Title: Why corporations train, how programs are implemented, and is the training effective?

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Abstract: Presents a model for evaluating the effectiveness of corporate training programs. The model suggests a training program based on the corporate goals, integrating management methodology and evaluation process from the start of the implementation program.

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Training:

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and is the training effective?

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Abstract

There has been an increase in training development and implementation nation wide in various industries, yet there is no clear definition of the benefits or measure of their impact. This research focused mainly on literature reviews, the data presented about the training programs through out the country. We interviewed a training specialist to confirm our ideas. Why corporations invest in training, how they implement their training programs, and what measures they take in evaluating the effectiveness of these programs was the focus of this work. We analyzed the trends and the data on where corporations focus their investment for training, the type of investment they make, and the programs they implement. We also studied techniques for evaluating training programs effectiveness and the methodology used, in doing so. In conclusion we analyzed the information and presented a model for creating, implementing and evaluating training programs. The model suggests a training program based on the corporate goals, integrating management methodology and evaluation process from the start of the implementation program.

Introduction

The demand for employee training has been rapidly increasing in today's ever changing workplace. Particularly in those companies undergoing re-engineering or computerization. The need for training programs increased from 34% in 1992 to 55% in 1994 according to an Olsten's survey. However, the employee training budget of major US organizations have shown small or no increases for the last 5 years. According to *Training Magazine*, US organizations with 100 or more employees allocated $52.2 billion for formal employee training in 1995. This figure has risen by 15% between 1990 and 1995, but is considered almost insignificant after an adjustment for inflation. This is the result of increased attention towards training objectives and implementation.

In this paper we will present what the current formal training trends are, what motivates the corporations to spend money on training, how the training programs are typically implemented, and what measures are taken by organizations in measuring the effects of the programs. In conclusion we analyzed our findings and suggested a

model for training programs that is based on corporate goals, integrating management methodology and an evaluation process from the start of the implementation program.

Current Status

$32 billion (72%) of the training budget mentioned previously was used to pay the salaries of the training personnel. Outside expenditures, such as seminars, computers and packaged training programs, accounted for another $10.3 billion (20%). The remaining expenditures, $4.3 billion (8%), were in facilities and required overhead expenses. Overall, the average proportion of training represented about 4% of the payrolls of companies.

Some of the major reasons for corporate training are: to enhance quality standards, to improve overall communication/teamwork, and to implement cross training to improve productivity. This enables companies to compete in the fast changing work environment. According to a survey conducted by *Training Magazine*, the following were the most popular US organization initiatives for corporate training in 1995:

- Total quality management (58%)
- Development of an organizational vision (50%)
- Partnering with suppliers and customers (44%)
- Work teams (40%)
- Re-engineering (35%)
- Bench marking (33%)
- Downsizing (31%)
- Outsourcing (25%)
- Use of 'contingent' workers (21%)

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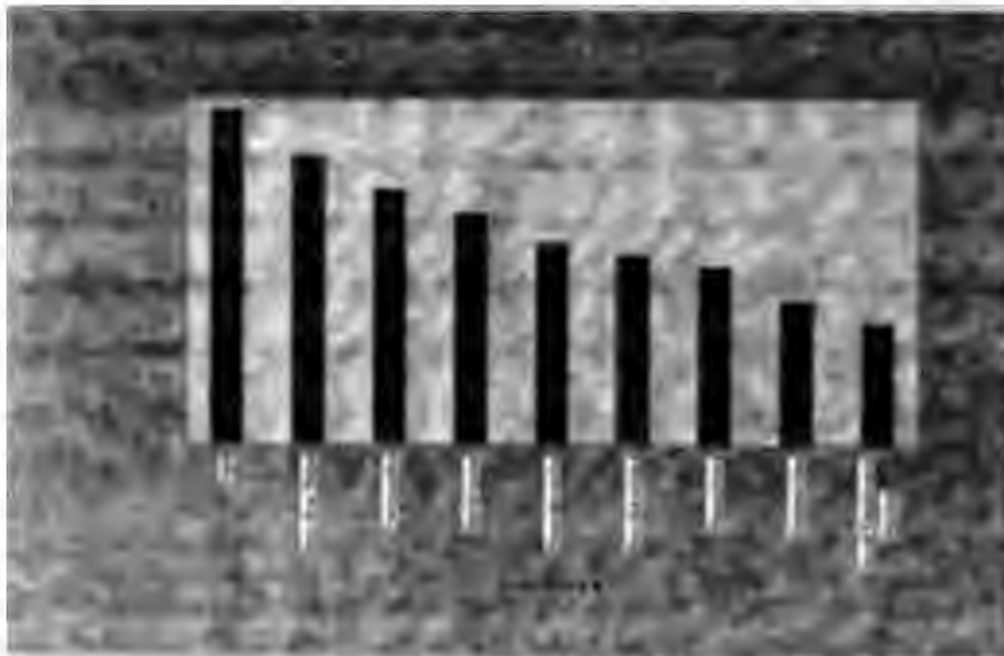
The method of delivery can vary from company, industry, groups of people, and by subjects. The best method of training can be different according to different circumstances. The survey conducted by *Training Magazine* indicates that training for all groups is provided mostly by both in-house staff, and outside service providers. The most common instructional delivery systems utilized include:

- videotapes (92%)
- lectures (90%)
- one-on-one instruction (82%)
- games/simulations (63%)
- case studies (57%).

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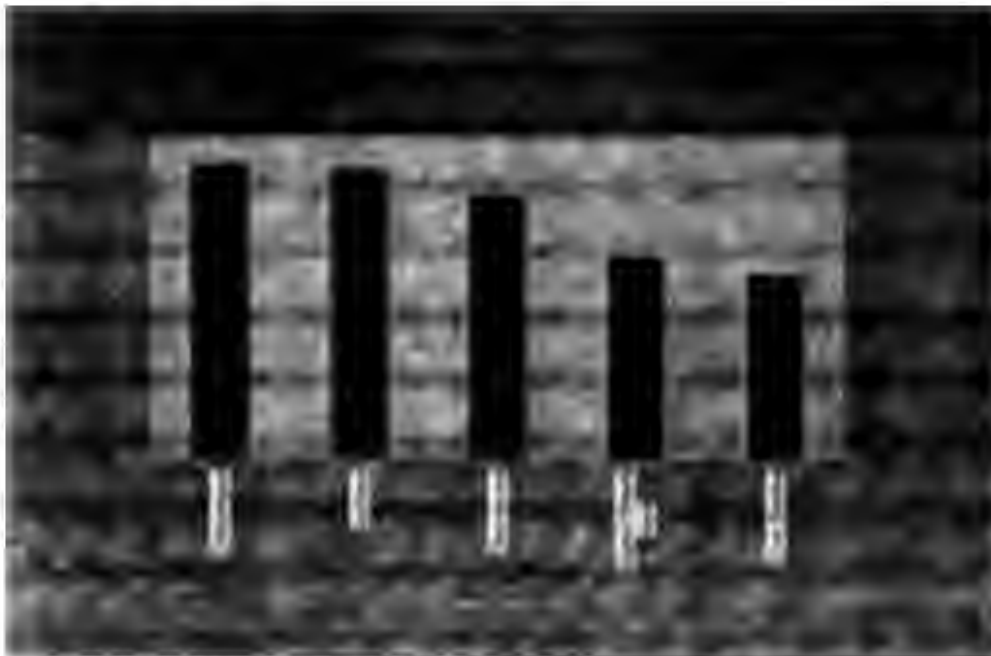
The demand for proficiency in certain skill categories has surged significantly due to new management concepts and the computerization of work places. Many studies show that the need for computer skills have surpassed that for written communication skills. Also, there is a large increase in the need for sales and marketing skills. The Industry report of 1995 from Training magazine show that the types of training most widely offered included:

- basic computer skills (93%)
- management skills/development (86%)
- technical skills/knowledge (85%)
- supervisory skills (85%)
- communication skills (85%)
- customer relations/services (82%)

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The amount of training that certain groups receive varies greatly. The group of employees likely to get the greatest amount of formal training is salespeople and the group to receive the least amount is administrative employees. Training has become a very critical need for the salesperson to stay on top of new products and information. However, the administrative function is mostly repetitive and thus the need for training is minimal.

The training expense can be very different according to field of business. The organizations with the highest average training expenditure per employee were the fields of: High Technology, Health Care, Transportation, and Utilities. The lowest average expenditure was in the field of educational services. This can explain by the technology change and market condition change. The fast pace industries tend to requires more training to be competitive and essential to the company. The educational services tend to very stable and well defined environment which requires very minimum training.

