence behavior and accomplishment" (p.1).

HPT uses a systemic approach to solving organizational problems, looking at the organization as a whole rather than operating piecemeal. It seeks to link the actions and interventions of all organizational elements that affect overall performance (Rummler & Brache, 1990). In this way, selection, training, feedback systems, incentives, and organizational design may all be implemented as part of a systematic solution. A systematic approach to organizational improvement creates an orderly way of analyzing performance problems and the HPT approach advocates a method of analyzing, designing, developing, intervening and evaluating performance problems in organizations. Among the underlying tenets of HPT can be found the following as described in the HPT handbook (Geis, 1986):

- 1. Human performance is lawful and can often be predicted and controlled.
- 2. Knowledge of human behavior is limited, and thus HPT must rely on practical experience as well as scientific research.
- 3. HPT draws from many research bases while generating its own.
- 4. HPT is the product of a number of knowledge sources including: cybernetics, behavioral psychology, communications theory, information theory, systems theory, management science, and the cognitive sciences.
- 5. HPT is neither committed to any particular delivery system nor confined to any specific population and subject matter area. It can address any human performance, but is most commonly applied within organizational and work settings.
- 6. HPT is empirical. It requires systematic verification of the results of both its analysis and intervention efforts.
- 7. HPT is evolving. Based on guiding principles, it nevertheless allows enormous scope for innovation and creativity (pp.5-6).

HPT does not pretend to have fully developed its own firm and generally accepted theoretical foundation. However, the key principles of this discipline are guided by the empirical data that have accumulated as a result of documented systematic applications of the technology. Numerous Fortune 500 firms including General Motors, Microsoft, Sun Microsystems, and Proctor and Gamble have used the principles of HPT. Although HPT has proven itself in various applications in these firms it has yet to hit the mainstream of corporate vernacular and the seminar and training circuit so as to become a familiar catch word to small business owners across the U.S.

The tools available to the Human Performance Technologist are varied and farreaching. In the Handbook of Human Performance Technology, there are listed 83 separate skill areas that could be mastered. Some technologists become specialists in only one of these fields while others take a more generalistic approach and become competent in many areas. However, there are also some underlying theories and tools that are potentially valuable for anyone practicing in the field. Many of the core tools are useful for any area of expertise an HPT practitioner decides to pursue. The research and the intervention described in this thesis include the systematic application of five of these tools. The tools were selected in part based upon their developer's inclusion in the book Performance Improvement Pathfinders: Models for Organizational Learning Systems (Dean & Ripley, 1997). This book identifies individuals who have made major contributions to the field of human performance improvement and is part of the Masters Series Books as published by the International Society of Performance Improvement (ISPI). ISPI is the main advocate for HPT. The five main analysis and intervention tools used in the current study include the following: (1) The Total Performance System – Dale Brethower, (2) The performance gap – Geary Rummler, (3) The organizational, process, and individual level of performance – Geary Rummler and Alan Brache, (4) The ACORN test and goal setting – Thomas Gilbert, (5) Feedback – Thomas Gilbert.

The Total Performance System (TPS) model as described by Dale Brethower serves as the framework for the use of all of the other tools and models included in the intervention package utilized in the current study. This model allows the researcher to gain a micro and macro perspective of the system to be analyzed and creates various perspectives for viewing the organization and designing an intervention.

The TPS allows the researcher to use a systematic, dynamic process to align all parts of the system with other parts and identify outputs and feedback systems that allow

the system to change and adapt to its environment. It is based upon the concept of general systems theory, which defines a system as a complex of interacting elements (Bertalanffy, 1968) and the relationships between these elements (Miller, 1978). This perspective allows each vantage point of the system to be methodically analyzed.

Taking a systems view of organizations is important for HPT practitioners because an organization behaves as a system, regardless of whether it is being managed as a system (Rummler & Brache, 1990). Systems thinking is part-to-whole and whole-to-part thinking about making connections between system element, whole systems, and subsystems so they fit together into a whole that generates value-added outputs (Brethower, 1982; Kaufman, 1998).

Most organizational problems find their cause at either the organizational, process or individual level of performance. A systems perspective provides the HPT practitioner a tool for analyzing organizational problems at each level and produces a model for analysis in how the parts fit into the whole. Systems thinking evaluations allow the practitioner a method for determining whether each job is indeed linked to organizational goals (Brethower & Smalley, 1998).

In the TPS model (see Figure 1), a performance system is broken down into seven parts including the system's mission, the processing system, processing system feedback, output, the receiving system and receiving system feedback. The Brethower model is the earliest validated application of a systems model to specifically address human performance (Brethower, 1972). The TPS is "total" because all seven elements must be considered to manage a system intelligently (Brethower, 1995). It has also been referred to as a general systems diagram (Brethower, 1982) and general systems view (Brethower,

1995) because it applies to a very wide variety of adaptive systems (Brethower, 1982).

The purpose of the TPS is to provide guidance in identifying, discussing, and improving key features of an organization (Brethower, 1995).

#### Mission:

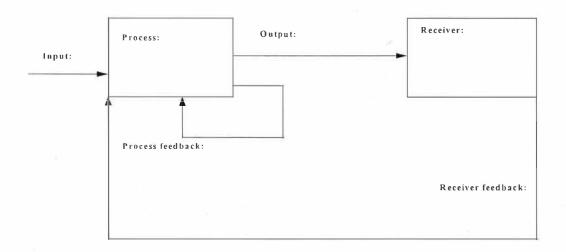


Figure 1. TPS Model<sup>1</sup>: A micro and macro perspective of a system in which an organization can be analyzed and an intervention designed.

This thesis analyzes performance using the TPS model from three different perspectives. They are as follows: (1) The perspective of the owner/manager of the SOLID/FLUE dealership as the processing system; (2) The second is from the perspective of SOLID/FLUE (the home office) as the processing system; (3) The third is from the perspective of the intervention as the processing system.

<sup>&</sup>lt;sup>1</sup> From "Behavior Analysis in Business and Industry," by Malott, R.W., 1973, *Introduction to Behaviour Modification*, 1-8, Behaviordelia, Kalamazoo, Michigan.

The current study measured the changes as identified from the perspective of the intervention as a processing system. The following table shows how using the perspective of the intervention as a processing system has been systematically aligned with the other two perspectives. As seen in Table 1, there are slight differences in the missions, inputs, outputs, receivers, external feedback and internal feedback depending upon the perspective taken.

The alignment of each perspective assures that each piece fits logically into each other piece and allows the system designer the opportunity to identify disconnects and missing pieces. It assures that key inputs are in place to create key outputs and that all outputs are necessary and useful as inputs to the receivers or to a micro or macro system to which the piece belongs. This perspective creates an environment for a number of key research questions to be explored. Among the questions addressed in this thesis are: (1) Can a systems approach to an intervention in a small business improve the profitability of a small business? (2) Can a systems approach to an intervention in a small business improve the number of goals accomplished? (3) Can a systems approach to an intervention in a small business improve the quality of goals accomplished?

