Deep in Benchmarking: Using Industry Standards to Assess a Training Program

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ABSTRACT

At the University of Missouri – Columbia's Information and Access Technology (IAT) Services, InfoTech Training compares the results of their IT training program with similar training programs. Benchmarking studies assess best practices from organizations throughout the world and measures actual training operations against those best practices. InfoTech Training's primary project goal was to measure program performance against industry standards and best practices.

This paper explores the challenges of:

- Determining which benchmarking services to utilize
- Collecting data for various benchmarking studies
- Comparing and analyzing data
- Measuring performance improvement
- Measuring trainer performance
- Analyzing findings
- Determining improvements

From the various benchmarking surveys, InfoTech Training conducted data comparisons with industry standards gathered from other higher education institutions, government agencies, and the private sector. As a result of this comparison, InfoTech Training has established that they are meeting or exceeding the majority of the training industry standards.

This paper serves as a blueprint to benchmarking an IT training department. Benchmarking is just one tool to build a top-notch program. The next step in measuring training program effectiveness is to use the benchmarking data to calculate the program's return on investment (ROI). The ROI in turn determines whether the program can justify its expenditures.

Categories and Subject Descriptors

K.3.m **[Computer and Education]**

General Terms: Management, Measurement, Performance

Keywords: Training, Benchmarking, Return on Investment, Kirkpatrick's levels of evaluation, Industry Standards, Best Practices

1. INTRODUCTION

Benchmarking is a powerful assessment tool, whether assessing detailed processes or IT programs. This paper discusses what is needed to successfully use this tool, how to evaluate the right metrics so that the findings are relevant and useful, and how to take all the data and determine program effectiveness. The end result is a measurement of MU's InfoTech Training program against other training programs throughout the world and determining whether the program is in the lead or trailing behind other training programs.

2. GOALS

In order to determine whether benchmarking is the best tool to measure program efficiencies and effectiveness, some decisions must be made before starting. Questions to explore before starting include: When should data collection start and for how long should data be collected? What training programs, courses, or activities should be targeted for data collection? What benchmarking services are available and what are their costs? How will the data help the program move forward to meet strategic targets?

The goals for InfoTech Training's benchmarking project were to:

- Determine effectiveness of the training program
- Measure trainee performance improvement
- Determine measurements for trainer performance
- Compare findings to determine whether the program met industry standards and best practices
- Develop plans for improvement in areas where industry standards are not met

3. PLANNING

In order to effectively use such a powerful tool as benchmarking, InfoTech Training explored deployment of the tool to achieve stated project goals. Not only were existing benchmarking services evaluated, but the services' objectives for data comparisons were also analyzed to see how closely they matched InfoTech Training's goals. This analysis, prior to starting the project, is absolutely necessary in order to receive meaningful data for effective performance measurements and meeting project goals.

3.1 Determining What Services to Utilize

After researching multiple benchmarking companies and the tools they employ to collect data, InfoTech Training selected two. Some companies focused more on processes than program effectiveness and were not selected. While measuring process is important, the project focus was on measuring program effectiveness.

Understanding what comparison groups each benchmarking service utilized was another important planning decision because comparison groups are the primary data sources. Initially, management wanted to compare InfoTech Training's program only to other higher education institutions' IT training programs. But, as research progressed in determining who would provide the best data comparisons, management found that benchmarking against the training industry as a whole provided a better picture of best practices. Benchmarking against other institutions, only to find that there was not much data available, would not help accomplish the project goals.

3.1.1 ASTD Services

The American Society of Training and Development (ASTD) Benchmarking Service was selected [1]. Their service provides a standardized series of measurement tools that organizations can use to monitor and evaluate the effectiveness of their training program.

ASTD's online benchmarking service contains two parts and uses a series of measurement tools that monitor program effectiveness. One key measurement InfoTech Training was looking for is whether the training a participant acquires in the classroom transfers to the participant's job performance. This measurement specifically correlates training to productivity increases, and assists with benchmarking data comparisons as well as ROI calculations. ASTD's comparison groups included everything from small to large organizations, worldwide to US only organizations, and various sizes of educational institutions.

