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Cost Management Using ABC for IT Activities and Services

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THE IT DIVISION OF A SUCCESSFUL INTERNATIONAL COMPANY DEVELOPED AN ACTIVITY-BASED COSTING MODEL TO MEASURE AND ASSIGN THE COSTS OF THE INITIAL IT SERVICES THE DIVISION PROVIDES, ENABLING BETTER, MORE ACCURATE PRODUCTIVITY MEASUREMENT AND EFFICIENCY.

EXECUTIVE SUMMARY: With the proliferation of computer-related services, the explosion in data communication, and ongoing trends toward globalization, managers in high-tech industries are considering new ways to manage and control costs. The fact that most Information Technology (IT) services have varied degrees of intangibility makes it a challenge to measure the costs of the services delivered.

Activity-based costing (ABC), the alternative to the traditional cost accounting systems, has been applied to manufacturing and service industries. Successful implementations in the healthcare, insurance, and transport industries have been reported over the last few years, but few publications relate ABC to IT.

This article reports on a cost management project using ABC modeling focused on an IT division of a publicly held software development firm. The needs of the company to establish accurate recharge rates and define appropriate activities pertinent to business culture were the main driving forces behind the project. The modeling process required the definition of resources, activities, cost objects, and drivers that correspond closely to the organizational functions within the IT division. The resulting model provides a managerial tool to measure productivity and efficiency and is currently being used for IT cost chargebacks and process improvements. Such activities have not been reported in professional publications or activity dictionaries.

Cost management is becoming linked to Information Technology (IT) more closely. The globalization and proliferation of the computer and Internet-related systems have changed the paradigm for how business is conducted. CIOs, CFOs, and managers in IT are aware that costs need to be controlled for companies to remain competitive and improve performance in a changing world. Managing costs is an operational necessity in forward strategic planning in the IT environment.

John Shank suggests that cost management in a contemporary firm must not be internally focused nor should it use single cost drivers.[1] Instead, cost management should:

- Be externally focused,
- Add value,
- Use multiple cost drivers,
- Reflect unique cost drivers for each value-added activity,
- Base cost management activities on cost drivers or linkages with suppliers and customers, and
- Identify cost drivers at the individual activity level and pose strategic questions (outsourcing, forward/backward integration, establish new linkages with suppliers and customers).

The project we describe in this article reflects all of these dimensions of strategic cost management, ranging from benchmarking to establishing better communication and knowledge about recharge rates with an IT division's internal customers. We also explain how cost management was used to accomplish a variety of objectives relating to IT users in a major software firm, how the problems encountered by this company may help others, and how cost management processes can be utilized effectively for IT services. Other firms have had similar problems, but a literature survey finds that no similar solutions have been reported yet.

Data centers and client-server architecture developers have started using more meaningful accounting terms. Instead of using "CPU seconds" and "I/Os," new terms such as "cost per transaction" are becoming more common. But despite the new focus, IT has a long way to go in using accounting systems to meet the business needs of the organization at a level of detail that will satisfy every customer. Chargebacks for specialized IT services, such as CPUs, data storage, and communications, are not derived, for the most part, from strict cost accounting calculations.[2] Companies using chargeback systems often overestimate the value and accuracy of their cost accounting systems. Traditional cost systems have been known to distort costs and often provide inaccurate information while assigning costs to unrelated accounts.

Activity-based costing (ABC) is regarded as an improvement upon this situation because it assigns the cost of resources to a group of activities and then to particular services (cost objects). In this article, we will describe how an ABC model was developed for an IT-based business entity. Company XYZ (name withheld on request) is the IT division of a successful global software development firm. The ABC model traces and maps the consumption of IT costs for a wide range of internal services provided within the organization. The resulting model provides a managerial tool to measure productivity and efficiency and is currently being used for IT cost chargebacks and process improvements. We provide information on the design choices for each model component and data to evaluate the utility of the model: the cost percentages channeled through the model, a range of recharge rates, and a comparison of these results with historical allocations.

The major challenge in developing this model was dealing with limited information availability because technology changes quickly in the IT environment, and, as a result, few prior cost management studies have been conducted. Furthermore, the majority of services provided by the IT division have a high level of intangibility that makes it more difficult to pinpoint the processes and activities that consume costs in real time.

ABC Model Requirements

The ultimate design of an ABC model must take into account the trade-offs among accuracy, flexibility, and cost.[3] Company XYZ provided very specific instructions that the final ABC model should not be too complex or too detailed. The company indicated a strong willingness to accept less accuracy in favor of a more manageable model. Simplicity and user acceptance were the foremost modeling requirements.

ABC is similar to many of the techniques concerned with the improvement of operating performance, such as process mapping and redesign, performance measurement, and cost analysis, but the link between activity analysis and information systems (IS) is rarely made. Those setting an IS strategy can systematically analyze the information required to run the division but not necessarily be aware of quantifiable cost drivers. The ability of a comprehensive ABC approach to provide insight into the inadequacy of a company's information system is well known to cost accountants.