Rummler describes business problems as those being indicated by a clear gap between desired and actual performance (Rummler & Brache, 199•). In other words, when a desired level of performance has been identified and the actual level of performance has been measured, the difference between the desired level and the actual level is identified as the performance gap. If the desired level of performance is greater than the actual level then there may be value in decreasing this gap in performance. The

next step is identifying the impact of decreasing this gap and assigning a value to the impact. If the value is such that it makes economic sense to

The Total Performance System

Table 1

The Total I	CHOIIIlance Bystein		
Processing	SOLID/FLUE	SOLID/FLUE	Impact Group
system	owner/manager	home office	Intervention
Mission	• Produce chimney lining	• Provide high quality	• Produce business people
	and restoration services	materials for relining	with improved business
	to homeowners with	chimneys.	building behaviors.
	venting problems.	• Teaches chimney	• Provide a setting for
	• Improve the efficiency	business building	maintaining the use of
	of homeowner's	skills.	these new behaviors in
	chimneys and the	• Enables customers to	their natural setting.
	environment of their	provide safe products	• Enables businesses to
	local communities.	and excellent service.	improve efficiency and
		• Maintains a high net	profitability; better
		profit.	serve their customers
			and communities
Input	• People (production	• Business people	• Facilitator
	workers, manager)	• Financial/business	• Goals
	• Equipment (pumps,	tracking technology	• Standards
	mixers, etc.)	• Human performance	• Peers
	• Financial resources	technology	<ul> <li>Feedback software</li> </ul>

	(money)	• Equipment/supplies,	• Dealers financials
		working capital, raw	
		materials needed for	
		lining material	
Output	• Completed jobs	• Dealers with high	• Business people with
		quality chimney	improved business
		lining skills/material	building behaviors
		• Dealers with	• Consequences for
		profitable businesses	maintaining business
			building behaviors
Receiver	• Homeowners	• Dealers' communities	• Attendees' business
	• Insurance adjusters	• Insurance companies	• Communities serviced
External	• Job satisfaction forms	• Satisfaction surveys	• Satisfaction surveys
feedback	• Volume growth	• Profit/loss statements	• Profit/loss statements
		Material sales	• Volume growth
Internal	• Material sales	• Goals accomplished	Goals accomplished
feedback	Weekly technical phone	• Measures of backlog,	<ul> <li>Measures of backlog,</li> </ul>
	calls	production, sales and	production, sales and
		estimates	estimates

decrease the gap in performance (if the cost to fix the gap is less than the gain received by an increase in performance) then an intervention may be implemented to decrease this gap.

A logical next step in improving the performance of an organization is analyzing the cause of the problem. In doing so, Rummler and Brache (1990) look at an organization from the perspective of the organizational, process and individual levels. The organization level includes an analysis of the organization's strategy, goals, structure, measurement and management. This level reviews the organization's relationship with its environment and its basic internal structure. It is a macro level perspective of the organization and, depending upon how macro the analysis is, often includes an analysis of suppliers, customers and shareholders. It addresses the overall products of the larger, often functional groups in an organization and occasions an analysis of how each piece fits in with each other piece of the organization. In an organizational level perspective, the output of one functional group is often the input to another functional group. It allows the practitioner to see the pieces of the organization and gives structure and continuity to how work gets done in an organization.

Stepping down a level, the process level provides a more detailed look at the internal processes by which work gets done and gets managed. The process level often cuts across functional departments of a business and can be shown by a detailed map of how the work often gets done in an organization. If the organizational level is the skeleton of the organization, this level could be referred to as the musculature of the organization.

The third level, the job performer level, looks at the individuals who perform the work and provides a detailed analysis of the environment (information, feedback, tools, incentives), as well as the person (his/her knowledge, skills, attitudes, capacity and motives). The objectives at this step in the analysis are to determine what job outputs

need to be identified and improved in order for the key processes to work effectively (Rummler & Brache, 1990).

#### Goal Setting

Goal setting has proven to be a promising strategy for improving a number of areas of performance in organizational and educational settings. Numerous studies have detailed its effectiveness from both a cognitive perspective (Locke, Shaw, Saari, & Latham, 1981) and a behavior analytic point of view (Fellner & Sulzer-Azaroff, 1984). In general, goal setting entails specifying a level of performance toward which the individual or group should work (Fellner & Sulzer-Azaroff, 1984). Locke (1968) conceptualized goal setting as a relation between conscious intentions and task performance. This cognitive approach may be contrasted with a behavior analytic approach, which notes that a goal is simply a stimulus that precedes behavior. When the antecedent goal reliably accompanies a reinforced response or describes a reinforcement contingency, it acquires discriminative control, increasing the probability the individual will repeat the behavior in the future presence of the same stimulus. Also, attainment of a goal can function as a reinforcing stimulus (Fellner & Sulzer-Azaroff, 1984).

It should also be noted that there are many variables that affect goal attainment and exert some functional control of an individual's completion of goals. Among those found to be particularly influential are the individual's history and current contingencies in relation to goals, how specific and reasonable the goals are, and whether the individuals involved have participated in the setting of the goals or reinforcement has been previously paired with it (Fellner & Sulzer-Azaroff, 1984).

Another key technique in this study was the use of Gilbert's ACORN test for assessing goal adequacy and goal attainment. Goals were used throughout the experiment, but Gilbert's ACORN test was added to the intervention to improve goal attainment by making the goals more specific, more measurable, and more closely connected to the mission and objectives of the company. From a behavior analytic viewpoint, it should be noted that when goals specify response requirements and the criterion for rewards, employees and managers more easily discriminate successful from unsuccessful performance (Fellner & Sullzer-Azaroff, 1984).

"ACORN" is an acronym for five qualifications that every good description of the mission of an institution should include. The mission of an organization could also be described as the most important result of an organization (Daniels, 1989). These five qualifications were used in this study as a guide for developing and analyzing goals that were set by the participants. The qualifications were asked as questions, in the following manner:

- A: Is it an accomplishment, and not just a description of behavior? If the goal has been described in behavioral terms, it has not been identified.
- C: Do those assigned the goal have primary control over it? Or does good performance principally depend on others?
- O: Is it a true *overall objective*, or merely a subgoal?
- R: Can this goal be *reconciled* with other goals of the institution, or is it incompatible with them?
- N: Can a *number* be put on it, that is, can it be measured?

Gilbert notes that we could dramatically reduce at least three-quarters of the PIPs (performance improvement potential) in the world of work by applying relatively simple

describes two different ways in which, without training, the information required for competent performance can be improved: The first is data manipulation which is used to confirm performance. Data manipulation would entail providing timely data on the performance to the performer that may be used as feedback to improve the performance. The second is through improvement in the ways in which performance is directed or guided. Gilbert also makes the point that data messages become information only when they inform. The use of this information may be described as providing feedback to the performer. As many authors have noted, feedback is not a precise technical term, and describing a procedure as involving feedback does not explain the behavioral functions of the information provided (Duncan & Bruwelheide, 1986). In fact, depending on past and present conditions, information about a person's past performance might alter subsequent behavior by acting as a conditional stimulus, reinforcer, punisher, establishing operation, or discriminative stimulus.

Although attempts have been made to tease out the role of feedback in interventions and provide a more precise behavioral definition of the type of feedback used, that is not the intent of this research. Several reviews of the literature concerning the use of feedback in organizational settings have made it clear that feedback has been used very successfully in improving performance in a wide range of settings (Wittkopp, Rowan, & Poling, 1990). This study used feedback in a variety of ways and a case could be made of its use as a conditional stimulus, a reinforcer, punisher, establishing operation, or discriminative stimulus.

According to the *Handbook of HPT*, feedback is most conveniently employed and is most effective when standards (expectations, procedures, and required results) are most clearly and precisely defined and communicated. Feedback serves its informational role best when it enables comparison of actual, observed performance with well-understood standards of performance (Stoltovich & Keeps, 1992). A clear attempt was made in this study to provide a feedback system that employed this comparative strategy. A more detailed explanation of how this was accomplished is provided in the method section of this paper.

The purpose of this study was to determine the effects of a multicomponent intervention using some of the main underpinnings of the HPT field to analyze performance gaps in an organizational system and then to design an intervention including goal setting, feedback, and incentives to close these gaps. Many of these variables have been used separately in various other experiments but this study shows the effect of using a unique combination of these variables in a setting specifically designed for small businesses. The study also examines the bottom line effect of using this type of intervention by tracking the net income of the various companies targeted in the research.

Taking each variable (goal setting, feedback, and incentives) separately, the research in this area is particularly extensive. Articles written in this area include descriptions of package interventions using all three variables (Austin, Kessler, Riccobono, & Bailey, 1996; Johnson & Masotti, 1990; Ralis & O'Brien, 1987), as well as numerous articles using each individual component. However, the current study utilizes a unique approach that includes long-term follow-up and application of the principles used in the intervention. The intervention spanned several years and included data on

changes in net income as well as more upstream indicators including production, sales calls made, marketing contacts made and production backlog. Lastly, the application of these techniques to small businesses shows the research community a perspective that is rare. There were no comparable studies using this intervention approach in any of the literature reviewed by this researcher.