Part I: Training Investments measures how the training program affects services and contains a series of questions designed to measure investment in training. Questions include program expenditures, outsourcing, training content, methods of instruction, evaluation practices as well as the number of employees, total payroll, and industry type. Part I provides data to measure InfoTech Training's program against other industry training methods, evaluation, and outsourcing.

Part II: Training Outcomes measures the effectiveness of the training received and contains post-training course evaluation surveys. One survey is conducted immediately following the training event and is considered a Level 1 survey according to Donald Kirkpatrick's four levels of evaluation research [2]. Two other surveys are conducted two weeks after the training event and are considered by Kirkpatrick as Level 3 surveys. The Level 3 surveys are sent to the participant and his/her supervisor. The questions measure the same outcomes, but address the outcomes through two different perspectives - the participant and the supervisor. The Level 3 surveys allow the training program to measure employee productivity after the training event.

ASTD also provides a free benchmarking report after Parts I and II are completed and submitted to ASTD. The report compares InfoTech's training program's data with selected comparison groups. Comparing the data with other higher education institutions is one option, but comparing against worldwide companies that have the same customer base size is also an option. The project goals drove InfoTech Training's selection of ASTD data comparisons groups.

3.1.2 TBE Services

Management also evaluated The Benchmarking Exchange (TBE) to supplement ASTD data [3]. TBE administers various benchmarking surveys with employee development training and Information Systems Technology as their top two programs benchmarked. Each survey is sponsored by a company and specific data is requested and compared.

Since TBE's top two benchmarking areas are employee development and Information Systems Technology, TBE's services fit perfectly with the project goals. TBE's comparison groups include more than 44,000 members world wide. Their online "Surveyor" tool solicits company specific benchmarking questions with a 48-hour turnaround. While InfoTech Training did not select to conduct a specific survey, management decided to participate in various training surveys that focused on staff training, best practices, and performance measurement in order to receive a copy of the final results for data comparisons.

4. IMPLEMENTATION

In the next phase, InfoTech Training began collecting data for the ASTD surveys and for specific company TBE surveys. All data collected and submitted to ASTD and TBE was done online. All survey results and data comparisons were also returned electronically.

4.1 Collecting Data

This part of the benchmarking process takes the most time. In order to participate in the ASTD benchmarking services, Part I requires data to be collected in a timely manner, and Part II requires data collection for a full year. TBE's benchmarking services required immediate data collection.

4.1.1 ASTD Data Collection

Part I: Training Investments requires the collection of following types of data:

- Organization Size and number of employees
- Training Expenditures
- Delivery Methods
- Customer Base and Potential Users
- Training Practices
    - Performance Reviews
    - Tuition Reimbursement
    - Customer Education Level
- Training Content
    - Percentage of expenditure by employee type
    - IT training by employee type
- Learning Technologies (optional)
    - Distribution of these technologies
    - Percent usage change
- Use of Providers and Evaluations (optional)

    - Who provides training
    - Types of evaluations
- Salaries and Functioning of Internal Training Staff (optional)
    - Time spent on various training activities
    - Hrs. of professional development

Management collected Part I data through various database sources. Some data required access to confidential information accessible only to management. After Part I data was successfully collected, management moved to collecting Part II data.

Part II: Training Outcomes requires the following types of data to be collected:

- Kirkpatrick's Level 1 Evaluations which measure Reaction (Participant Feedback)
    - Administrative/Logistics
    - Content
    - Design
    - Instructor
    - Perceived Impact
- Kirkpatrick's Level 3 Evaluations which measure Behavior (Participant and Supervisor Feedback)
    - Use of Skills
    - Confidence in Ability to Perform
    - Barriers to Enablers of Transfer
    - Impact Measures

The data in Part II was strictly collected from customers, not by the manager, over a time period of one year.

4.1.2 TBE Data Collection

InfoTech Training participated in 5 surveys over the 1-year data collection period. The survey titles include:

- Classroom Training Best Practices (2 surveys)
- Training Performance Measurement
- Skill Assessment and Training
- Staff Training

These surveys were conducted by TBE for companies such as Kodak, American Express, and the US Army.