Statistical Suggestions

The survey results indicate that:

- Organizations undergoing change are more likely to use more training
- Organizations are more likely to train positions that change or include new components
- Organizations are more likely to do their own training
- Organizations are more likely to train critical positions or to train for critical skills
- Organizations use the least expensive and most versatile training tools
- Organizations in dynamic industries are more likely to use more training

This suggests that organizations view training as a cost rather than an investment.

Why Corporations Invest in Training

Training is a reality of life for today's corporations. In the dynamic world of technology and the competitive atmosphere of global trade, the need for training is not an option. As customer demand for better and more complex products increases and time to market expectation decreases, the challenge for the corporation becomes obvious. To meet this challenge every industry has had to undergo a transformation in the last ten to fifteen years. American corporations learned many lessons during the transformation periods of 70's an 80's. The value of having a trained work force proved to be the essential catalyst in the success and prosperity of the new corporations.

Although corporations and organizations are beginning to realize the value and the importance of training, they have yet to discover the relationship between success and training. Many have attempted to create models which describe this relationship. This complexity has been the biggest obstacle in understanding and measuring training needs and justifying the cost associated with training employees. Although many acknowledge the need and its importance, not very many agree on its effectiveness and its rate of return.

Corporations are beginning to understand that training, like retooling, is a way of life. It is a process which brings much needed change to gain a competitive edge. In order to keep the their workforce up to date with market introductions, technology trends, and manufacturing and management techniques, organizations need to invest in development and training more than ever. However, the level of training and the level of investment in training by the corporation is a subject of debate.

Corporate Business Strategy and Training

Staffing and training lie at the heart of how businesses gain a competitive edge in the market place. The corporate business strategy often determines how committed a company will be to training and developing employees. Many have suggested a resource based view of the corporate business strategy and the training process.

Market Needs and Technology Trends

Technology trends often dictate change and thus training to the corporate world. An example is the introduction of a new software. Typically this is followed by intensive employee training within an organization.

The fact that corporations must invest in new technologies to remain competitive is a known phenomenon. The ensuing training on the other hand has been often neglected.

Training is hidden cost and can be overlooked in the budgeting process since the value of training is not obvious to the decision makers in an organization. Once the need for training is established and management starts to believe in it's value, the next challenge is to overcome the fear and the resistance to change by the participants. This is due to the fact that training generally means some change and it is not always accepted.

Corporate Ladder vs. Lattice

Versatility of employees is an integral part of the emerging new corporation. The knowledge to operate a piece of machinery or know how to perform a certain task by itself is not enough for today's employees to maintain employment. The restructured manufacturing environment, concurrent engineering, and integrated marketing and sales organizations require skills which can understand, analyze and digest complex relationship among these organizations and their interaction with the outside world.

The corporate world has realized the importance of the trained employees who can operate in varying work environments and their ability to make complicated decisions related to their jobs based on analysis of all the involved elements. These skills are typically gained by being involved in various aspects of the operation within the organization. Job rotation programs are designed to address this need. The purpose of the rotation program is to get the people involved in various aspects of the operations and essentially with the nuts and bolts of the company at various organizational levels such as marketing, engineering, etc. The idea is to familiarize the employees with the entire company. This type of training provides job satisfaction and creates a sense of loyalty within the company.

The cost of this lateral training can be high. Sometimes companies have to consider restructuring the entire organization in order to implement rotation programs. However there are savings associated with lateral training which can greatly impact the organization. The savings are brought by the fact the future management will have a good understanding of the organization. In addition the loyalty from job satisfaction often leads lower turn over. This can significantly reduce future training cost.

Empowering Employees

Companies have learned not to ignore their greatest asset - people. Businesses need innovation to stay competitive. This can only be accomplished by providing a work environment which encourages innovation. There

has been a lot of talk about empowering employees in the recent years. Empowering employees not only provides a reward system, but often results in great opportunities for the company to tap into the innovative internal sources. This is evident in many corporate mission statements where the innovation is greatly emphasized.

Government Incentives

Government often provides incentives for the companies to provide training for their employees. These incentives can come in the form of grants, tax benefits, and supporting programs which will focus on the priorities local and/or federal officials establish. Companies driven by profit, respond to lower cost alternatives to training by taking advantage of services provided and the incentives offered by the government.

For example, in recent years there has been a great deal of attention from Washington and the White-House to improve the high school and junior college training programs. This attention to entry level training is sparked by shrinking corporate dollars, and concentration of training programs on the more senior employees within an organization. The benefit to the companies of course comes as a cost reduction in new employee training. Thus government ,by focusing on an aspect of training, can effectively engineer the training market and needs of the companies.