Just as HPT seeks to link the actions and elements of an organization together so they may act in unison, the intervention as described in the following section sought to link some of the best tools in the HPT field together into a cohesive intervention. It was hoped that such an intervention would then have the best potential of impacting the organizations included in the study. HPT has proven itself with many success stories across some of the largest companies in the world. However, the cost of providing a highly trained human performance technologist to a small business enterprise often exceeds the potential benefit. By designing an intervention that combines many of the best HPT elements into a package intervention approach in a format affordable to small businesses, small businesses are afforded the opportunity to use the tools of the field at a fraction of the cost. The key is to produce an intervention that is applicable to a large number of small businesses while still affordable to each individual businesses.

#### METHOD

The participants consisted of customers (i.e., owner/operators of chimney restoration businesses) who conducted business with a midwestern-based company called SOLID/FLUE Chimney Systems, Inc. SOLID/FLUE distributed a cementitious material (called SOLID/FLUE) used to reline and restore chimneys. The customers were operating under a dealership agreement or a franchise agreement and used the SOLID/FLUE product to line their customers' chimneys. At the time of the study, there were 52 businesses authorized to sell and install the SOLID/FLUE product throughout the United States and Canada. All 52 SOLID/FLUE customers were given the opportunity to become involved in the study.

The SOLID/FLUE service is a unique method of chimney restoration marketed to homeowners in need of chimney repairs. The SOLID/FLUE process is a restoration process which relines and restores damaged and/or improperly built masonry chimney. The process involves thoroughly cleaning a chimney, removing any clay tile which may be in the chimney cavity, and then inserting a 35-40 foot inflatable rubber former into the chimney. The former is inflated to the proper size needed and a lightweight cementitious (SOLID/FLUE) material is then pumped around the former. The material hardens overnight and the next day the former is removed creating a one-piece, highly insulative chimney liner inside of the masonry cavity.

A homeowner may be made aware of this need by seeing visual signs of chimney deterioration, by experiencing a chimney fire and having a fire official or chimney sweep inform them of the damage, by adding or changing an appliance (woodstove, furnace,

etc.) or by having their chimney inspected by a chimney service repair person or home inspector.

A typical SOLID/FLUE liner may cost a homeowner \$2,000 to \$2,500. A SOLID/FLUE dealer may complete 50 to 100 chimney lining jobs per two-person crew each year. All SOLID/FLUE dealers in this experiment had crews of two to three men.

The author owned a company that locates, equips, trains and then supports companies that provide SOLID/FLUE services. This support includes resupply of the SOLID/FLUE product and various other products as well as performance improvement services to these participants. The parent company was very interested in developing a network of financially strong dealers. Increasing the financial strength and stability of the customer network was expected to also improve the parent company's financial strength.

Four customers participated in the experiment. The companies were small (less than \$1,000,000 in sales volume), privately owned and managed chimney service companies. The companies were located in the central and eastern portions of the United States. Each company provided the SOLID/FLUE service to its local community and serviced an area equal to approximately a 50-mile radius of its office. Although some of the companies who participated offered other services besides SOLID/FLUE, each company had separated its SOLID/FLUE division to operate as an individual profit center. Each SOLID/FLUE division was managed by a separate manager. Within the SOLID/FLUE division, a minimum of 75% of the total sales volume was created through sales of SOLID/FLUE chimney linings with the remainder resulted from miscellaneous

chimney service work including cleanings, masonry repairs and assorted other small maintenance work.

All employees of the participating companies ranged in age from 30 to 55 years of age. Employees' experience with the SOLID/FLUE system ranged from 6-15 years. All participants operated a business prior to operating the SOLID/FLUE business. The individual background of each participant is as follows:

#### **Participants**

#### Participant A

Participant A was a SOLID/FLUE dealer for 15 years. He had a background in sheet metal work before becoming involved in SOLID/FLUE. He originally started his SOLID/FLUE business in the midwest and eight years, before the study onset, he moved to New Jersey because of the large volume of SOLID/FLUE work in the New Jersey market. Participant A is 60 years old and operated his business with 3 to 4 additional employees (depending upon his current backlog and the time of the year).

#### Participant B

Participant B was a SOLID/FLUE dealer for 13 years. He had a background in civil engineering (B.A. in Civil Engineering – University of Maine) and worked on large construction projects (over 25 million in dollar volume) before becoming involved in SOLID/FLUE. He started as the general manager for a customer's business in New Jersey and later purchased the dealership. His territory included the west central New

Jersey market as well as eastern Pennsylvania. He was 38 years old and operated his business with 3 additional employees.

#### Participant C

Participant C was a SOLID/FLUE dealer for 8 years. Participant C also owned a smoke and fire restoration company, in which he spent the majority of his time. His SOLID/FLUE dealership was managed by another employee. This manager had been operating a SOLID/FLUE dealership for 4 years. The SOLID/FLUE manager had originally been involved in the production end of SOLID/FLUE but at the time of the study he handled all areas except production. However, he remained still responsible for the scheduling and the selling of the jobs and for overseeing the production crews. The business territory included the central Pennsylvania market as well as the western suburbs of the city of Philadelphia.

#### Participant D

Participant D had been a SOLID/FLUE dealer for 6 years. Participant D also owned a smoke and fire restoration company located in western Connecticut. He spent the majority of his time managing the day-to-day operations of his fire restoration company. His SOLID/FLUE business was managed by another employee. The SOLID/FLUE manager was originally a carpenter at the time of the study was responsible for all areas of the SOLID/FLUE business. He managed a production manager while spending the majority of his time estimating and selling the SOLID/FLUE work. Participant D's territory included primarily the central and western counties of Connecticut.

All participants passed a certification test upon initial completion of their SOLID/FLUE training when they originally became SOLID/FLUE customers. This certification test covered topics necessary for the participants to master in order to properly line chimneys according to national building codes as outlined in the National Fire Protection Agency's (NFPA) 211 code on chimneys, fireplaces, and venting.

#### Independent Variables

#### Preliminary Training

Each participant attended a one-week training program at the SOLID/FLUE corporate headquarters upon their initial purchase of their SOLID/FLUE dealership.

During the course of this training program, each participant was required to receive a passing grade (90% correct responses on a multiple choice and short essay exam) to validate their understanding of the concepts being taught. The test involved national building code requirements for chimney installations (as taken from National Fire Protection Agencies 211 code book) as well as various chimney flue-sizing questions to assure a knowledge of how to put the proper size of a chimney flue into each installation. The primary emphasis of the test was on installation and code issues.

Prior to implementing the intervention as outlined in this thesis, the five tools as outlined in the introduction section of this paper were used in developing the Impact Groups. The SOLID/FLUE business system was analyzed using Brethower's TPS, an "is vs. should" analysis was done on overall indicators of the participants' businesses, businesses were viewed at the organizational, process and individual level, the use of the

ACORN test was implemented within the intervention process, and feedback systems developed.

The Impact Groups meetings were offered to the SOLID/FLUE participants at six-month intervals. The meetings were held in hotel conference rooms. The hotels were all located within 45 miles of the host's location. All meetings were held on a Friday and Saturday of the week. The visiting companies arrived on Thursday afternoon or evening and many would attend a group dinner the evening prior to the meetings. The meetings would then start promptly at 8:00 a.m. on Friday.

