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What are the impediments to the effective transfer of training information of technology advanced equipment in the food service industry

Kenneth Megarr

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WHAT ARE THE IMPEDIMENTS TO THE EFFECTIVE TRANSFER OF TRAINING INFORMATION OF TECHNOLOGICALLY ADVANCED EQUIPMENT IN THE FOOD SERVICE INDUSTRY

by

Kenneth P. Megarr

A thesis submitted to the Faculty of the School of Food, Hotel and Travel Management at Rochester Institute of Technology in partial fulfillment of the requirements of Master of Science

The Tenth day of the Eighth month,
the year of our Lord Nineteen Hundred and Ninety Six
Name: Kenneth Megarr    Date: 6/15/99    SS#: -------

Title of Research: What Are The Impediments to the Effective Transfer of Training Information of the Technologically Advanced Equipment in the Food Service Industry

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Abstract

Increasingly, commercial food equipment manufacturers are producing products that operate using electronic touch controls and microprocessors to assist in the production of food. The purpose of this study is to determine if impediments of the transfer of information in the care, maintenance and most importantly use and operation of technologically advanced food service equipment exist. And, if in fact they do, what can be done to eliminate these impediments. It is the opinion of the author that there may lie an inherent rift between the advancement of technology on food service equipment and either the training that accompanies such equipment or skill level of today's food service worker.

A 13 question survey instrument has been developed and administered via telephone interview to 50 respondents of which 46 participated resulting in a 92% response rate. The 46 respondents were selected from business reply cards that were included in electronically controlled food service equipment that they had purchased. This alleviated the possibility that any of the respondents were not familiar with this type of equipment and guaranteed that their answers were to be germane to the study. Data and statistical analysis have been collated by Minitab, a statistical analysis program, and its outcome can be found in the Findings and Analysis section of this study.

From the sample of 46 participants, the survey showed that the average respondent was: 30 to 34 years of age, has had some college, in a middle management position, has been involved in the food service industry for 11 to 15 years, operates an ethnic theme restaurant, operates cooking equipment that has electronic touch controls, has had some form of training on the equipment with electronic touch controls, were trained at the place of business and were predominantly self-trained.

The study recommends that operators of commercial food service equipment that has electronic touch controls be familiar with them and the current methods of training for them as these advancements are likely to become more complex as the equipment industry progresses.
DEDICUM

To my long time friend and dearest wife Debi,

who possesses the rare quality of being as loving as she is logical.

While pursuing her own endeavors 100%

also supports me in mine to the same degree.

To Dr. Marecki and Dr. Kelly for navigating me

through this experience.

To Warren Sackler for introducing me to it.

To Mom and Pop, for everything.

...and to Sam & Kelly.
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Chapter I

Introduction

You've come back to your restaurant after a horrendous four days at the National Restaurant Show in New York City. A lot of the equipment you have needs to be replaced and this seemed like the best vehicle to see what the best is that the industry has to offer. One of the pieces of equipment you're really looking forward to is a new microwave. After a lot of research you've picked the one you like; it will cut cooking times in the kitchen for more dinners per night, just the right size, just the right power level. Everything is right (well, except maybe the price) but you pay a little more and get the best, the industry paradigm. The day it arrives, it's unpacked, put on the cook-line and plugged in, just as you pictured it. There are a lot of buttons with numbers and information printed on them, but it's OK, you can figure out how it works. The first cook starts placing some food items in it to heat up, but is not really sure how to operate it. The box is long gone under a load of garbage and it has the owner's manual with it. Well really, how hard can it be? You finally figure out that you must push in the Power Level before setting the Time to cook but, how much time for a particular item; one bowl of veggies?, two? All this button pushing! The salesman at the trade show had said something about programming but it's been weeks! No number to call, no books, no help, no good. There goes the idea that this will be a positive addition to your kitchen, now its an albatross.
Problem Statement

With the advent of food service equipment manufacturers producing equipment that is more efficient and takes advantage of technical innovations, the operation of the equipment has become more complex. There is a need to examine methods by which a customer base can easily assimilate the knowledge it will take to operate a piece of equipment that is, while similar to its predecessor, more complex to operate if an operator is to take advantage of all its features.

Background

Currently there are a myriad of Commercial kitchen equipment companies that sell in the United States: Hobart, Panasonic, Vulcan-Hart and Wellbuilt to name a few. Combi-Ovens have been introduced; ovens that utilize convective heat, steam, microwave energy or a combination of all three. Pressurized and atmospheric steamers have also been developed; electronic temperature and time controls and even a device that replaces the atmosphere in open wine bottles so that the product that is left does not degrade due to the presence of oxygen; and is also a dispenser that is an aesthetically appealing display case! The National Association Of Food Equipment Manufacturers, (N.A.F.E.M.) recorded over 1000 new product introductions into the food service industry in 1995 alone. With all these new products being introduced, they are all accompanied by information on how to set up, operate and care for them. It is how this and other information is relayed to the field, and the impediments that it encounters in reaching the individuals, that the information will help most.
Purpose

The purpose of this study centers on a business difficulty. It is important to recognize and alleviate the impediments associated with information transfer from the manufacturer to the individuals who not only purchase the equipment but to those who use it as well. It is also of extreme importance that the information be permanent, easily obtainable and understandable.