Training Implementation

Training programs are developed strategies to support corporate goals. A manufacturing firm will have a different set of goals than will a highly technical firm. Hence they will have different training programs. Regardless of what type of company, the goal of a training program is to effectively transfer knowledge to the employee. To do this requires that training exist in a conducive environment - the corporation needs to acknowledge training. Training is a top down plan. If the boss does not think it is important, the underling employee will not either. Therefore top level management needs to promote training not just mouth it. There are three objectives that repeatedly appear in training literature as necessary for programs to be effective:

- Clearly defining the roles and goals of the program (scope and purpose)
- Involve all major stakeholders - communicate
- Develop appropriate measures

Clearly defining the roles and goals are self evident. The employee will be better able to adopt new methods and procedures if he/she can see why and what the outcome of the new procedures will be. This will also allow employees to take part in the ownership of the outcome from a training program.

Involving all stakeholders and communicating relates the interaction of trainers, employees and supervisors. The trainer: to know the learning activity, the employee: to be motivated to learn that activity and the supervisor: to include that activity into the employee's work. Failure to communicate freely will reduce the effectiveness of the training.

Developing appropriate measures allows the program to be continually evaluated to assure the original objective is being met. This does not have to be a quantitative measure.

A fourth objective is often added:

- Provide tangible rewards for successful implementation of learned skills

This is important. If a new skill is learned but there is no incentive to use that skill, the employee will stick to more comfortable "tried and true" methods. The training will be wasted. Often corporations use a punishment system instead of a reward system. The employee will be fired if the new skill is not utilized.

Training Programs

Corporations implement training programs in many different ways. Each corporation chooses training programs and methods that satisfy their determined training needs. There are not two identical training programs because there are no two identical companies. The challenge to the corporation is to determine the criteria for the most effective expenditure of training dollars, or to maximize training investments. The criteria can be based on a hard, objective number or a soft, subjective consensus. In either case, the training program should be modeled toward this criteria and measured against it. There are many variables that shape training programs.

- Business Type
        Service vs. Manufacturing
- Corporate Management Strategies
        TQM vs. Classical
- Corporate Business Strategies
        Leading Edge vs. Imitator
- Business Environment
        Dynamic vs. Stable
- Business Size
        Small vs. Large
- Business Location
        Rural vs. Urban

Due to the volume and scope of these variables, there is no magic formula that can predict training program X for, as an example, a small, classical, imitator service company in a rural and stable environment. Each corporation will have to evaluate program components individually as they relate to the corporation. There is however a general guideline or model that is useful in examining a training program creation. The model listed is an expansion of the IBM "systems approach" defined by Jack E. Bowsher as "a process for developing instruction that is based on defined business requirements and that produces gains in knowledge and skill to improve job performance". The expansion is useful to see at what level the variables affect program formulation and it illustrates the complexity of a training program. The expansion is a compilation of current observations and analysis collected through a literature search.

Define Corporate Goals and Strategies
           Define training strategies
          - Employer Mandated
           - Stable Environment
           - Basic Skills
          - Employee Choice
           - Dynamic Environment
           - Unknown Future Skills
           - Just-in-Time
                    Structure training program(Focus)
                 - Skills
                        Choose Methods
                     - In House("make") Company specific learning
                       - Corporate Universities/Resource Centers
                       - Job Rotation
                       - Professional Specialists/Internal Consultants
                       - Line Manager/Coach-trainer
                     - Outsource("buy") General learning , New ideas
                       - Vocational Schools/Colleges/Universities
                       - Business-University Partnerships
                       - Consultants
                     - Community Long range general learning
                           Choose delivery system
                         - Group
                           - Classroom , Lecture
                           - Case Studies
                           - Role Playing
                           - Video
                         - Individual
                           - Interactive Media(IT)
                           - Self Study
                           - Tutoring , one-on-one
                             Review and Measure
                     - Evaluation
                       - ROI/BC

A detailed description of the components of this model is listed in Appendix A.

Measuring the return on investment when employees are trained.

Measuring the return on investment of training employees is a difficult measurement to make. Some experts say it is hard to measure the direct effects of training employees. There are so many other variables that could effect the results of measuring the training benefits. Some experts say it is impossible to measure the benefits of training. Typically management wants to see the benefits and results of the training they are allocating money towards however most will not budget money towards the measurement of the training's effects.