The format of the Impact Group was as follows:

- 1. A group of participants met every 6 months at one of the participants' locations for a two-day program.
- 2. During this meeting, all participants shared goals, financials, and their problems with all other participants (and the researcher) in attendance. Goals and financial forms were provided by the home office to guide participants in creating their goals and producing their financials (Appendices A and B). The Impact Group process is as described in Appendix C.
- 3. Input was given to all attendees on the validity of their goals and their past progress towards previous goals.
- 4. During the late afternoon of the first day of the program (on Friday), all companies except the host shared their information (goals, financials, problems) with the group and the focus then switched from all of the partipants in attendance to the host participant.
- 5. The host participant then shared his goals, financials and problems with the other participants.
- 6. The host participant's key process was analyzed.
- 7. The host participant's key employees were interviewed.
- 8. Key problems and alternative solutions were offered to the host participant and the hosts' employees.

- 9. Upon leaving the program, participants submitted weekly financial information to the researcher on four key areas of their business.
- 10. The group meets again in 6 months and the process repeats itself.

Prior to the meetings, each attendee was required to provide:

- 11. A list of their goals for the next six months. Four of the categories were pre-determined and were defined as sales, production, marketing and backlog. The goals were to have completion dates.
- 12. Attendees also provided a copy of their financial statement grouped into common line item categories. A copy of the common financial line categories is included in Appendix B.
- 13. Between each meeting, each attendee had his/her performance monitored on a weekly basis by forwarding information (via fax) on their actual performance in five key areas, including: (a) Estimates written; (b) Backlog produced; (c) Marketing contacts made; (d) Work produced; (e) Gross profit.

The attendees were updated between meetings on a three-month interval regarding their progress towards their own goals and also received information on all other attendees' progress towards their goals.

According to the TPS analysis conducted for the purposes of this study, external feedback was provided to attendees in the form of job satisfaction, profit/loss changes, and volume growth.

- 1. Job satisfaction forms the results of the satisfaction form are reviewed during the overview of the company at each Impact Groups meeting (see example satisfaction form Appendix D).
- 2. Profit/loss and volume growth volume growth is noted during each 6-month meeting and is covered in detail when each participant is presenting their business goals during each Impact Group meeting.

As a result of the TPS analysis, the internal feedback provided to the attendees included the following items.

- 1. Work produced was communicated in the weekly feedback system that each Impact Groups participant received via fax from the SOLID/FLUE home office (see Appendix E for a sample feedback form).
- 2. Feedback on estimates written was communicated in the weekly feedback system that each Impact Groups participant received via fax from the SOLID/FLUE home office (see Appendix E for a sample feedback form).
- 3. Feedback on marketing contacts made was communicated in the weekly feedback system that each Impact Groups participant received via fax from the SOLID/FLUE home office (see Appendix E for a sample feedback form).
- 4. Feedback on backlog produced was communicated in the weekly feedback system that each Impact Groups participant received via fax from the SOLID/FLUE home office (see Appendix E for a sample feedback form).
- 5. Feedback on overhead per month was taken from the income statements and goal statements and was communicated during the Impact Groups meetings during each participants' overview of their business.
- 6. Feedback on net income per month was communicated during the Impact Groups during each participants' overview of their business.

The attendees were required to forward their actual financial information in advance of attending the Impact Group. These data were transformed to a spreadsheet format to show comparisons between each company similar sales volume. All attendees were shown a copy of an exemplar's financial sheet for their particular volume level (see Appendix F for an example of the financial sheet distributed to attendees). These forms clearly identified the gap between what each attendee was doing and what others in similar positions were doing.

Attendees were required to bring to Impact Groups meetings information on their goals for their businesses. The goals were arranged in common categories including goals for estimates, goals for backlog, goals for overhead, etc. A list of the goals is included in Appendix A. Attendees could also supply goals for miscellaneous items. During each attendee's time to provide a summary review of his company's past six months performance, he explained his progress on his goals by identifying what his goals was and how the company performed on the goal. Each attendee then identified his new goals for the next 6 months (or longer). At that stage, the group provided suggestions and an analysis of how to decrease the gap between what is and what should be. The group then identified his new goals for the next 6 months (or longer).

At the organizational level, an organization map was produced showing the key functional pieces of the business. Refer to Figure 2 for the SOLID/FLUE organizational map.

Many of the indicators for the weekly internal feedback measures were taken from this analysis of the business. Because of the small number of employees and the fact the owner/operator was the manager of the various functional units, the organizational level analysis also serves to show the overall products for the individual level of performance for the owner's behavior (or general manager, if appropriate).

Also at the individual level, the Impact Groups served as a method to manage and create additional contingencies to maintain an individual's performance. When serving as the host company, the contingencies surrounding the owner/manager's performance were analyzed using a questionnaire designed using Gilbert's (1978) Behavior Engineering Model. The members of the group also served as a key variable to

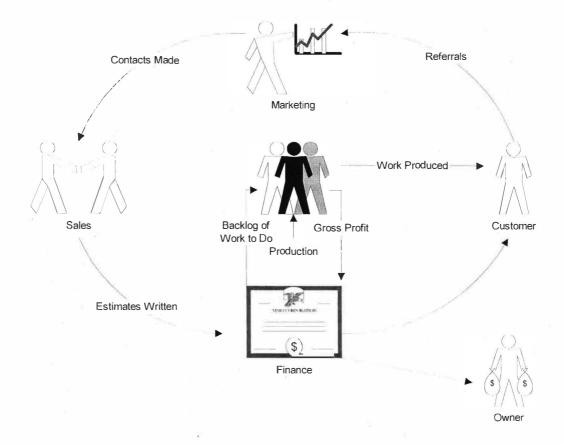


Figure 2. SOLID/FLUE Organizational Map: The key functional pieces of SOLID/FLUE business.

to provide a level of accountability to the owner/managers. By reviewing each other's businesses on a continual basis, the members gained an intimate knowledge of what was working and what was not working in each of the businesses. They occasionally questioned why something was not working and, when solutions were offered, the structure of the program created an environment where the proposed solutions were followed up on during a later meeting.

At the process level, an exemplary process analysis was conducted on the key SOLID/FLUE process. The key process includes all the major steps implemented from

the first call from a homeowner (or insurance adjuster) until the job is completed. This process was identified as "The Eight Step Process" and is shown in Appendix G.

The host company of the Impact Group placed their key process on one sheet of paper for all of the other attendees to review during the meeting. During the latter part of the first day of the Impact Group, the host was required to give all other attendees a walk through of their key process showing them their one page overview of the process as well as giving them a verbal explanation of this process. This explanation was accompanied by handouts of all of the forms used during this key process to all of the other attendees. The second day of the meeting includes all of the attendees reviewing the one-page handout of the key process and conducting an analysis of any gaps in the host company's process.

The ACORN test was used during the Impact Groups when participants shared their business goals with the other participants. The ACORN test information was displayed at the front of the room and all participants were prompted that all of their goals must meet this test as criteria for the goals being accepted by the group. After each individual goal was shared with the group members, the participants were asked to signal approval or disapproval. If a particular goal did not pass the ACORN criteria, the member (or members) who disapproved explained their rational for disapproval. The attendee whose goal was declined could then reconsider their goal and formulate another goal to pass this test.

As noted earlier, many of the feedback pieces were delivered using a format that provided feedback "just in time" to produce valuable information to the performer. This information flow is described below.

## Dependent Variables

The primary dependent variables were the amount of net income (as a combination of owner/managers' salary plus net income) and the number of goals accomplished. Measurement of goals occurred at every Impact Groups meeting and at three-month intervals between each meeting.

Other secondary measures were collected on the following response products:

(a) estimates written, (b) backlog produced, (c) marketing contacts made (d) work produced and (e) gross profit. These measures were collected on a weekly basis and forwarded to the SOLID/FLUE home office for processing.

## Marketing Contacts Made

This measured the quantity of marketing visits made to insurance officials, fire officials, building officials or any other person (excluding current customers) who may have had an interest in a chimney restoration system. It did not include sales calls over the telephone or visits to potential customers to give an estimate. Each contact required a face-to-face visit. When groups of people were addressed (such as in a meeting with insurance adjusters), then each person represented at the meeting was to be counted as a contact made.