Significance of the Study

With the identification of impediment(s) to the effective transfer of information and the use of barrier-lowering training techniques, manufacturers and users of commercial kitchen equipment may experience dramatically higher customer satisfaction levels. Also they may benefit from a confidence that grows in the industry from those who purchase and use their product. With proper marketing of the new or enhanced "Information Transfer" technique, the companies can benefit further by increased customer satisfaction from which sales increase both short and long term. The outcome of this study may also be able to be applied to other applications as well as there are a lot of VCR's out there still flashing 12:00, 12:00, 12:00...

Methodology

Through the course of this study Developmental Research Patterns will be employed in the present perspective. As with this study, experimental research is
conducted in the present perspective to determine the degree of effectiveness of evaluating the process of training. Training not only the End User but the Secondary and Tertiary Manager will also be explored. Aspects that impede the transfer of information and how they can be removed can greatly enhance the utilization of a piece of equipment.

Hypothesis

It is expected that this study will show that with the proper implementation of a training vehicle, the features and value of a piece of equipment will be realized to a greater degree than they are now. It is also expected that the results found in this study will be able to be administered to a myriad of other products. These products will be identified by those that have had a documented high incidence of End-User problems in operating and/or maintaining them.

Definition of Terms

- Customer: Including, but not limited to; End User, Dealer, Consultant, • Specifier, Architect, Representative/Distributor, Manufacturer.
- End User: One who actually operates a piece of equipment.
- Dealer: One who sells equipment directly to the End User.
- Consultant/Specifier/Architect: Those that may recommend pieces of equipment.
- Manufacturer: The maker of the equipment.
Assumptions

_Ideological_: The primary ideological assumptions of this study is that some deficiency exists whereby an end user does not fully utilize a new or different piece of equipment, and that with a proper training model in place, these deficiencies will be greatly reduced.

_Procedural_: In this study it will be of primary concern to guard against any control bias. The structure of the interview questions will be objective with all participants being asked the same questions in the same type of setting.

Scope and Limitations

This study will convey its findings so that they may be adapted to the entire Food Service community. Some limitations to this are evident; the fact is that the survey, will not cover every aspect or facet of food service. This being the case, a process of functional benchmarking could be employed to accomplish the task. With regards to those facets of the industry that are within the scope of the survey, competitive benchmarking can be employed. It is the author’s intention that the outcome of this study will be able to be employed in a functional benchmarking arena as well.

Procedures

- **Subjects:** Documents: Texts, Instructional Manuals, Journals and periodicals.

- **Groups:** Food Service Workers, Managers and Corporate Planners both on the manufacturers side and the operators side.
• **Observations**: By being an integral part of the food service industry, the authors own will be factored into the body and eventual process of the study.

**Variables**

• **Independent**: The instructions and training used with new or modified food service equipment.

• **Dependent**: The effective implementation of training techniques to accomplish the task as measured by increased customer satisfaction, fewer "operation associated" questions and by increased sales.

• **Intervening**: A subject's willingness and ability to learn, the turnover rate of employees and management's ability to amplify the training for implementation.

**Data Gathering**

For the literary portion, ERIC, LEXUS/NEXUS and other forms of electronic information will be used. For the data from the field, a Likert model survey targeted towards the management contingent, will be employed to determine if a training deficiency exists.

**Data analysis**

From the gathered data, the Minitab statistical analysis program will be used to determine the validity and the statistical significance of the study.
Technological advancements are occurring at a blinding pace. The speed at which new products are developed is almost as fast as the improvements that the new designs offer. It occurs in all aspects of our daily lives; video cassette recorders that can be programmed to record programs well into the next millennium, washing machines that wash clothes according to their amount of dirtiness with “Fuzzy Logic” and, of course, the personal computer arena where speed, capacity and capability can barely be expressed with exponents. According to Motor Week, “...the average car today has more computing power on board than the first Apollo that landed on the moon.” (Allenby, 1994 p.68) These types of technological advancements have not been relegated solely to consumer applications. The food service industry has also benefited by technology's quantum leaps.

Kitchens in the late part of last and the early part of this century were huge; a necessity as the equipment of the time was large, as were the staffs that were required to operate them. Ovens, for example, were heated by large wood or coal fires manually stoked and refrigerators were cooled by blocks of ice that were constantly being replaced as they melted. With this equipment came an extensive staff that maintained it. Lucky for chefs of the time the apprentice system was in place. This system utilized children and young adults put out of their homes in search of a trade as the current
economic climate would require (Jacobs 1975 p.83). The bourgeois would capitalize on the availability of cheap labor and exploit it to the fullest. For example, in the preparation of one sauce known as a glace, 60 liters of a liquid would be slowly simmered, stirred and reduced to just 1 liter. The great chef Augustus Escoffier wrote, “Employ the use of two young stalwarts to alternate the stirring of the stock over the course of time required...18 to 24 hours should be sufficient” (Escoffier, 1907 p.69).

As the cost of operating a food service establishment became increasingly more expensive, the manufacturers of food service equipment progressed as well; ovens that were fired by natural gas or electricity became available and ice boxes were replaced by walk-in coolers that use compressed refrigerants that required little or no maintenance. How surprised would our Escoffier be to see a completely contained electric or steam-driven kettle that not only can maintain a liquid at any temperature but also can slowly agitate it as well to promote evaporation?

