

Learning to Baseline Business Technology

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ABSTRACT

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Businesses often pay monthly technology bills, sign multi-year contracts, and make purchasing decisions without having an overall technology plan. That plan includes a technology baseline to fully assess existing technology.

A CIO's goal is to align IT with business goals. Businesses must know total cost of ownership and the return on investment for all technology purchases and monthly costs. A business must also be able to manage technology assets and best utilize resources across the business.

Teaching students to baseline technology will enable them to track and manage costs, discover errors and waste, and consolidate and improve existing technology.

Keywords

Addressing: Acquiring metrics and developing budgets; business cases for learning measurement; Return on Investment (ROI) and Improved Productivity

Anyone who has ever looked at a map and been confused can appreciate very quickly the old adage 'you can't get where you're going if you don't know where you're at'. This is equally true for businesses. In order for a business to accomplish this task they too must determine where they are. This process is known as baselining, or benchmarking. According to Cheryl Yaeger of BenchMark Consulting International:

Webster defines benchmarking as "the study of a competitor's product or business practices in order to improve the performance of one's own company".

While Webster's definition of benchmarking focuses on external competitors, many organizations also find value in using internal benchmarking programs to improve their performance across geographic sites, business lines and functional support units.^[1]

Baselining serves an even greater purpose within a specific business unit, such as IT or telephony support. It provides a basis for change, and subsequently assessing the effect/value of that change. Linda Russell, in her online article, 3 Main Reasons for Baselining states: "The main benefits of having a project baseline are: Ability to assess performance, Earned value calculation, and Improved future estimating accuracy."^[2]

This process is often taught in business and finance departments but rarely is associated with technology. However, technology is a determining fiscal solvency. In fact, technology often represents a significant portion of the capital for a company and must be carefully considered when changes occur. The teaching of baselining, related to technology, should happen in technology classes. It is often more complicated than keeping track of inventory, products produced and end of year balances. Technology gets outdated, neglected and very difficult to track over time.

As a part of the Communication Technology program at Eastern Michigan University the baselining of technology and analysis of need occurs in the CMT 408 Telephone Technology course. To baseline/benchmark equipment requires assessing what is still in use, what is functional and what is physically present but no longer viable within the context of the current system. With regard to telephone technology this is typically equipment that has been modified, added to or evolved without the benefit of a change management process and documentation over a period of time, often many years. The class utilizes real data gathered either from a business or industry where a student works or has access or by utilizing the university telephone system located within one of the building. The class activities outlined below describe the analysis of existing facilities, the development of a request for proposal (RFP) based upon future need and the development of a rubric for the evaluation of proposals submitted to respond to that request.

The assignment for CMT 408 Telephone Technology is designed to assess a company's Telecommunication System to determine what the company currently has and what new equipment may be needed.

commodity and must be planned for and evaluated in its own measure just as it is accounted for on the ledger sheets of those. Once the need has been determined, sets of proposals are assessed to obtain a recommendation for purchase. The final portion of the project creates a plan for the company to follow during installation of the new system.

To begin the preparation portion of the assessment, students must locate the point where the telephone company's network ends and the customer's wiring begins, also known as the demarcation point or the dmarc. Everything at the dmarc needs to be recorded or photographed. This includes all labeled lines and circuits whether they are connected or not. At this point, it should be determined if any additional equipment will be needed to support the new system. The purpose of each line and circuit must be determined. This can be done by comparing the numbers recorded at the site with current phone records and/or by calling each number. Students will analyze the current phone bill to determine what contracts are in place and when they expire.

Specific items that should be included in the inventory are:

- Telecommunications entrance and demarcation/termination
- MDF/switch room, IDF rooms
- Structured cable systems
- Risers, feeders, conduit/pathways, station cable
- Wireless: LANS, access points, stations

The equipment/feature inventory should include:

- Active – In-use
- Inactive – Available, warehoused

- Inactive – Out-of-service, in maintenance, telephone equipment repair
- On order
- Warranty/out of warranty
- Plan for purchase of new equipment (reorder, new technology, etc.)
- Equipment, service, feature
- Circuits
- Vendors
- Purchase orders
- Technicians/other personnel

Additionally, a floor plan of the company is needed and must be marked to indicate all of the locations for telephones, additional data cables, fax machines, computers, printers, and any other equipment that requires a voice/data connection. At this point, a questionnaire to determine the internal needs of the company should be completed.

The next section of the assignment requires the students to assess several proposals to determine which system to purchase. Given the company's priorities for a new Telecommunication System, a scoring grid is set up to help analyze and rate each proposal. After the scores for each proposal have been assessed, a recommendation and justification for purchase is made.