#### Estimates Written

This was a quantity measure of the number of estimates written for a SOLID/FLUE lining job. When an estimate was made that included two or more SOLID/FLUE linings at the same property, this counted as one estimate.

## Dollar Backlog

This was a quantity measure in dollars of the work sold (work for which deposits have been received). It quantified the total amount of work to do that has not yet been produced.

## Work Produced

This represented a quantity measure of the dollars of the total value of work produced through the week. For instance, if a \$5,000 job was started on Monday at 8:00 am and completed by Friday at 5:00 PM, then this represents \$5,000 in work produced. However, if a \$5,000 job was started on Monday at 8:00 am and the job was half completed by Friday at 5:00 PM, then this represents \$2,500 of work produced during the week.

## Gross Profit

This represented a quantity measure of the total dollars produced per job less the direct labor and material costs per job (see Appendix H).

### Interobserver Agreement

Interobserver agreement was conducted by reconciling the participants' data to the home office with actual material purchases made through the SOLID/FLUE home office. Each year a survey was completed by the majority of SOLID/FLUE customers and data were generated on numerous aspects of the participants' businesses. Among the data used to reconcile the participants' actual data with their material purchases was the following:

1. The average retail job price is \$2,500

- 2. The average SOLID/FLUE bags used per chimney is 15
  Using the above mentioned data, the following formula was used to validate the accuracy of the data provided to the experimenter:
  - 1. Work Produced: Monthly mix purchases were divided by 15 to determine the actual number of jobs done during the period
  - 2. Dollar Backlog: The number of jobs completed was then multiplied by \$2,500 to determine the work produced as well as used to monitor the backlog figure being provided to the home office.
  - 3. Estimates Written: The total number of estimates written were divided by the participants' sales closure rate as provided at each Impact Group meeting. This figure was then multiplied by \$2,500 and compared with the participants'.

#### Social Validation

Gilbert (1978) stated that one of the primary purposes of businesses is to strive to constantly increase the worth of the organization. He describes worth as the value received divided by the cost incurred. Using Gilbert's model in this experiment, worth could also be measured as the increase in owner's equity during the period of the intervention. Owner's equity represents the income retained after all expenses have been subtracted from the revenue received. For social validation purposes, each participant's financial statements were recorded for the fiscal year covering the experimental period and equity was calculated.

## Experimental Design

For measures of net income, the experimental design was an AB design involving four companies. For all other measures, the experimental design was a B design. The

participants each entered the experimental period during the same time period. The participants were exposed to 8 Impact Groups meetings during the experiment. The total experimental period lasted approximately 26 months. Weekly feedback data were collected during the entire experimental period.

## **Human Subjects Protection**

The companies were not exposed to any type of intervention that they would not have been exposed to during the normal operating procedures of their business. The Impact Groups are a service that are offered to each SOLID/FLUE dealer. Every SOLID/FLUE dealer is reminded of this program in newsletters and other promotional material distributed to them during the normal course of doing business. SOLID/FLUE offers it to the dealers as a means to accelerate their learning curve, as well as a method to provide contingencies to the companies to help them improve their businesses.

All companies were given post-briefing sessions after the final phase of the intervention. The post briefing session consisted of handing out a letter of informed consent (see Appendix I) as well as verbally explaining to each company the purpose of the research. Data have continued to be collected past the final session as this data collection service is offered to all SOLID/FLUE dealers including all of the dealers who participate in the Impact Groups meetings.

This experiment was approved by the Western Michigan University HSIRB (see Appendix J).

#### **RESULTS**

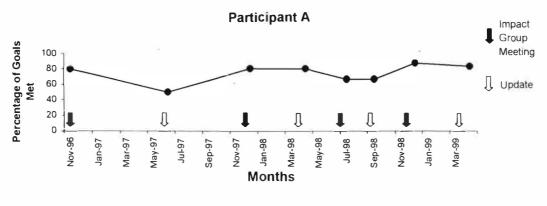
Figure 3 shows the percentage of goals met for company A, B, C, and D over the experimental period. The graphs note the Impact Groups as well as the updates as they occurred over eight periods, covering a time period of approximately three years. Over the three year intervention period, the percentage of goals met remained relatively unchanged. Each participant's data showed much variability and therefore it would be very difficult to make an argument that any of the participants improved in their percentage of goals met.

However, in looking more closely at some of the other data that were collected, other areas of measurement seem to suggest an effect. Of primary interest was the measurement of changes in net income (Figure 4). The primary goal of the Impact Groups meeting was to improve the net income and the efficiencies of the attending businesses.

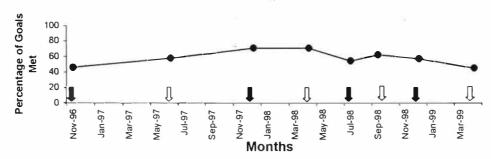
For all participants, there can be seen a definite upward trend in the average net income per year (see Figures 4 and 7). For company A, the net income increased an average of \$24,100 per year; company B net income increased an average of \$69,855 per year; company C net income increased an average of \$31,021 per year; and company D net income increased an average of \$56,023 per year.

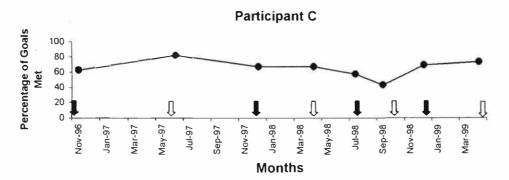
Figure 5 and Figure 6 indicate little or no change in production and gross profit per job for almost every company.

Company A showed no change in gross profit goals during the first couple of



## Participant B





## Participant D

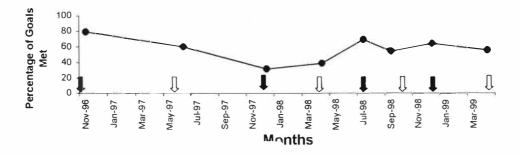
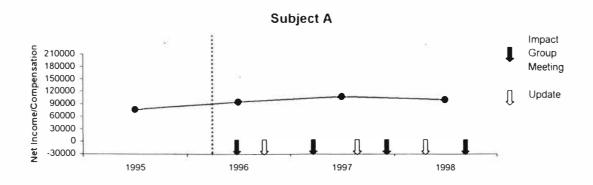
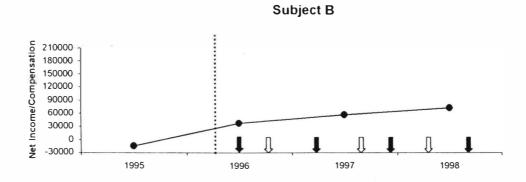
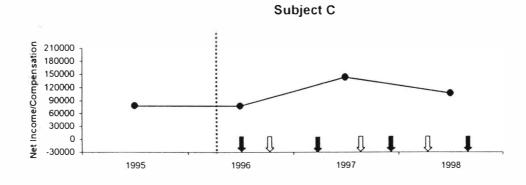