The four levels of evaluation

In 1959 Donald Kirkpatrick, a former marketing professor at the University of Wisconsin, developed what are called "The Four Levels of Evaluation"

- Reaction
- Learning
- Applied learning on the job
- Business results

Reaction can easily be measured right in the class room while the training is taking place. Do the trainees like the approach you are taking for the training? Do they understand the exercises and assignments you are doing during the training course? These types of questions can easily be measured during and after the class via an evaluation form that can be filled out by the trainees after the training course. Most corporate training programs include this type of evaluation of their training programs. This type of data is useful for future classes offered and enables the trainer to know what is working and what is not. This will help the course to evolve and become presented in manor that is best for the trainees.

Learning refers to, did the trainees learn any from the training course? This can also be easily measured during or after the course via a test. Learning is simply, did any one learn anything from the material that was presented during the training course. Most corporate training programs survey for this type of information after a training program is completed.

Applied learning on the job is more difficult to measure and is typically not done after the completion of a training program. This type of measuring occurs after the course in competed typically three to six months after the course has been completed, and will focus on measuring the behavior of the trainees and how they apply their new attitudes, knowledge and skills on the job. This type of evaluation can be done through, follow up interviews,

surveys or questionnaires, follow up assignments, focus groups, or observations. The problem with this type of measuring is that management typically will not allocate the time and the resources required to collect this data. When in reality, this is required for corporation to truly understand if the money they are spending on training is being put to good use and truly befitting the corporation.

Did the training effect business results? After the applied learning data is collected cooperation's will need to determine if training produced measurable results. This is typically a difficult thing to measure because other variables. For example if a company trains their sales force on a new product and the product is very successful, this does not mean that the training directly was the result in the product becoming successful. The product may have been advertised and marketed in the right way, the product may just have the right features for the market thus creating a very high demand for the product. The sales training may have helped, but the training can not take all the credit for the success in the scenario.

Formulas for measuring return on investments

There are two common formulas for calculating return on investment, they are the benefits/cost ration (BCR) and ROI. To find the BCR you divide the total benefits by the cost. In the ROI formula you subtract the costs from the total benefits to product the net benefits which are then divided by the costs. Typically the benefits are annual, the amount saved or gained in the year after the training is completed. The cost are the development cost of the program as well as the time for the people that go through the training. Even with these formulas many experts say that these are not valid ways to measure the return on investment of a training program because of the other variables that play a part in improvement of a product or service.

What types of training are more difficult to measure than others?

Some types of training are more difficult to measure than others. For example, if a manufacturing plant trains their employees about the safety precautions they should take in the factory, they can measure the number of accidents before the training and after the training. This is an example where an argument could be made that the data collected before and after the training is valid in proving that the training was valuable to the company and worth their investment.

Microsoft did an experiment where they created a control group in a training experiment. Microsoft purposely did not training a portion of their sales force as they were hired on at Microsoft. Mangers were survey at the end of a year on how quickly their sales force came up to speed with the sales skills required to sell Microsoft's product. It was determined that it took three months for the untrained group to learn what the trained group has learned through the sales training. Doing this type of an experiment is difficult because no one wants to be in the control group and not be prepared for their job. However this need to be done in order to prove a point and validate that the training that Microsoft provided their new sales representative is indeed valuable to the companies bottom line.

Recommendations

Measuring the benefits of the training programs is not and easy task. One way to ensure that a cooperation's money is being spent on the right type of training is by keeping in mind the corporations goals when the training courses and programs are being developed. This will help the training directly effect the corporate strategies and goals. Another thing to keep in mind when developing new training courses is that you need to keep in mind that the things that you are going to teach in the courses will need to be measured using the 4 levels of evaluation. It is helpful if the course and the evaluation are developed simultaneously. This will make it easier for the trainer to directly measure the results of the training program at a later date. While measuring is difficult it is not impossible and keeping mind the fact that your need to measure the training will directly help the training money

Interview with Intel training manager

We performed an interview with Intel training manager, Rod Beta at Intel Arizona, to understand why Intel trained, what type of programs they implement, and how they measure their ROI.

Why does Intel Train?

There are two areas that Intel focuses their training efforts. The first they call technical training, this consists of, training on specific equipment used in the fabs, and software and hardware training. The second area of focus of training is what they call soft skills. These courses focus on corporate culture, legal, and managerial types

of training. The soft skills training helps determine the Intel culture through out the cooperation world wide, this helps keep the culture consistent from site to site around the word. Managerial training helps protect Intel in legal situations it may encounter. For example if a manger fires a certain individual and that person feels that it is unjustified under the law, Intel can protect itself legally by proving that their mangers undergo legal training on firing an individual.