The final portion of the project is to prepare for the installation of the new Telecommunication System. A call flow diagram is created, based on the company's needs, to indicate how the new system will handle inbound calls. A current phone list should be created and distributed to personnel of the company. After determining the usage of phones for the managers and different departments, phone templates will be created. Help procedures for employees and a plan to handle any "down time" (no phone access) when the system is cutover are the final portion of

this project. All of the information obtained during this project is presented to the class by each group. If a real company was used for the project, students are also encouraged to present their findings to that company. This project serves as a real world example and practical application of baselining, cost containment and technology implementation.

One of the major drivers for change, especially in a down economy, is the need for a business to accomplish more with fewer resources. Businesses are constantly looking for ways to lower their operating costs and reduce budgets. One area that is often overlooked, but typically ripe with opportunities for savings is technology and telecommunications.

A company's chief information officer's primary concerns are: aligning information technology with the business's goals, reducing costs, and proving return on investment for any new technology purchases and upgrades. In the scope of the course, students are taught the process of cost containment. They are also introduced to the concept that telecommunications is something that enhances the profitability of a business, not merely an expense that must be paid monthly.

Part of the process of cost containment is to know exactly what technology assets a company has. This means that an inventory/audit should be taken of all equipment, lines (and what they are used for), circuits (and what they are connected to), cabling, etc. Included in the inventory should be items such as contact phone numbers for troubleshooting and outages, warranties, service contracts, service level agreements, and any other contracts that are associated with the telecommunications.

There are often many errors in billing. According to Richard A. Kuehn's article, up to 50% of all telecommunications bills contain errors^[3]. When looking at bills one should: ensure that what is being billed is actually in use, review local and long distance usage, compare charges to contract terms, ensure any service level agreements were met, and review all cellular/wireless bills.

All bills should be reviewed on a monthly basis. Part of the technology costs are fixed and should not vary from month to month. Contracts and fee-based services should be audited to ensure that the amount that is billed is the actual amount being used. All variable costs should be carefully reviewed. On a telecommunications bill, these variable costs are often included in the sections "Other Charges and Credits", where miscellaneous billing occurs, and "Moves, Adds, and Changes", where any changes to the account and fee increases are found. These two areas are particularly prone to containing errors.

Benchmarking should be completed to get a clear picture of a business's information technology assets. By creating a snapshot of all services and equipment, a business is able to establish accurate, controlled inventory of assets, services, and users; track and manage the cost of telephony assets; negotiate refunds on overcharges/errors; disconnect unused services (lines/circuits) and remove from billing; and consolidate accounts and invoices.

It is important to keep up-to-date documentation, which can include:

- Contracts
- Escalation & emergency contact lists
- Business continuity/disaster recovery plan
- Network diagrams/schematics

- Circuits, equipment & feature inventories
- Directories (multiple copies)
- Back-up storage (both on and off-site)
- Service delivery/order process workflow
- Repair – break/fix process workflow – for a business to contain costs, orders and repair requests for new service should be centralized

New projects and technology upgrades can be funded with the savings found through refunds and cost reductions.

Ultimately, the desired outcomes of this work includes lower costs and total cost of ownership, improved return on investment, and potentially continued employment as businesses often look to cut staff in times of financial stress.

As a business is making a plan for their IT strategies, they may think about a number of things and ask important questions such as:

- Is the company growing, maintaining, or downsizing?
- Does the company make fast decisions?
- Does the company have a cost reduction strategy?
- Is IT/Telecom in step with the organization's goals?
- How can I:
 - Reduce costs, risks?
 - Increase revenue & profits?
 - Improve customer satisfaction & retention?
 - Enhance telecom's contribution to the bottom line?

In conclusion, the importance of technology baselining may very well be a factor in the survival, or demise, of a company. John

Hagel and John Seely Brown expressed it in this way:

'The shift to Web services architecture for corporate computing is not only a matter of adopting new technology. It will require broad organizational and managerial changes as well as the development of new kinds of capabilities. A particularly big impact will be felt in the corporate IT department. CIOs will face new challenges and assume new roles.'^[4]

References

- [1] <http://www.benchmarkinternational.com>
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- [4] (*Harvard Business Review*, September 2001)

About the Author(s)

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Primary responsibilities as faculty member: Program coordinator for the Communication Technology undergraduate degree program. Teach both technical and theory classes in communication technology. Update curriculum and advise undergraduate students. Maintain technology labs associated with the degree program.

David has been teaching at the university level for 34 years in technical communications and technology studies. He is an assistant professor in the School of

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Marie has spent 17 years in training, telecommunications training and 13 years as an adjunct instructor for the Communication Technology program at Eastern Michigan University.

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Kim has participated in the Undergraduate Symposium at Eastern Michigan University, submitting a project on variable data printing and also her work was submitted to Meadows Publishing, creator of DesignMerge software,

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