As equipment and methods evolved so did society and through two world wars and the progression from an agricultural to an industrial economy, affluence became more widespread. Lavish meals were no longer confined to the rich; the middle class worker began to have more and more disposable income to take part in this extravagance. With this phenomenon, food service establishments became more and more pervasive and the cost of operating a restaurant or food service establishment became prohibitive as enacted labor laws required a minimum wage to be paid and a maximum number of hours worked restricted.
The evaluation of the business generally is that the dining room is the profit center, and that the size of the kitchen is directly and inversely proportional to the size of the dining room. But it is in the dining room where the money is made. For example:

- The smaller the kitchen, the larger the dining room.
- The larger the dining room, the more tables can be fit.
- The more tables, the greater the number of customers.
- The greater the number of customers, the higher the dollar volume.

Hence,

- The kitchen must be reduced in size to increase profits!

This mantra is adhered to so adamantly that it is epitomized at “Charlie Trotters” restaurant in Chicago, Illinois. Chef-Owner Charlie Trotter simply ran out of room in his dining room and determined that it would be cost ineffective to remodel the kitchen to add one or two more tables in the dining room. His answer was to place a table in the kitchen. While this turned out to be a marketing benchmark, adopted by many restaurants across the country, it shows the lengths that restaurateurs will go to garner that “one more customer.” (Int.1) With no pun intended, what it boils down to is that most restaurants operate on very tight profit margins. With the success or failure of an establishment hinging on the addition of several more patrons over the course of an evening, it is imperative that the kitchen be as space efficient as possible. Food service equipment companies, in an effort to maintain a sales advantage over their competitors, have adapted the needs of restaurants in the design of their products. While maintaining the ability to accommodate standard size cooking containers, the equipment designed
around these industry standards progressed by becoming smaller, lighter and more efficient. For example, one commercial microwave company garners over 80 percent of a major hamburger chains replacement business for these reasons alone (Int.2).

With progress in the area of design came technological advancements to equipment as well. Up until the early 1980s, most cooking equipment found in commercial kitchens was operated with analog controls; dials to set temperature and time as well as knobs and switches to turn the equipment on and off.

With the advent of the computer chip and ergonomic enhancements, ovens, fryers, grills and even dish washing machines are controlled by micro switches or touch pads that feed information electronically to temperature control devices, motors and servos.

This technology is so advanced that most of today’s cooking equipment can be programmed so that, with the touch of one button, a menu item can be cooked to an establishment’s exact specifications, adhering to a restaurant’s one critical criteria for survival; consistency.

With the proliferation of such technologically advanced equipment, the need has arisen for the education of those who will be operating the equipment on a day to day basis and, most importantly, training for the management who will be establishing Standard Operating Procedures to teach new employees. With an average industry employee turnover rate of close to 85 percent annually (Int. 3), the need for effective transfer of information becomes even more important. Transfer of information is ordinarily achieved through training of new employees. But training on the short term
can involve a great deal of cost. Employers faced with the high rate of turnover in the food service industry need to keep training costs to a minimum yet still maintain a competent work force.

In Great Britain, the periodical *The Economist* reports that the staggering unemployment rate (greater than 20% in 1992) has its roots in the school system, which is where effective training begins. “Two out of three students leave the school system before completion” (*Economist* 1992 p.12). This situation has fostered a work force that is not only not trained but makes training difficult if in fact they do get jobs. Nissan, a Japanese automobile manufacturer with plants in the UK reports in *The Economist* that their UK, plants produce 40% more product than their Japanese counterparts once the workers complete the Nissan training process.

Initially, workers before they are trained, are plagued with failure due to the lack of what they refer to as “Anticipatory Maintenance;” foreseeing problems that can be avoided. This they attribute to a lack of “core” education or training, during formative adolescent years. Considering the cost of training, the British are contemplating one option to train effectively; this would entail the worker contributing an equal amount from his or her pay to a training account with funds to be matched by the employer. These funds would then be accessed to pay for the particular employees training. (Graham, 1995 p.21) It should be noted that the results of the effects of this system were “inconclusive” when studied by an independent research firm, Information Access Co. (Weber, 1994 p.44). While there will always be conflicting reports as to the efficacy of
any program, the initiation of training in an area where it is needed is indeed a step in the right direction.

Cost is a careful consideration when it comes to training. While studies in other parts of the world are important, this study will should center on how companies get people trained to use their equipment effectively here. A myriad of methods exist around the country. A well trained workforce has become so important that it has become the critical factor in influencing where a company decides to locate. In the predominantly agricultural state of South Carolina, for example, the state offers, as an incentive to companies looking to relocate, free training. Local people who are unemployed enter the training program of the company to learn the tasks expected and the company is reimbursed by the state. "There s no cost to the company, it s all paid for with state money. We do the training ourselves based on the company criteria," states Bob Taylor, Director of the Special Schools Program based in Columbia (Overman, 1994 p.81.). Since its inception, the special schools program has trained over 145,000 workers for 1200 companies. Recent arrivals to the state are BMW and Michelin Tire. Where cost is ordinarily of greatest consideration is in the case of a non profit organizations. Research has found, however, that these organizations exist solely for assistance of non-profits.