Figure 3. Percentage of Goals Met







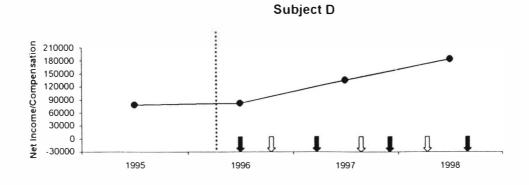


Figure 4. Net/Income Compensation

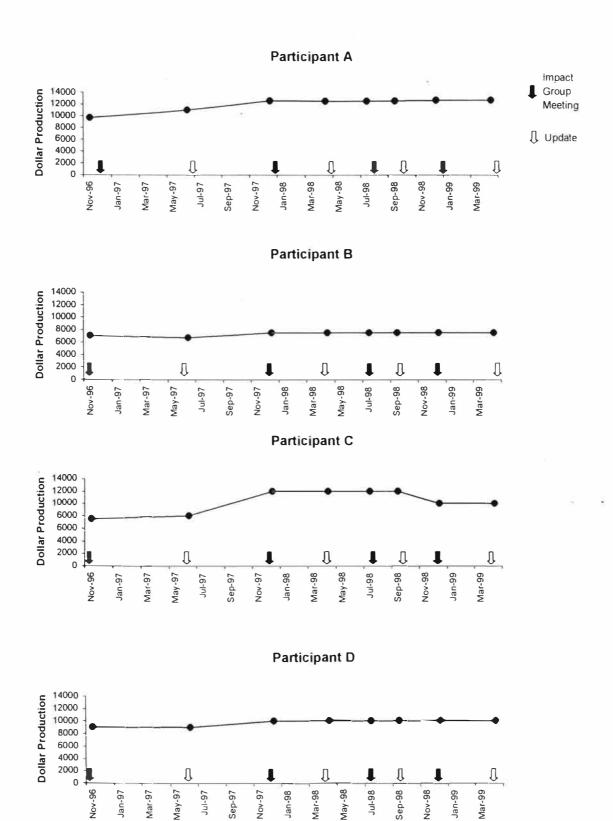
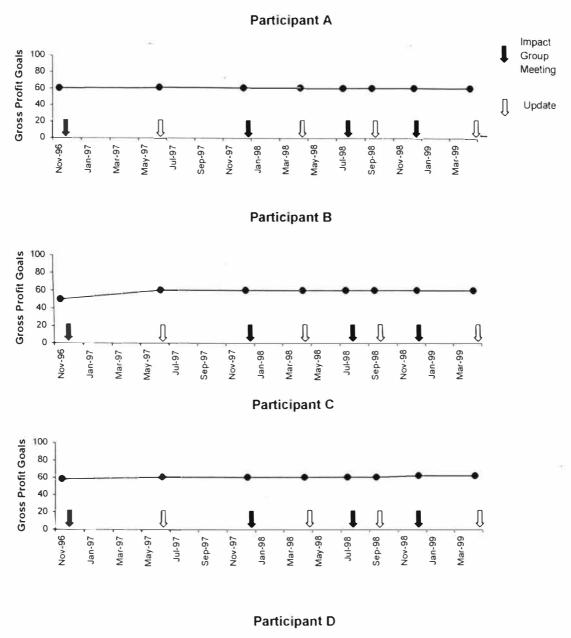


Figure 5. Dollar Production



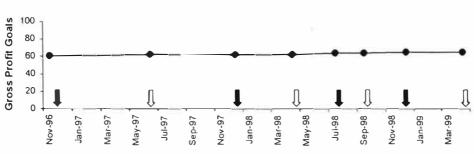


Figure 6. Gross Profit Goals

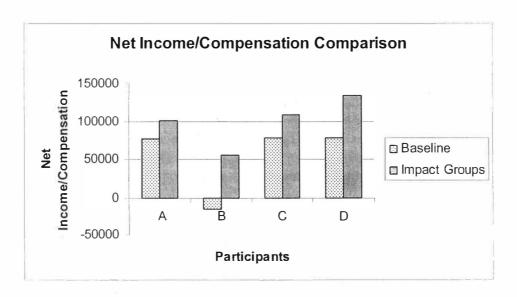


Figure 7. Net Income/Compensation Comparison

years of the experiment from 60% to 61%, only to settle at 60%. However, the company continued to show increases in production throughout the duration of the experiment. The production increased from \$9,615 to \$12,600 per week. This \$2,985 per week increase translates into an additional \$93,132 gross profit per year (assuming a gross profit of 60%). It should be noted that gross profit (after the overhead has been covered) in a SOLID/FLUE business typically goes directly to the bottom line (net income) and dramatically raises the profitability of the business.

Company B showed an uptrend in gross profit from 50% to 60% and maintained that standard for the duration of the experimental phase. Company B's production goals initially dipped and then increased to a level higher than their beginning level. They had originally started at \$7,000 per week and were at \$7,500 per week by the end of the experimental period. The additional \$500 per week translates into an additional \$26,000 in production annually. However, the real increase in profitability can be attributed to the

additional 10% gross profit on all of the jobs completed. The difference of 50% gross profit at \$7,000 per week versus 60% gross profit at \$7,500 per week equals an additional \$52,000 in additional gross profit per year.

Participant C showed gradual increases in gross profit moving from 58% to 62% by the end of the experimental period. Production showed an upward trend, although it did dip slightly at the end of the period. The beginning figures show a gross profit of 58% on production of \$7,500. This equals a total annual gross profit of \$226,200. At the end of the experimental period, the figures showed a gross profit of 62% along with a production of \$10,000. This equals an annual gross profit of \$322,400. The difference in gross profit equals \$96,200 (\$322,400 less \$226,200) per year.

Company D's gross profit increased during the duration of the experiment. It rose from 60% to 65%. Along with this, the production also climbed from \$9,000 to \$10,000 during the experimental period. This change represents an average increase of \$58,000 in gross profit per year (\$9,000 multiplied by 52 multiplied by 60% equals \$280,000 vs. \$10,000 multiplied by 52 multiplied by 65% equals \$338,000, \$338,000 less \$280,000 equals \$58,000).

The preceding may offer a reason why the participants' businesses were gaining in profitability during the duration of the experiment while the percentage of their goals accomplished was remaining steady. Although each participant's business showed variables of change different than the other, the net effect was an increase in the net income/compensation.

#### DISCUSSION

A number of points can be made regarding the effect of the Impact Groups. The net income for all four dealers increased at a steady rate. This effect may have also been from the natural growth of each business as each matured in its marketplace or from strong market conditions being more favorable for increasing the profitability of the SOLID/FLUE participants. The U.S. economy had been in an era of unprecedented growth during the experimental period. This factor cannot be discounted and must be considered as a possible cause for the business growth. This paper did not study the differences of growth and profitability rates comparing the experimental group with a control group. Comparing the effects of the Impact Groups on the dealers' businesses to untreated control businesses with similar characteristics may have addressed this issue.

No change was observed in the data except in net income/compensation.

However, this may have been because of changes in pricing by the participants for their services which enabled them to improve their profitability per job, and thus their overall net income.

From a behavioral perspective, the participants' changes in behavior producing the increases in goal criteria could have been caused by a number of factors. Each participant's goal setting behavior was being produced in a setting where other participants as well as personnel from the home office were present. This setting may have been operating as an establishing operation which made setting low goals more aversive and higher goals more reinforcing. The Impact Groups setting as well as the weekly feedback may have been creating an environment which produces behavior that is

of considerable strength towards completion of the goals. The goals may have been a bit high as evidenced by the companies' difficulty in attaining more of them over the course of the intervention, but the participants were producing daily behavior which was creating small accomplishments that, when added together over time, were moving the participants closer towards meeting their overall goals. This was producing improvements in their business but not necessarily accomplishments of their goals. It was also producing businesses that were steadily increasing in profitability.

Goals have often been conceptualized as statements of desired outcomes. In the current study, the participants may have been producing goals based upon best case conditions and not taking into consideration everything that may go wrong. A small service business has very limited financial, equipment and human resources. Any small problem in any one of these can have dramatic impact on the company's ability to meet a best case goal. For instance, company A's production dropped to below the desired level of \$12,000 per week and eventually lowered its goal level to \$10,000. Although he was never able to produce the desired level of \$12,000, he did produce work towards this goal that enabled him to have the most profitable years of his business. At the time of this writing, his company remained profitable even though they have yet to average \$10,000 of production per week.

The rules governing the goals may also be different for each company. For instance, for some companies a goal may be a statement of a desired outcome, and the criteria for success are not dependent upon whether or not the goal is met. For other companies, the rules regarding the goals make goal attainment the criterion for success.

Obviously, each company has a different behavioral history and their rules towards goals

are many times different from each other. This issue was not discussed among group members although initially the assumption from this researcher was that all companies viewed attainment of their goals as the criterion for success.