What types of programs does Intel implement?

Intel finds that approximately 80% of its training is done via an instructor teaching a class in person. The remaining 20% is done with video tapes and interactive software. Intel's goal is to reduce the amount of instructor training, and transition more of their training to interactive software, training performed over video conferencing, and eventually over the Internet.

How does Intel measure their return on investment on training?

Intel admits that measuring the ROI of training is difficult to do. Interestingly though Intel tries to follow the four levels of evaluation developed by Donald Kirkpatrick. The first level, reaction, is typically done after every training course offered by Intel, Rod admitted that this is the easiest level of evaluation of the four. The second level, learning, is typically done in the more technical types of training course, where it is important for Intel to understand that their employees are indeed learning the material being presented during a training session. Applied learning on the job is typically not done at Intel, because it is difficult to find the resources to go back and perform the follow up interviews or observations with the people that have taken the course. Measuring the business result is the most difficult level for Intel and has never been done. Rod stated that Intel recognizes the need to train it's employees and training budgets are determined based on the number of existing and new people at Intel every year. If Intel hires 1000 new employees in a given year it is recognized that those people are going to require training such as orientation and other various culture classes, and money is allocated from the general budget. Additional money for additional training is obtained from the employee's specific department with in Intel. If the different department within Intel are permitting their people to take certain courses than the training organization continues to offer them. The less frequently attended classes are the ones that are evaluated every 6 moths or so as to whether the courses need to be changed or discontinued.

Discussions and Conclusion:

In recent years we have heard a great deal about training and how important it is, the money being invested in training and the great results achieved. In this paper we sought the facts. We tried to answer the question of "why corporations train, how they implement training, and is it effective?"

With advances in technology, corporations have felt the technological and economical pressures which call for renewal and rejuvenation. The renewal process has surfaced the need for employee training. Often corporations admit that they need some form of training. They often advertise their programs as either an incentive to attract new employees or as a measure of their dedication to the matter. The reality however lies far from it. The data presented in this paper shows that the training budgets in the recent years have been virtually flat. It is important to note that this performance has been recorded despite a time of economical expansion and growth in employment. This performance is partly due to more focused and job specific training. The data also shows that some areas, especially those that generate immediate income, have consumed the majority of resources while infrastructure training was implemented by only a minority of those surveyed in the literature.

Despite all the hype about training in the recent years we see that training budgets have stayed flat. So what is all the hoopla about? It seems that we are in a time where the importance of training is understood while there is no clear way to distinguish the gain from the investment in training. In order to justify the cash needed for implementing training, there needs to be a method of quantifying the return on the investment. Since there is no clear way of quantifying results, it becomes very difficult for corporations not to view training as cost center. Corporations generally are trying to minimize or eliminate the impact of cost centers. The level history of budgets and the statistical data seem to confirm this conclusion.

Although many corporations are trying to define measurement techniques to measure results they have not been very successful. Like any other business activity the spending needs to be justified before the investment is made. Until then, the training budget is going to be viewed as a cost and not an investment.

The data also indicates a tendency towards least expensive alternatives. It is interesting to notice that the type of training is almost flat. Corporations seem to value training but it seems that they are not too specific about the type of training. This is somewhat surprising when we compare this with the data presented for the infrastructure training versus impact oriented training. This data seems to suggest that short term training, i.e.

related to basic job functions, is highly supported while deeper levels of training, which might have long term effects in the corporation, are not as strongly supported. This could be due to the difficulties corporations have in measuring the results they gain from training.

Different companies have different business strategies, hence different needs for training. It is evident that in order to get the maximum results a training program needs to be customized to the needs of the corporation. And the corporation needs a total commitment to the process from upper management in order to effectively implement the necessary programs. Based on the studies we performed it is suggested that certain types of businesses have a greater tendency to implement long term, infrastructure training. However in order to address their immediate needs, corporations are especially responsive to short term job training needs. The more fundamental type training needs to be evaluated and implemented when the organizational goals and business strategies are developed. These long term programs need to be woven into the fabric of the business and company strategy. In order to have successful training, the organization needs to create a program involving all the stakeholders and based on the needs and the culture of the company. Building in rewards and measures to evaluate the progress of those involved is essential to the success of training programs.