In the area of computers, which are of critical importance considering the scope of this study, the National Cristina Foundation provides non profits with donated software, hardware, peripherals, audio, video and office equipment and provide the training for those who need it.
There is also Non Profit Computing Inc. which is made up of computer professionals who channel their passion for computers by volunteering to help others. Lastly, Computers 4 Kids coordinates computer donations from businesses and gives them to public and private schools and aims to promote literacy and education (Rosenstock, 1994 p.22-23). It is in this area primarily that "situational awareness" of many technologically advanced and controlled pieces of equipment can be fostered. With rudimentary knowledge of computing, operation of equipment of this type can become second nature.

Not all businesses that utilize technologically advanced equipment rely on the non-profit sector for their training and maintenance. The author writes "Any company worth its salt will have a support staff to train those that purchase their equipment" (Megarr, 1995 p.30). Entire industries have been developed to assist in these areas. For example Richard Kaplan began management consulting for Richland Industries, a cleaning services company that after 13 years of high employee turnover, was beleaguered with training problems. "We developed a concept to take care of training problems to give consistency and continuity" (Fitzsimmons, 1995 p 1). Kaplan contacted Larry Keesan, founder of Logical Operations Inc., and A.J. Nasser to join him in forming "Worksmart" International, a national center for training for industry. Consistency is only one quality that has been missing in the training industry: he has identified three training levels, all of which he said are usually flawed. The process of program development and implementation is too long and involved for in house trainers to conquer, even in a small company one program could take months to develop while
Worksmart already has more than 30. In addition, there is always the problem of not enough good program developers to serve every company internally.

Like in house trainers, local level trainers found at firms such as Worksmart cannot adequately serve companies with offices located in numerous states or countries; flying trainers to regional offices or having employees come to regional offices can be expensive. Kaplan is developing software similar to the benchmarking software used in the Rochester Institute of Technology Executive Leader Benchmarking course, so that companies may access his expertise at any time. This idea is supported by graduate and doctoral programs at many of the nations universities by adapting the teaching guides that are being developed there: the University of Florida at Tallahassee is just one of these that Kaplan has utilized. Other sources can be as basic as the American Management Association, (AMA). They have developed an interactive CD-ROM version of its top selling courses including “Project Management: Planning & Scheduling” and “Quality improvement tools.” AMA cautions that no standards currently exist for defining the content of an interactive multimedia training program. Experts, therefore, caution that businesses should not mistake a textbook transplanted to a computer and hyped up with fancy graphics and sound as interactive multimedia training. Indeed the key of interactive multi-media training is that the technology liberates learning from the “linear tyranny of a textbook where one chapter moves in lockstep with the next” (Marx, 1995 p.57).

Many of the examples stated previously centered on companies that are independent of those that they are assisting. A viable industry, but what about those
companies that wish to “go it alone” or have internal aspects of their organization that address the problem of training? One such company takes the Outward Bound approach; “The goal of the two 14 day voyages of Japan’s first corporate sail training ship, Kaisei, is not to produce sailors but to instill trainees with respect for teamwork, physicality and nature” (Crosby, 1994 p.50-52.). But how does this relate to equipment produced, sold and operated in the Food Service industry?

It still boils down to training, but what is the best way to get training across to an industry that employs more people than any other in the world other than the military, and one, as stated earlier, that has one of the highest rates of employee turnover? For clarification of this issue, it was felt that individual interviews would yield the most information. The next interviewed was the group that provides the industry standard when evaluating commercial food service equipment, The National Association Of Food Equipment Manufacturers (NAFEM) based in Chicago, Illinois. Interviews with Joya Lauchette discovered that while NAFEM is, in fact, the leading entity that certifies individuals as “Food Service Professionals” this certification hinges on the knowledge of what a piece of equipment is capable of doing, including:

- How big a compressor will you need to cool so many cubic feet?
- How much food will a certain size Cutter/Mixer be able to process?
- How many BTUs will be needed from a burner on a range?

Joya’s recommendation to find out how specific operations of equipment are transferred to the end-user are outlined in specific magazines and the special articles that
run in them (Int 3). The following magazines are associate members of NAFEM: Food Management, Food Service Director, Food Service Distributor, Food Service Equipment & Supplies Specialist, Grocery Equipment Product News, Hotel & Motel Management, I.D. Magazine, Modern Baking, Nation's Restaurant News, Pizza Today, Restaurant Business, Restaurant Hospitality, Restaurants & Institutions, Store Equipment & Design, and with no exceptions, each editorial department stated that information relayed in any article on specific operations of equipment is obtained from the manufacturer.