Another interesting phenomenon was revealed when looking further at the data in the results. These data showed that the participants were gradually increasing their goals and, although not actually reaching them at any higher rate of occurrence before or after the Impact Groups had begun (and the experiment had begun), their performance was consistently increasing. It was almost as if the experiment was a changing criterion design and the companies were the ones to change the criterion. The companies were asked during the Impact Groups to state their goals in the presence of their peers and this may have produced an establishing operation wherein stating goals higher than the previous goals (whether or not the previous goals were attained) was reinforcing and stating goals equal to or less than the previous goals was aversive.

The use of this type of intervention within small businesses is novel and remains a ripe field for gathering empirical data. This type of research was a packaged intervention approach and it may be useful to break down individual parts of the interventions to obtain more accurate information concerning the controlling variables having an effect on the companies. This research included weekly feedback as well as 6-month meetings and it may be valuable to tease out the effect of each. There were also specific parts of the actual intervention (during the 2-day meeting) that may be more effective than others and adjusting the meetings while monitoring the data and results could prove valuable.

This thesis included four participants and it would be worthwhile to increase the number of companies involved to obtain a more robust analysis of the effects of the

intervention. At the time of the intervention, approximately 50 SOLID/FLUE dealers were offered the opportunity to participate in the Impact Group process. The companies who elected to participate may have been more motivated to improve their businesses than the others, and thus may have improved their business performance whether they participated in the Impact Group process or not. It may also be very valuable to include a control group having no exposure to the intervention and to analyze this in relation to the experimental group.

The Impact Group process has been hard to maintain since the end of the intervention. The existing members have been interested in continuing their participation, but it has been difficult to find other companies interested in becoming members of the group. New members tend to excite the existing members, as they seem to enjoy the opportunity to analyze different companies and offer recommendations and solutions to their problems. It also provides the members additional examples and non-examples to learn from.

Another area of consideration would be in duplicating this type of research in a recessionary market. This would tease out the effects of a strong economy and give the researchers a more accurate analysis of how robust this type of intervention is in different economic conditions.

Additional experiments could be conducted using this concept with non-similar type businesses (having different industries represented in the Impact Groups) and studying the effect it may have. It would also be useful to repeat this experiment across industries and business sizes. Currently, this type of process is being used in businesses

within the service sector and experimental work could be done using this process in manufacturing businesses as well.

Additional management of the contingencies could be done with the Impact Groups concept. Besides using peer consequences as one of the most powerful contingencies, other incentives could be used such as product discounts, monetary incentives, etc. The prospects for this type of research in the various industries are endless and need to be explored. With the strong growth of the small business sector in the U.S. economy and the role that small businesses play in employing our workforce, interventions that improve small business performance may prove invaluable. The strength of our small businesses may well decide the future of the U.S. economy in the 21st century.

## Goals

Goals	Name		
Date When Goal Will Be Met	Goals - What you would like to accomplish		
<u>Sales</u>			
*	Volume per week		
	Closure rate: Insurance	Non-insurance	
<u>Marketing</u>			
*	Estimates per week		
*	Dollar volume backlog	_	
*	Marketing contacts per week		
<b>Production</b>			
*	Gross profit per job	_	
*	Production per week	_ * *	
	Customer satisfaction points per job _		
Administration/F	<u>Financial</u>		
	Net income per month		
	Overhead per month		
Miscellaneous G	oals - Must be measurable		
		æ.	
	(A)		

<sup>\*</sup> We can help track with you on our feedback program. If you plan to meet goal immediately put today's date.

### **Financial Forms**

Jan. - Dec. 2002 Actual Jan. - Dec 2003 Budget **Gross Sales** Cost of Goods Sold Material (Mix) % Material (Other) % % Labor % Workman's Comp. Payroll Tax Subcontract Rental Equip. Permits Freight Subtotal Direct Expenses % % Gross Profit % % Overhead Office Supplies Travel & Enter. **Small Tools** Bad Debt Gas & Oil Maintenance Bank Charges Marketing/Adv. Telephone Refuse Uniforms Warranty Supervision & Sales Wages Supervisory Payroll Taxes Insurance Rent Utilities Truck Lease Dues & Subs Acctg & Legal fees Training & Conv. Home Shows & Fairs Yellow Pages Interest Depreciation Admin. Expenses & Charges Subtotal Overhead Exp. %

Net Income

<sup>\*</sup>All % figures should reflect the amount your figuring divided by the gross sales amount (then times 100). For instance, if direct expenses are \$20,000 and gross sales are \$50,000, then the percentage figure would be \$20,000/\$50,000 or .40. To turn this into a percentage-multiply it times 100.

# Program Agenda IMPACT GROUP MEETING

<u>TIME</u>	First Day Description	<b>Duration</b>	Who Attends
8:00 - 8:30	Review Company 1	30 min.	Guests, Host
8:30 - 9:00	Review Company 2	30 min.	Guests, Host
9:00 - 9:10	Break	10 min.	
9:10 – 9:40	Review Company 3	30 min.	Guests, Host
9:40 - 10:10	Review Company 4	30 min.	Guests, Host
10:10 - 10:20	Break	10 min.	
10:20 - 10:50	Review Company 5	30 min.	Guests, Host
10:50 - 11:20	Review Company 6	30 min.	Guests, Host
11:20 - 11:30	Break	10 min.	
11:30 - 12:00	Review Company 7	30 min.	Guests, Host
12:00 - 1:00	Lunch	60 min.	
1:00 – 1:15	Host company sales presentation	15 min.	Guests, Host
1:30 – 2:00	Review Company 9	30 min.	Guests, Host
2:00 – 2:10	Break	10 min.	
2:10 – 2:40	Review Company 10	30 min.	Guests, Host
2:40 – 3:10	Review Company 11	30 min.	Guests, Host
3:10 – 3:25	Host company sales presentation	15 min.	Guests, Host
3:25 – 3:35	Break	10 min.	
3:35 – 5:00	Interview Employees	85 min.	Guests, Host
6:00 - 6:45	Process Walk Through at Host Location	45 min.	Employees Guests, Host
6:45 – 8:00	Host company provides dinner	75 min.	Employees Guests, Host Employees

## Program Agenda

<u>TIME</u>	Second Day Description	<u>Duration</u>	Who Attends
8:00 – 8:40	Compare Exemplary Process to Host Process/Good Things	40 min.	Guests
8:40 - 8:50	Break	10 min.	
8:50 – 9:35	List Problems & Alternative Solutions	45 min.	Guests
9:35-9:45	Break	10 min.	
9:45 – 11:45	Good Things (explain to host & employees) and Problems & Alternative Solutions	120 min.	Guests, Host Employees
11:45 – 12:45	Lunch	60 min.	
12:45 – 1:15	Group Breakout	30 min.	Guests, Host
1:15 – 1:45	Reconvene and Get Consensus	30 min.	Employees Guests, Host
1:45 – 2:15	Non-sugarcoated Version to Owner/Manager	30 min.	Employees Guests, Host
2:15 – 2:45	Pick next site date & host Other issues Evaluation/Closing Comments	30 min.	Guests, Host

Customer Name:	Job Satisfaction Forms			
Customer Address:				
Please rate the following:	Very	Unsatisfied		Very
Comments:		2	3	4
Comments:				
Cleanup during and after job  Comments:		2	3	4
Comments,		*,	¥ .	,
Quality of completed job  Comments:	1	2	3	4
Overall professionalism  Comments:	1 =	2	3	4
Office/Sales Staff: Courteous, friendly service	1	2	3	4
Comments:			E.	