We suggest following the training model outlined in this paper for a more effective training program. Also we suggest the following practices:

- View training as an investment in infrastructure, not as a cost center

- Integrate training into the corporate culture/strategy

- Customize training to the needs of the corporation

- Evaluate and measure the benefits and results of training

Appendix A

Training Strategies

There has been a lot of attention directed toward training strategies in organizations operating in dynamic or technologically oriented environments. The faster conditions change and more complicated they become and the more important training becomes.

Employer mandated training - This is training that precedes job success. Apprenticeships and management training programs are examples. It is a given that this training is necessary - it has been proven over time. Organizations in stable environments capitalize on this. Jobs do not change significantly over time so skills needed will not change much either. Employers may also use this to level the playing field. Any given workforce represents a wide diversity of skills. Employers may ensure their employees are on the same level by mandating basic skill training.

Employee choice training - This has been growing in popularity. Many highly technological companies assert they cannot even know what jobs they will have available in the future let alone train for them. They rely on their employees to choose the way.

Since it is not known when training will be needed or for what, many organizations utilize just-in-time training. This allows employees to receive training when they determine they need it.

Skills

The type of skill to be taught will effect the method selection. All training programs fall into four types:

- Basic skill training
- Job skill training
- Workplace skill training
- Non job related training

Basic skill training -This is training for specific skills for general jobs. These skills may be used in more than one job, more than one company and in more than one industry. Teaching an administrative employee how to use a word processor or a manager successful conflict resolution would be examples. Often corporations will require employees to undertake this type of training on their own.

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Job skill training - This is training for specific skills for specific jobs that are needed only in the organization. These generally are not transferable skills - i.e. other companies would not benefit from these skills. All corporations supply all of this type of training.

Workplace skill training - This is training that all employees need for the corporation to benefit, regardless of job specifications. Some of this training is organizationally specific, such as new hire orientation. Some is transferable, such as safety and organizational practices(ex. team building). The environment outside the organization can affect workplace training. A current example is harassment training.

Non job related training - This is training where no direct benefit can be seen by the corporation. But there are indirect benefits. An example could be art appreciation. This type of training appears in industry either as a recruiting incentive, an employee turnover reduction plan (satisfied employees stay) or corporate self aggrandizement.

Corporations will have training needs in several skill areas. If the skills to be trained are not company specific, it may be cost effective to buy that training rather than developing it. Computer training is such a program.

Methods

The methods for implementing training will be a combination of in-house training and purchased or outsourced training. Which method to use directly correlates to the type of skill to be taught.

In-House - This is corporately developed training. This method always covers company specific job skill and workplace skill training but can also cover all corporate training needs. Control and focus are key concepts utilized in in-house programs.

Training is more likely to be utilized if it is convenient. It is also more cost effective if it is centralized. In-house or corporate universities address these issues. An in-house university also allows the corporation to control the curriculum so that only relevant courses to the corporation will be taught.

Professional specialists or internal consultants can be hired as a part of corporate universities or on their own. They will also teach corporately relevant topics but can add an outside perspective.

Line managers as coaches or trainers is growing in popularity. This method streamlines the education process, not only financially, but by having the evaluator be the teacher ensures the training is utilized.

Job rotation is literally moving from one job to another within a company. This method promotes cross training, is cost effective, and helps build a team atmosphere.

Outsource - This is purchased training. It is mostly used for general training programs such as general skill training or workplace skill training. Outsourcing is a good way to expose employees to new ideas that they would not come in contact with in in-house programs.

Traditional institutions such as universities and colleges are still the leading source of learning. They are the breeding grounds for the new ideas of the future. And they provide a wide array of subjects.

There are new partnerships emerging of business' and universities. There have been partnerships between vocational schools and industry for a while. The needs of the business are conveyed to the school to be taught.

Budget and corporate location will restrict method choices as well as market availability of outsource programs.

Delivery Systems

Delivery systems will have varying levels of effectiveness depending on what is to be delivered. The content of the training course as well as the demographics of the trainees should be considered.

classroom/lecture - This is the most widely accepted form of training. It is sometimes considered the least effective way to train due to trainee's limited (shorter than the lecture) attention spans.

case studies - This is group discussions of real-life situations. This can be a powerful just in time tool when case features are aligned with current problems.

role playing - This requires the group to act out real-life situations. The trainees have no choice but to become fully involved. It is most useful in bridging the gap between theory and practice.

video - This is easy to use and flexible. Videos can stand alone or enhance lectures. Picturing, through video, often makes concepts easier to grasp by the trainee.

interactive media - This is a rapidly growing area of training based on IT(information technology) It is a combination of video and computer learning. It holds the trainees interest and requires their full involvement. It has a side benefit in that it promotes computer literacy.

self study - This is generally text based learning. It is more effective when used with strongly self motivated trainees. Although it allows self paced learning, there must be dedicated follow up from the trainer to confirm learning.

tutoring - This is providing selective training based on individual trainee's needs. It is primarily a one-on-one approach. A recent addition to this system is coaching. This is a form of tutoring by an employee's senior or experienced colleague rather than an outside instructor.