Data collected for the surveys included:

- Types of IT training available to staff
- Who delivers training – internal or vendor
- Do you furnish your own labs or use vendor's
- Location
- Costs
- Avg. # of students/instructor-led course
- How do you screen for participant's ability
- Is training mandatory
- Delivery methods
- % of budget allocated to training
- Curriculum development time
- Avg. length of courses
- Assessment tools
- Types of enrollment tools and tracking

While there was some overlap with ASTD survey questions, the data provided multiple outlets of comparisons and the ability to cross-reference for validity.

4.2 Collecting Performance Improvement Data

This particular goal of the benchmarking project involved ASTD's Part II: Training Outcomes. The surveys conducted in Part II provided feedback from the participants immediately following the course as well as from these participants and their supervisor after a designated time following the course, usually two to twelve weeks. ASTD allows each training program to determine what the time length is for the post-training assessment.

Part II-A involved Kirkpatrick's Level 1 evaluations completed immediately following the course. They provide an initial evaluation of the course. To collect this data, InfoTech Training changed their existing Level 1 evaluation questions to ASTD's questions. Management decided to evaluate the data from all end-user courses instructed. This course evaluation is an online form, easing data collection and compilation work.

Part II-B involved Level 3 evaluations and a new method of collection for the program. Management determined to collect this data two weeks following the course. While some programs do not evaluate this level until 90 days after training, management believes IT skill transfer is quicker than other types of training, such as HR soft skills, because there is an immediate change in performance versus implementing HR soft skills concepts.

To implement Part II-B participant and supervisor surveys, InfoTech Training's online registration system was updated so it could generate an automated e-mail with a survey link two weeks after the course to both the participant and his/her supervisor. Once they completed the survey online, the data was directed to a database for collection and compilation.

The Part II-B data was also used to develop InfoTech Training's Return on Investment (ROI). The data collected dealt with the participant and the supervisor determining the percent increase in the productivity of the employee. InfoTech Training used the most conservative percent increase submitted for computing the ROI which was 43%. On the average, the supervisor's evaluation of the performance improvement was lower than the participant's evaluation of improvement. This is one of many factors that went into formulating the program's ROI.

4.3 Collecting Trainer Performance Data

While Level 1 course evaluations provide trainers immediate feedback on the training event, they usually lack the assessment of skill improvement and the ability of the trainee to apply the new skills in their workplace. The Level 3 evaluation data provides this missing information. Measuring the transfer of skill acquisition allows the trainer to evaluate the curriculum as well as how s/he assisted the participant in the learning process.

In addition to measuring trainer performance in the classroom, InfoTech Training wanted to measure trainer performance outside

the classroom in areas such as professional development, curriculum development turnaround, salary comparisons, and percentage of time worked on various training activities.

InfoTech Training collected data from both the ASTD and TBE surveys to measure trainer performance. Comparing industry standards for trainers helps in developing yearly performance appraisals as well as targeting performance goals consistent with industry standards.

5. DATA COMPARISONS

For the ASTD benchmarking study Part I, InfoTech Training chose the following three comparison groups:

- All Educational Services Worldwide
- All Educational Services in the US
- All ASTD Comparison Groups

InfoTech found that the third group, comparing against all data in ASTD's benchmarking database, provided the most comprehensive data comparisons. This validates TBE's assertion about comparing to all groups and not only a few competitors or similar programs.

Table 1: Program Data Comparisons

Standard	Industry	InfoTech Training
Growth in Expenditures	15.7%	8%
Training Received by Employee	25 hrs/year	0.7 hrs/year**
% of Payroll/Employee	1.5%	0.2%**
Cost of training/employee	$657	$15**
% Employees receiving training	74%	13%**
% Training budget to trainer salary	44%	46%
Training Mandatory	75%	0%
• Instructor-led • Web-based • Other	• 76% • 12% • 12%	• 85% • 10% • 15%
Trng. during Business Hrs.	90%	98%
Reassess Program Annually	64%	100%
Avg. # of students/class	1 to 16	5 to 15
Who Delivers Training	- 45% Combination of internal and external - 26% internal - 20% external	100% combination of internal and external
Web Based Training Usage Rates	- 41% have 1 to 10% usage - 15% have 11 to 20% usage	1% Usage Rate

** Industry expenditures include both HR (soft skill) and IT training centralized under one budget. At MU, HR and IT programs and budgets are decentralized and exist in two different MU Divisions.