Difficulties usually arise when tracking activity costs to products and customers. Very often, drivers are not formally measured even though they drive significant organizational costs. Managers have two options: disregard important drivers or change the system to incorporate them. Incorporating important drivers was the second major requirement.

An ABC model can be viewed from a cost-assignment perspective, which provides information about resources, activities, and cost objects. Because the primary purpose of the ABC model was to generate potential recharge rates for the IT division's services, the cost-assignment perspective was chosen as the third major requirement.

The fourth major requirement was the allocation of both labor and technology costs. As mentioned before, the business world is getting more complex. As a result, the nature of which costs are charged to which users is changing. This increasingly complex environment leads to higher overhead costs. Overheads are replacing direct costs in most high-tech firms. Overhead now includes technology and people who sustain productivity and manage complexity. This has led to a displacement of direct labor and material costs and a proliferation of overhead costs—a trend that must be contained or reversed.

An ABC approach is successful when the data provided is useful to operational personnel. Operational success factors are mainly behavioral because ABC is not a product; it is a process.[4] Therefore, it has to be sustained by improved knowledge about cost drivers and supported primarily by operational staff. Managing activities that consume resources will eventually reduce costs. That is the key for better understanding of the business and improved financial performances. The fifth major requirement was that the organization can utilize ABC to improve IT service delivery through a better understanding of costs.

Several real-life experiences demonstrate the difficulty and importance of satisfying these requirements. One example of ABC implementation is the Lawson Company.[5] Their reengineering process was to empower the organization and employees, help identify redundant costs, understand cost drivers better, and create new ways to budget and forecast. While Lawson is also in the IT business, their approach to ABC was more from a manufacturer rather than a service provider perspective. Company XYZ wanted to determine the costs for internal IT services. Even though both ABC systems were developed to address deficiencies in the financial reporting systems and to support continuous improvement, the service application in Company XYZ required significant additional effort beyond a typical manufacturing application involving tangible products.

Also, according to Lenny Liebmann's survey of 250 IT managers, "Few if any network managers could say what it costs to own and operate a router."[6] Most IT departments spend large amounts of money on providing services without realizing exactly where and how costs are incurred. For example, Liebmann asks challenging questions such as:

- How much does your Web connection really cost?
- What does it cost to send a two-megabyte-file attachment over thin, expensive WAN (wide-area network) links?
- What is the "total cost of ownership," including support and maintenance costs?

Most organizations are unable to answer these questions accurately even though one of the biggest cost variables in an IT organization is bandwidth consumption. From a technical perspective, application monitors can provide data on WAN utilization. The difficulty with this is that the cost per gigabyte drops depending on the percentage of utilization. Furthermore, the cost of ownership is much more than the cost of the raw technology. Service reconfiguration, technical support, upgrades, training, and "other" consume the largest chunk of IT budgets—largely in the form of salaries—while the costs of ports and servers decline over time. Our solution was to track the life cycle of IT assets and utilize usage-based chargeback whenever possible.

Allocating Costs to Other Departments—Recharge Rates Issues

One of the principal uses of an ABC model is the development of recharge rates. Our initial efforts to develop recharge rates began with listing the services that the IT department provides to the company. A literature search for comparable examples was conducted, but such information was not found. Very few service-based businesses report on the details of how they

calculate their recharge rates.

The most revealing report was a survey of 75 top information executives done by *CIO* magazine, where just over half (40) chose a rigorous cost accounting approach to charging back their customers.[7] The remainder chose a "rough justice" approach. As Thomas D. Oleson stated in the *CIO* article, "traditional cost accounting requires strict rules and controls around each expense category. The alternative, rough justice, uses estimating and ratio development, an accounting practice that divides the total number of dollars spent by the total number of service usage." Oleson also believes that "presenting internal customers with fair billing for far less money and with less anguish will win hands down as a more useful and less expensive methodology."[8]

It is difficult for an IT department to develop recharge rates that are accurate and perceived as fair by business unit managers. While it is easy to use the number of personal computers in the company as the recharge basis, there are "other cost components that need to be factored in as well: desktop software licenses, help desk services, electronic mailboxes, and Internet access. Whether they are billed as separate line items or folded into a per-node fee, these resources must also be calculated into the overall average chargeback scheme."[9]

In 1982, Hewlett-Packard reevaluated its production and support processes to improve product costing and inventory valuation. HP used recharge bases such as number and type of parts needed to build and the amount of time required for product testing.[10] Another example is a bank that used ABC methods to calculate recharge rates for telephone inquiries. The bank determined that it cost $0.766 per minute to assist customers with mortgage information. Although the call center received calls that varied in length, the bank could then determine their costs associated with providing mortgage information.[11]