It was necessary to go to the manufacturers of equipment: Matsushita Electric Company, Blodgett Oven Company and Vulcan-Hart. Since the engineers are the ones who design the equipment and produce what they feel are the best methods for training the end-user in its operation, it was they who were contacted. A face-to-face interview was conducted with Mr. Toshio Kai, Senior managing engineer for the Kitchen Appliance Division of Matsushita Electric Company, based in Nara Prefecture, Japan. Matsushita was chosen as it is a global company, the largest manufacturer of electronic equipment in the world and proves itself as always being “Just Slightly Ahead Of Our Time.” Mr. Kai said that “while all equipment produced is accompanied by the obligatory owners manual, or in the case of commercial equipment, operations manual, with commercial kitchen equipment this is just not sufficient” (Int. 4). A multi-pronged approach was conducted by Matsushita to determine what was the best vehicle for the transference of information on technologically advanced equipment to end-users in this industry. The areas of Operations, Employees and even the Atmosphere in the kitchen were considered. The Operations of the food service industry are varied but in many
cases it was seen that there is a managing body that needs to be accessed if the information is to be transferred correctly. Management designs and maintains procedures that are adhered to assure consistency. It is to this group that the operations manual is targeted, a full length explanation as to the operation of the equipment. Second are training videotapes that visually instruct each chapter in the manual as “a picture tells a thousand words”. Finally 800 numbers are also utilized, not only for operations assistance but for service in the unlikely event of a malfunction. In addition to all these methods is included a grease-proof laminated “quick reference” card that can be kept by the equipment and will withstand the atmosphere in the kitchen.

This system of support was developed over many years based on evaluations of equipment by the engineering staff and most importantly from input from the field.

Mr. Kai has vowed to continue to expand on the way that information is transferred to the end-user but noted that, with all these elements in place, all the areas considered have been addressed and customer complaints have reduced to minimal levels.

The next interview was with Matt Labell, Engineer for the Blodgett Oven Co., based in Burlington, Vermont. Mr. Labell noted that Blodgett utilizes Manufacturers Representatives, or “Reps”, exclusively to bring their products to market. Because of the cost of the products, it is not practical for the reps to purchase the equipment from the manufacturer as in the case of Distributors. Reps perform an important function by being so familiar with the equipment that they are able to speak of it intelligently at shows as well as demonstrate it effectively to both dealers and to the end user. The rep
attends classes and extensive training from the factory. With this new found knowledge the rep can pass the information on to the next level, for example the consultants, architects, specifiers and dealers. The rep also demonstrates directly to end users. Mr. Labell also noted that the rep acts to provide the manufacturer with the most important way for a piece of equipment to evolve; suggestions from the end-user (Int. 5).

Finally, Tom Dee, Senior Engineer for the Vulcan-Hart Company, reiterated many of Mr. Labell’s points stating that most of their training is geared to the rep. With intensive seminars, week long training classes and entire manufacturer schools geared toward the transfer of the information, this is how an individual learns how the operate the equipment. A good well rounded rep will then take this information and apply it to particular applications. “Cost and Application” was repeated again and again by Mr. Dee as the parameter to where and how a piece of equipment would be sold (Int. 6). Where cost is outside the scope of this study, it is the application where information is transferred. Next comes dealers, consultants architects and specifiers.

It is in this area that much of the training of the operation of the equipment is lost. Architects and consultants, while knowledgeable, concern themselves with the capability of a particular piece of equipment; How many sheet pans can it cook at one time or the configuration? Will it fit into a particular corner of the kitchen? Once the kitchen starts cooking these individuals are no longer involved. Specifiers ordinarily operate for a large contract feeders like Marriott or ARAMark and are paid by the clients to bring in the personnel and equipment to provide food service to a school, hospital or other
contracted area. Again, these individuals may have no practical knowledge as to the actual operation of the technologically advanced equipment that they are recommending.

Dealers are store front merchants that may have up to 1000 pieces of equipment displayed in their showroom, everything from Apple corers to Zyliss cheese graters. This is hardly the environment for a manufacturer to rely on for effective transfer of technological operating information.

It is the rep who is relied upon to maintain a line of products and their operation to every line of the “Information Pyramid” (Chart 1). It is in this all important function that the rep acts as liaison between the factory and the people who use the equipment. The rep is the one who relays what the end-user actually says about a piece of equipment back to the manufacturer. The individuals who are actually using the equipment are the best source for a manufacturer to upgrade and design equipment.

To reference Supervision, all the companies interviewed prefer to “Ready, Aim...Fire!” rather than “Ready, Fire... Aim!” (Dolliver, 1993 p.22), this referring to the importance of the evaluation of a market and its requirements before product-specific aids to performance and operation are employed. “Every performance can improve. Anyone knows that maximizing your product’s abilities can give your company a competitive edge” (Dolliver, 1993 p.21). But where does one start?

An essential first step is a needs assessment yet its often overlooked. Some managers consider it too difficult and arduous a process, others think of it as costing valuable time that is best spent at the task of solving the problem.
But wait, what problem? A needs assessment gives a company a road map to reach the established goal. Therefore, when properly executed it is a wise investment. It pays the company back in saved time, dollars and effort by working on the right problems, (Dolliver, 1993 p.12), problems that each of the referenced companies have established by every evaluation method available to them, which keeps the one method that is the most harmful to a minimum; feedback from a dissatisfied customer.

Chart 1 has been developed to convey how many food service equipment companies (including the ones referenced), use a myriad of methods to convey information to their customers. Each line represents a different method based on the different needs of the particular group it represents as each group may have particular requirement that a company must satisfy. It should be pointed out that “customers” can encompass a variety of situations from an independent to a national chain. It should also be noted, and most importantly, that each of the interviews garnered the sense that the companies regarded their products as “living” pieces of equipment and that the development of new models is largely influenced by the customer themselves and, that the lines of flow outlined in the graphic run upwards as well as downwards.