Table 2: Trainer Data Comparisons

Standard	Industry	InfoTech Training
TRAINER TIME SPENT:		
Analysis	10%	10%
Selecting Interventions	8%	5%
Designing Interventions	20%	25%
Implementing Interventions (Hrs in classroom teaching)	28%	30%
Evaluating Interventions	5%	5%
Other Activities	29%	25%
TOTAL TIME SPENT	**100%**	**100%**
Hours of Trainer Professional Development	37 hrs.	40 hrs
Curriculum Development with no existing course materials	48% take 2 to 4 weeks 24% take 1 to 3 months	100% takes 1 to 3 months
Curriculum Development by combining information previous course or paste suitable materials into a course	53% take 1 week 19% take 2 weeks	100% takes 3 to 4 weeks
Curriculum Development to tailor existing course involving changes of terminology and to include company preferences	42% take 1 to 17 hrs 27% take 17 to 40 hrs	100% takes 20 to 30 hrs

The comparison groups in the TBE surveys were private sector, both small and large business, and well as US government agencies. There were no higher education institution surveys during the time InfoTech Training participated in TBE surveys.

5.1 Measuring Program Performance

One of project goals was determining the effectiveness of the existing training program. Table 1 provides data comparisons with other training programs from ASTD's Part I data comparisons and all of TBE's data.

5.2 Measuring Trainer Performance

Another project goal was to determine effective measurements for trainer performance. Table 2 provides data comparisons with other trainer standards from ASTD's Part I data comparisons and all of TBE's data.

5.3 Measuring Performance Improvement

Another project goal was to measure staff performance improvement.

Table 3 provides data comparisons with other training programs from ASTD's Part II data comparisons. The comparison groups for Part II included:

- Information Technology Skills acquired from internal trainers
- All skills acquired from either internal or external trainers

Table 3: Performance Improvement Comparisons

Standard	IT Industry Standard	InfoTech Training
Opportunity to use new skills**	Participant 3.6 Supervisor 3.5	Participant 3.4 Supervisor 3.3
Confidence in using new skills**	Participant 3.9 Supervisor 3.6	Participant 4.0 Supervisor 3.8
Course content reflect what happens on the job**	Participant 3.9 Supervisor 3.4	Participant 3.8 Supervisor 3.5
Percent change in performance on the course objectives	Participant 39% Supervisor 34%	Participant 56% Supervisor 43%
Percent change in overall job performance as result of the course	Participant 34% Supervisor 25%	Participant 38% Supervisor 32%

** Data collection was based upon the following scale:

1 - Not at all or rarely

2 - To a small extent

3 - To a moderate extent

4 - To a great extent

5 - To a very great extent

6. FINDINGS

After receiving the data comparisons from ASTD and TBE, InfoTech Training determined whether they met industry standards based upon the project goals. While not all data collected was useful to MU's IT training program, management used about 70% of the data collected. The 30% not used was due to IAT Services InfoTech Training and MU's Human Resource (HR) training program operating from two separate Divisions, thus two separate training budgets.

Management concluded:

- Benchmarking against the private sector provided better "best practices" data as well as better performance measurements for trainers.
- ASTD Part II-B survey results showed that the supervisor does not always measure the increase in productivity the same as the employee. The percent increase is usually lower.
- InfoTech Training's program was on target in their delivery methods, salary budgets, number of students per class, trainer professional development, and trainer time spent on various training interventions.
- While InfoTech Training did not meet all industry standards in the area of training expenditures, they did meet industry standards with their training practices, training content, and learning technologies.
- Trainer performance met industry standards in all areas except curriculum development timeframes.
- Performance improvement measures were close to industry standards in regards to opportunity, confidence, and content reflecting participant's job. Performance improvement from InfoTech Training's courses was higher than the industry standard.

7. PLANS FOR IMPROVEMENT

There were only two critical areas that did not meet industry standards. They are:

- growth in expenditures
- curriculum development time

The data comparisons show room for improvement in the amount of expected growth in expenditures. However, under the current budget climate, InfoTech Training's growth will continue to fall below industry standard growth.

The only other area for improvement is the amount of time it takes for trainers to develop and/or update curriculum. Management will work with the trainers to improve turn-around time with future curriculum development projects.

8. ACKNOWLEDGMENTS

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9. REFERENCES

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