Bibliography

T. Amivault, "Job Training: Who needs it and where they get it", *Occupational Outlook Quarterly* pp 19-31, Winter 1992/93

T. Barron, "A new wave in training funding", *Training & Development* vol. 20 no. 8 pp 28-34, August 1996

J.E. Bowsher, Educating America. New York; John Wiley & Sons, 1989

C. M. Burbano, "How to Advance your Employees Education", *Tampa Bay Business Journal* vol. 15 no. 30 pp S42, July 1995

A. P. Carnevale and Ellen S. Carnevale, "Growth patterns in workplace training" *Training & Development*, v48 n5 pS22-30, May 1994

B. Filipczak,; J. Gordon, "What Employers Teach", *Training* vol. 29 no. 18 pp 43-56, October 1992

A. Fowler, "How to: decide on training methods", *People Magazine* vol. 1 no. 25 pp 36-38, December 1995

H.J. Frazis; D.R.Herz; M.W. Hornigan, "Employer provided training: results from new survey", *Monthly Labor Review* vol. 118 no. 5 pp 3-18, May 1995

L. Keegan; B. Jacobson, "Training goes mod(ular) at Apple", *Training & Development* vol 49 no. 7 pp 38-41, July 1995

R. Mendosa, "Is there a pay off?", *Sales and marketing Management*, vol147 n6 p 64-71, June 1995

A. Mykytivk, "Training is the key to success in the '90s corporate climb", *Paper, Film & Foil Converter* vol. 69 no. 9 pp 76-78, September 1995

"New US Training Spending Outpaced by Worker Growth, ASTD says" , PR Newswire Inc. Washington, July 17, 1996

S. Olsten "Skills for Success", The Olsten forum on human resource issues and trends 1994
1995 industry report: a statistical picture of employee training in America Training, v32 n10 p37-41 Oct 1995

P. A. Phipps, "Investment in Employee Training", *Monthly Labor Review* vol. 119 no. 6 p 40, June 1996

D.A. Ready, "Educating the Survivors", *Journal of Business Strategy* vol. 16 no. 2 pp 28-28, March-April 1995

R. Saggers, "Training climbs the corporate agenda", *Personnel Management* vol. 26 no. 7 pp 40-44, July 1994

J. Schriner, "Where are the quality workers", *Industry Week* vol. 245 no. 16 p 52, September 1996

D.R. Tobin," Re-educating the Corporation" *Essex Junction, VT: The Oliver Wright Companies*, 1993

Training budgets.(1995 Industry Report), *Training*, v32 n10 p41-50, Oct 1995

Trends. (US employee training)(1995 Industry Report), *Training*, v32 n10 p69-70 Oct 1995

B.S. Watson, "The new training edge: Training has become a way of bonding with employees and the corporate university is fast becoming the model of choice", *Management Review* vol. 84 no. 5 pp 49-51, May 1995

W.H. Weiss, "Techniques for training and instructing manufacturing plant employees", *Supervision* vol. 55 no. 10 pp 18-21, October 1994

L. A. Williams, "Measurement made simple", *Training and Development* vol 50 n7 p43-47, July 1996

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Topic: Why corporations train, how programs are implemented, and is the
training effective?

Abstract

There has been an increase in training development and implementation nation wide in

various industries, yet there is no clear definition of the benefits or measure of their impact. This

research focused mainly on literature reviews, the data presented about the training programs

through out the country. We interviewed a training specialist to confirm our ideas. Why

corporations invest in training, how they implement their training programs, and what measures

they take in evaluating the effectiveness of these programs was the focus of this work. We

analyzed the trends and the data on where corporations focus their investment for training, the

type of investment they make, and the programs they implement. We also studied techniques for

evaluating training programs effectiveness and the methodology used, in doing so. In conclusion

we analyzed the information and presented a model for creating, implementing and evaluating

training programs. The model suggests a training program based on the corporate goals,

integrating management methodology and evaluation process from the start of the

implementation program.