With the advent of all this information available, it was necessary that a survey instrument be developed to determine the following:

- The average age of the respondent surveyed.
- The respondents level of education.
- The respondents position.
- The number of years have they worked in food service.
• The type of establishment where they currently work.

• If they operate any equipment with electronic touch controls.

• If they were trained on the equipment and how they were trained.

• If they felt the training they received was adequate.

• The location where the training took place.

• The identity of the person(s) who trained them.

• Their input as to what would make the electronically controlled piece of equipment easier to operate.

With this data in place and obtained by a representative sample of the food service operations community, it can be evaluated and statistical analysis conducted, not only reach conclusions and gain a better understanding of the individuals operating in a commercial kitchen, but also act as critical information to be relayed back to manufacturers (See “Chapter V”). With this information a manufacturer can determine how subsequent operational controls can be varied to accommodate the average food service worker, what controls can be added or deleted and also needs determined for development of future products.
Chapter III

Methodology

This area will describe the target group accessed, how the information has been gathered, a copy of the instrument utilized, a breakdown of the data and its analysis.

The Target group was accessed by the inventory of business reply cards returned from the purchase of commercial microwave ovens sold by the authors company. These reply cards contained all the essential information for determining the viability of the respondent, including name, address, phone number, type of establishment, what dealer the microwave oven was purchased from and the ovens primary usage.

The survey instrument was produced to gain information across a representative sample of the industry. The instrument was administered by telephone and resulted in a 92% response rate. It is through this information that an accurate conclusion can be drawn, conclusions to determine if there are impediments of the effective transfer of training information for technologically advanced equipment in the food service industry. The average respondent:

- Is 30 to 34 years of age.
- Has had some college education.
- Holds the position of a “middle” manager.
- Has been in the Food Service industry for between 11 and 15 years.
- Operates an “Ethnic” theme restaurant.
• Operates some type of electronically controlled cooking equipment.

• Has been given some form of training on the equipment.

• Gives the training received a grade of “5” on a scale of 1 to 7, (1 being “Not enough training and 7 being “Too much training”.)

• The training received was primarily done at the place of business.

• Most were self trained.

Following is a sample of the survey instrument with the percentage of the respondents answers recorded, a blank survey and finally a complete output and breakdown of the data follows:
RIT Survey What are the impediments to effective transfer of training information for technologically advanced equipment in the Food Service Industry?

Your Name? ____________________________________________

Your Age? 1. 16-19 2. 20-24 3. 25-29 4. 30-34
5. 35-39 6. 40-44 7. 45-49 8. 50+

Your Education? 1. No High School 2. Some H.S. 3. H.S. Grad
4. Some College 5. College Grad.-2YR.
7. College Grad.-Doctorate.

Your Position with your Present Company?
1. Owner 2. Chief Executive Officer 3. Executive
4. Middle Management 5. Supervisor 6. Operations/Worker

How many years in the Food Service Industry?
1. <1 2. 1-2 3. 3-4 4.5-6
5. 7-10 6. 11-15 7. 16-20 8. >20

What type of establishment are you involved with now?
5. Fast Food 6. Deli 7. Other

Do you operate any cooking equipment?
1. Yes 2. No (If "No"; terminate the interview, and inquire if there is someone who does.)

Do you operate any cooking equipment that have electronic touch controls?
1. Yes 2. No (If no inquire if there is a microwave oven in the establishment, if "Yes" continue, if "No" Terminate)

When you were introduced to the piece of equipment that is electronically controlled, were you given any training on the equipment?
1. Yes 2. No (If yes continue and have the person elaborate on the training; if they feel there were points of the training that were weak or strong, also what training that was or would have been useful, If no ask "why?" If the response is that they were already familiar ask where they became familiar, record and continue

Do you feel that you were adequately trained on the piece of equipment prior to operating it?
Not enough 1---2---3---4---5---6---7 Too much
Where did the training take place?
1. Place of business  2. Off site training area.

Who trained you?
1. Trainer from place of business  2. Trainer from manufacturer
3. Self trained

What do you feel would make the piece of equipment easier to operate from a training standpoint.
Question 1 identified the respondents by name. This allowed follow up questions if problems were detected. In this study, none of the respondents experienced serious difficulties, hence, there was no need for a follow up conversation.

Question 2 asked "What is your Age?" The results are tabulated in Table 1,. The majority of respondents were young to middle aged with 87% between the ages of 25 and 44.