## Feedback Program

Weekly Feedback Form	N	ame:	
		Allen - SOLID/I	FLUE
Neek Ending (Friday):		Phone Numbe	er:
fax every Monday before noon)		Fax Numbe	er:
		<u>Actual</u>	Standard
Estimates Written			
This is a quantity measure of the number of for a SOLID/FLUE lining job. When an estimate includes two or more SOLID/FLUE linings approperty, this is still counted as only one estimate.	mate is written that at the same		
Work Produced			
This is a quantity measure in dollars of the produced through the week. If a \$10,000 jo Monday at 8 a.m. and by Friday at 5 p.m. it completed, then this represents a \$5,000 in the week.	ob was started on was half		
Dollar Backlog			
This is a quantity measure in dollars of the sold but not yet completed.	total of all work		
Marketing Contacts Made			
This measures the quantity of "face to face with insurance officials, building officials, fir officers, etc. It does not include sales telep to potential customers to give an estimate. people are addressed (such as a meeting vadjusters) then each person present may comade.	e prevention whone calls or visits When groups of with insurance		8. a
Gross Profit Per Job: (below)			
<u>Name</u> <u>Act</u>	ual Gross Profit		<u>Standard</u>

# Exemplar's Financial Sheet FINANCIAL STANDARDS

	Gross Sales	\$87,500	\$137,500	\$212,500	\$237,500
	Cost of Goods Sold  Material (mix)  Material (other)  Labor  Workman's Comp. (labor)  Payroll Taxes (labor)  Subcontract Labor  Rental Equipment  Permits	15750 1750 7000 578 711 0 1750 875	24750 2750 11000 908 1059 0 2750 1375	38250 4250 17000 1403 1518 0 4250 2125	42750 4750 38000 3135 3342 0 4750 2375
	Gross Profit as Percentage	59086 68%	92908 68%	143704 68%	138398 58 <b>%</b>
3	Overhead Per year Office Supplies (.5%) Travel & Entertainment (.2%) Small Tools (2%) Bad Debt (.5%) Gas (3%) Equip./Veh.Maintenance (2%) Bank Charges (.1%) Marketing/Advertising (2%) Telephone (.7%) Refuse & Laundry (.3%) Uniforms (.3%) Freight (.1%) Warranty (1%) Gen. Mang. /Owner's Salary Workman's Comp (Salary) Payroll Taxes (Salary) Insurance Rent Utilities Truck Lease Dues/Subscriptions Legal Fees Accounting Fees Training & Convention Home Show & Fairs Yellow Pages Interest Expenses Depreciation/Amortization	438 175 1750 438 2625 1750 88 1750 612 263 263 88 875 25000 1688 2130 6000 2400 3600 3600 1000 5000 1000 2000 3600 3600 3600 3600 3600 3600 3600 3600 5000	688 275 2750 688 4125 2750 138 2750 963 413 413 138 1375 30000 2025 2513 6000 2400 3600 3600 1000 2000 3600 3600 3600 3600 3600 3600 5000	1063 425 4250 1063 6375 4250 213 4250 1488 638 213 2125 45000 3038 3660 6000 2400 3600 500 1000 2000 3600 3600 5000	1188 475 4750 1188 7125 4750 238 4750 1663 713 713 238 2375 50000 3375 4043 6000 2400 3600 1000 5000 1000 2000 3600 3600 5000
	Net Income	-10407	11344	35455	21254

Thhemary of

# The Eight Step Process

Process	Owner	
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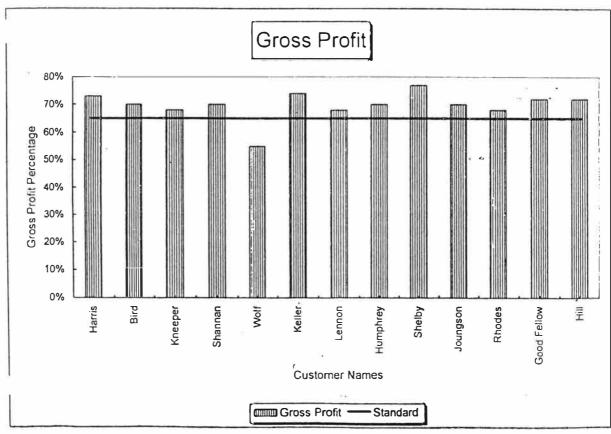
# Eight Step Process

		Form to Use Person Responsible
1.	When call comes in, immediately fill out "lead sheet" and transfer appropriate information to "tracking form".	Lead Sheet Tracking Form
2.	Take lead sheet, qualify the call (within 24 hours), schedule appointment (schedule 80% within 3 days of of call), add "work to be done" and "check list" form to "lead sheet" and place in folder.	Lead Sheet Work to be Done
3.	Go to customer, examine chimney, take measurements and photos. Fill out work to be done & check list forms.	Work to be Done Check List
4.	Return, type estimate & (hand deliver if necessary) within 24 hrs.	Estimate Form
5.	Upon confirmation, post to production calendar.	Prod. Calendar
6.	Using job folder, explain job to crews giving time allowed and estimate of material needs.	Lead Sheet Work to be Done Check List Estimate Form
7.	Upon completion, collect money and satisfaction form from customer and job costing form from crew chief.	Satisfaction Form Job Costing
8.	During next weekly meeting, share satisfaction info. and compare estimate to actual labor and material.	Satisfaction Form Gross Profit Graph Joh Costing

## Gross Profit Feedback

**Gross Profit** 

N	ame	Actual	Standard	
	1	73%	65%	
		70%	65%	
	i	68%	65%	
		70%	65%	
1		55%	65%	
	1	74%	65%	
		68%	65%	
1	i	70%	65%	
1	-	77%	65%	
	1	70%	65%	
	-	68%	65%	
		72%	65%	
	1	72%	65%	
1		Average	Variance	•
1		70%	5%	



Appendix

#### Letter of Informed Consent

Western Michigan University Department of Psychology

Principal Investigator: Dale Brethower, Ph.D.

Research Associate: Doug LaFleur

HSIRB Chair WALL

I have recently participated in a research project entitled: The Effects of a Multicomponent Intervention on the Accomplishments of Goals in a Small Businesses Setting. I understand that this research was intended to study the effects on a multicomponent intervention using goal setting, feedback, and incentives in a small business setting. I further understand that this project is Doug LaFleur's thesis project.

My consent to participate in this project indicates that I have attended two "two day" sessions titled "Impact Groups" and have willingly shared my financial data and goal accomplishment data with other participating subjects and with the researcher. The purpose of this study is to determine the effects on a multicomponent intervention using goal setting, feedback, and incentives in a small business setting. I have been asked to provide specific, objective goals in various functional areas of my business as well as various sub-goals in these areas. I then met in two-day meetings on six-month intervals with other peers who have businesses providing similar services. During these meetings I compared goals, shared financial data and worked collectively with my peers to help improve my goal setting and completion of these goals. The setting and attainment of my goals served as a primary benefit of this research.

I understand that all future use of this information will be handled in a confidential nature. This means that my name will not appear on any papers on which this information will be recorded. The forms will all be coded and Doug LaFleur will keep a separate master list with the names of the participants and the corresponding code numbers. Once all data are collected and analyzed, the master list will be destroyed. All other forms will be retained for three years in a locked file in the Principal Investigator's facility.

As in all research, there may have been unforeseen risks to the participant. If an accident or injury occurred, appropriate emergency measures were taken: however, no compensation or treatment was made available to me except as otherwise stated in this consent form.

I understand that I may refuse to allow my information to be included in the research by Doug LaFleur without prejudice or penalty. If I have any questions or concerns about this study, I may contact either Doug LaFleur at 616-363-3824 or Dale Brethower, Ph.D. at 616-676-3485. I may also contact the Chair of Human Subjects Institutional Review Board at 616-387-8293 or the Vice President for Research at 616-387-8298 with any concerns that I have. My signature below indicates that I understand the purpose and requirements of this study and that I agree to participate.

Signature	Date



## WESTERN MICHIGAN UNIVERSITY

Date: 27 May 1998

To:

Dale Brethower, Principal Investigator

Doug LaFleur, Student Investigator

From: Richard Wright, Chair

Re: HSIRB Project Number 98-03-10

This letter will serve as confirmation that your research project entitled "The Effects of a Multicomponent Intervention on the Accomplishments of Goals in a Small Business Setting" has been **approved** under the **expedited** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

School Q. Wright

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination:

27 May 1999

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