Table 1: Age of Respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Cumulative Frequency</th>
<th>Percentage</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-24</td>
<td>1</td>
<td>1</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>25-29</td>
<td>8</td>
<td>9</td>
<td>17.4</td>
<td>19.6</td>
</tr>
<tr>
<td>30-34</td>
<td>14</td>
<td>23</td>
<td>30.4</td>
<td>50</td>
</tr>
<tr>
<td>35-39</td>
<td>9</td>
<td>32</td>
<td>19.6</td>
<td>69.6</td>
</tr>
<tr>
<td>40-44</td>
<td>9</td>
<td>41</td>
<td>19.6</td>
<td>89.1</td>
</tr>
<tr>
<td>45-49</td>
<td>3</td>
<td>44</td>
<td>6.5</td>
<td>95.7</td>
</tr>
<tr>
<td>50+</td>
<td>2</td>
<td>46</td>
<td>4.4</td>
<td>100</td>
</tr>
</tbody>
</table>

Question 3 asked: "What is your education?" Almost 80% had attended college, with 54% having completed 2 years or less (Table 2 ).
Table 2: Level of Education Attained

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Frequency</th>
<th>Cumulative Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some High School</td>
<td>4</td>
<td>4</td>
<td>8.7</td>
<td>8.7</td>
</tr>
<tr>
<td>High School Grad</td>
<td>12</td>
<td>16</td>
<td>20.1</td>
<td>34.8</td>
</tr>
<tr>
<td>Some College</td>
<td>13</td>
<td>29</td>
<td>28.3</td>
<td>63.1</td>
</tr>
<tr>
<td>College Grad (2 yr)</td>
<td>12</td>
<td>41</td>
<td>26.1</td>
<td>89.1</td>
</tr>
<tr>
<td>College Grad (4 yr)</td>
<td>4</td>
<td>45</td>
<td>8.7</td>
<td>97.8</td>
</tr>
<tr>
<td>College Grad (Master)</td>
<td>1</td>
<td>46</td>
<td>2.1</td>
<td>100.0</td>
</tr>
<tr>
<td>College Grad (Doctoral)</td>
<td>0</td>
<td>46</td>
<td>0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question 4 asked "What is your position with your present company?" Middle managers accounted for the majority with 41%. Supervisors and operations employees were the second largest grouping. This closely relates to the relatively young ages of the respondents (Table 3).

Table 3: Current Position within Present Company

<table>
<thead>
<tr>
<th>Position</th>
<th>Frequency</th>
<th>Cumulative Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>10</td>
<td>10</td>
<td>21.7</td>
<td>21.7</td>
</tr>
<tr>
<td>Chief Executive</td>
<td>0</td>
<td>10</td>
<td>21.7</td>
<td>21.7</td>
</tr>
<tr>
<td>Executive</td>
<td>3</td>
<td>13</td>
<td>6.5</td>
<td>28.3</td>
</tr>
<tr>
<td>Middle Manager</td>
<td>19</td>
<td>32</td>
<td>41.4</td>
<td>69.6</td>
</tr>
<tr>
<td>Supervisor</td>
<td>5</td>
<td>37</td>
<td>10.9</td>
<td>80.4</td>
</tr>
<tr>
<td>Operations/Employee</td>
<td>9</td>
<td>46</td>
<td>19.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Question 5 asks: "How many years have you been in the Food Service Industry?"

The majority (65%) had 11 or more years experience (Table 4).

Table 4: Years of Experience in the Food Service Industry

<table>
<thead>
<tr>
<th>Years in Food Service Industry</th>
<th>Frequency</th>
<th>Cumulative Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>1</td>
<td>1</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>1-2 years</td>
<td>2</td>
<td>3</td>
<td>4.4</td>
<td>6.5</td>
</tr>
<tr>
<td>3-4 years</td>
<td>1</td>
<td>4</td>
<td>2.1</td>
<td>8.7</td>
</tr>
<tr>
<td>5-6 years</td>
<td>7</td>
<td>11</td>
<td>15.2</td>
<td>23.9</td>
</tr>
<tr>
<td>7-10 years</td>
<td>5</td>
<td>16</td>
<td>10.9</td>
<td>34.8</td>
</tr>
<tr>
<td>11-15 years</td>
<td>15</td>
<td>31</td>
<td>32.6</td>
<td>67.4</td>
</tr>
<tr>
<td>16-20 years</td>
<td>4</td>
<td>35</td>
<td>8.7</td>
<td>76.1</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>11</td>
<td>46</td>
<td>23.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question 6 asked: “What type of establishment do you work in currently?” Over 40 percent identified their business as “other” (Table 5). Among the types of businesses identified were upscale chain style restaurants such as Grady’s, TGI Fridays and Chilis.
Table 5: Type of Establishment

<table>
<thead>
<tr>
<th>Type of Establishment</th>
<th>Frequency</th>
<th>Cumulative Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Tablecloth</td>
<td>3</td>
<td>3</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Family Style</td>
<td>8</td>
<td>11</td>
<td>17.4</td>
<td>23.9</td>
</tr>
<tr>
<td>Catering</td>
<td>3</td>
<td>14</td>
<td>6.5</td>
<td>30.4</td>
</tr>
<tr>
<td>Ethnic Theme</td>
<td>10</td>
<td>24</td>
<td>21.7</td>
<td>52.2</td>
</tr>
<tr>
<td>Fast Food</td>
<td>2</td>
<td>26</td>
<td>4.4</td>
<td>56.5</td>
</tr>
<tr>
<td>Deli</td>
<td>0</td>
<td>26</td>
<td>0.0</td>
<td>56.5</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>46</td>
<td>43.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Several questions were used to qualify the responses. Only those respondents who answered “yes” to these questions were used. The purpose of these questions were to assure that we were indeed getting responses by those that operate the equipment for purposes of viable feedback.

Table 6: Qualifying Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 7</strong>: Do you operate any cooking equipment?</td>
<td>46</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Question 8</strong>: Do you operate any cooking equipment with electronic touch controls?</td>
<td>46</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Question 9</strong>: Were you given any training on the piece of cooking equipment with electronic touch controls?</td>
<td>46</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Question 10 asked: “Do you feel that you were adequately trained on the equipment?” A small number (17.4%) felt that the training was not adequate. The majority felt that the training was more than adequate and sufficient (Table 7).

Table 7: Adequacy of Training Received

<table>
<thead>
<tr>
<th>(Range Scale 1 = Not enough ----- 7 = Too much)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Not Enough Training</td>
<td>5</td>
<td>10.9</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>4.4</td>
</tr>
<tr>
<td>4 About the Right Amount</td>
<td>7</td>
<td>15.2</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
<td>63.1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>7 Too Much Training</td>
<td>2</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Question 11 asked: “Where did the training take place?” Training took place almost equally at the customer’s place of business or at an off-site training area (Table 8).

Table 8: Location of Customer Training

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Place of Business</td>
<td>25</td>
<td>54.4</td>
</tr>
<tr>
<td>Off Site Training Area</td>
<td>21</td>
<td>45.6</td>
</tr>
</tbody>
</table>
Question 12 asked: “Who trained you?” The majority of respondents trained themselves (Table 9). This would then support that, first - not enough training was either provided from the manufacturer or second - a variable might exist that not enough training had taken place because they were self trained.

Table 9: Who Conducted the Training

<table>
<thead>
<tr>
<th>Trainer From Place of Business</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer from the Manufacturer</td>
<td>9</td>
<td>19.6</td>
</tr>
<tr>
<td>Self Trained</td>
<td>24</td>
<td>52.1</td>
</tr>
</tbody>
</table>

Question 13 sought to identify “What do you feel would make the piece of equipment easier to operate from a training stand point?” There was insufficient response to offer any suggestions.
Chapter V
Conclusions and Recommendations

Long Range Consequences

If the hypothesis of this study is realized, it may be possible to employ the methods to the food service industry and have a more effectively trained work force. Hence the ability to fully utilize pieces of equipment that are more technically advanced than their predecessors would be a possibility. In continuum, the process can be modified to accommodate changes in attitude, corporate or independent operators, techniques and even the model itself. Should the hypothesis not be proven or the data equivocal, further study should be undertaken in areas that may prove to be more advantageous.

The development of an Action Plan is critical if the effective transfer of information of technologically advanced food service equipment is to be realized. This study provides information in several pivotal areas; The first is age. With 87% of the respondents age being between 25 and 44 years, it is advantageous as that, generally, individuals in this age group are less likely to be resistant to information that will make their jobs easier. Few have trouble equating that, with tasks that are simpler to do, they will realize more efficiency, promotions, greater income and profits. Second is education. 80% had attended college and this ties in closely with the advantages outlined above. While the position of the respondent is important, it is not pivotal. 41% were middle managers.
The important aspect is what they actually do or functions that they perform and this is to be addressed later.

The third pivotal area is the amount of time the respondent has spent working in the food service industry. 65% had 11 or more years experience. This may have an effect on the action plan in one of two ways; with this much time “on the job”, are they aware of and kept up with the advancements that have taken place; or would it have been better to compare them to respondents that have had little to no experience? The opinion of the author is that it is better to have experienced respondents as there is no way of knowing what effects advancements of equipment operation will have on individuals who are new to an industry. These new individuals will be having a hard enough time learning the basics then to be also trying to cope with equipment that is advancing, and hence changing, as well. Several questions were positioned to assure that the respondent operated equipment that had electronic touch controls. The final and most pivotal area of concern for the development of an action plan is the response to the question “Do you feel that you were adequately trained on the piece of equipment that is electronically controlled?” While less than 17.4 % responded that the training was not adequate, the majority felt that the training was more than adequate and sufficient, 63%. Several areas are of great concern here; because of the demographics of the respondents, it is possible that they responded to this question with their ego tempering what they say. Here we are asking the respondent to admit that they do not operate a piece of equipment, to its fullest extent, that is an integral part of their domain. A domain were they have spent a lot of time, achieved a great deal of responsibility and have become, in their eyes, successful.
As it stands, the current level of training appears to be sufficient with a few areas that could be improved - benchmarking is always a continuous process. However, a subsequent study, focusing on and alleviating the parameters that may be muddled by professional pride, may reveal contrary data.


Interviews

1. Charlie Trotter, Chef/Owner; _Charlie Trotters_, Chicago Ill.

2. Paul Garber, National Sales Manager; _Matsushita Commercial Food Service_ 
   
   _Division_ Secaucus, New Jersey.

3. Joya Lauchette, Certification Coordinator; _National Association of Food Equipment Manufacturers_, Chicago, Ill.

4. Toshio Kai, Senior Managing Engineer; _Matsushita Microwave Oven Division_, 
   
   Nara Prefecture, Japan.


6. Tom Dee, Development Manager; _Vulcan Hart Company_, Louisville, Ky.