The primary design choices for usage-based billing are the inclusion of charges, the selection of the base, and the portion of the charge that is variable. The first choice is whether to include all IT costs or only some. For example, Bose Corporation allocates all IT costs except training, research, and development.[12] In contrast, Liebermann mentions ITT (Fluid Technology), which states, "No IT expenses should be immune from departmental chargeback. As a service organization, our chargeback allocation covers 100% of our budget, including R&D and administration."[13] ITT uses a per-employee chargeback rate that depends on where the employee is located. In 1997, employees in North America cost $467 while European and Asia/Pacific employees were $562 and $1,300, respectively. "It's better to charge by the employee than per network node. Charging per node creates an incentive not to put a computer on the network…. We want to structure our program to encourage usage."[14]

Technology makes it possible to bill users at a very detailed level, such as cost per sign-on and server usage. Gathering this data to calculate the costs requires extensive network monitoring. ITT is against using network-monitoring tools to determine recharge rates. They believe the expense outweighs the benefit and that it is easier for managers to plan if they are given a flat rate.[15]

Using recharge rates under ABC enhances the process further when paired with an external benchmarking program that offers a comparison to other similar organizations. The added insight from an external benchmark lets managers compare their operations to the best and worst practices of others and to integrate the most appropriate practices into their own program.[16] This comparison should aid the business unit manager in forming an objective opinion regarding the fairness of the charge. Table 1 lists possible recharge rates as identified in our literature survey.

With these suggestions in mind, Company XYZ wanted to develop recharge rates so that they would be meaningful to both the IT department and the rest of the company. They favored the usual view that "A typical business manager is unlikely to spend time worrying over ways he or she can reduce CPU cycles or disc storage costs; they are more likely to be worried about the business."[17] It was critical to avoid creating recharge rates that might inhibit managers from implementing new technologies that could increase productivity.

Possible Cost Drivers in an IT Environment

The hardest part of the ABC implementation in an IT

Table 1: Potential Recharge Rates to Be Used in an IT Environment

SERVICE COST OBJECTS	ALTERNATIVE RECHARGE RATES		
Internet	Amount of network traffic	Number of employees	Size of message
Intranet	Number of messages	Number of employees	Size of message
Messaging	Number of messages		Size of mailbox
Server Platforms	Number of log-ins to server	Number of PCs	
Training	Number of classes	Number of employees	Number of students
PC Services	Number of PCs	Number of licenses	Type of hardware/software
LAN/WAN Services		Number of employees	
Phone	Number of telephone ports		

environment is identifying which processes to use as drivers. The drivers should be representative of activities performed.

Table 2 suggests possible drivers for systems, networks, and applications.

To summarize, there is very little knowledge about the effective application of ABC to the costing of IT activities based on published findings. There are some general findings in the literature survey suggesting that ABC should be moved closer to the user in order to better understand the business, but they do not provide the detailed guidance a cost accountant needs to determine model requirements, recharge bases, and cost drivers. In the following sections, we outline the ABC design choices for the IT services of Company XYZ and report on the results of those choices.

The Information Technology Unit

Company XYZ develops, markets, and provides implementation, training, and support services for its enterprise resource planning (ERP) software. Its software applications give customers the ability to obtain integrated functionality for manufacturing, finance, distribution/logistics, human resources, and customer service management operations within a multisite and multinational organization.

The company previously used various methodologies to allocate IT costs throughout the organization. Costs that were directly identifiable with the user of the service or product were charged directly to that user's division. Examples of this type of cost include special software requests (over and above the standard software package that is provided to every employee), long distance telephone charges, and cellular and paging charges. In addition, certain equipment is dedicated to specific functions/divisions within Company XYZ. These costs were charged directly to the development division through the financial accounting system. Typi-

Table 2: Possible Activity Drivers for Systems, Networks, and Applications

APPLICATIONS	SYSTEMS	NETWORKS
Number of instances for code revision, maintenance, updates	Number of tapes to be installed, mounted, or replaced	Troubleshooting requests
Time spent on each instance	Number of technical support requests	Time spent per incident
	Number of maintenance incidents	Number of network upgrades
		Number of PCs replaced, upgraded, or added
		Number of software additions, upgrades, or replacements

* Source: Michael Seadle, "A Better Mousetrap for Computing Costs," *Enterprise Systems Journal*, October 1995.

cal annual charges in the company are shown in Table 3.

The rest of IT costs remained within the IT division's cost center responsibility. Monthly cost allocations for voice-related services, the accounting and finance system (including WAN), personal computer hardware and software (the standardized package), and training were made to all cost centers (business units). The costs allocated were generally equipment related and principally composed of monthly lease charges. Company XYZ had a policy of not charging labor-related costs.

The bases for these allocations varied according to the data available. Voice-related services were charged based on the number of ports per business unit. Accounting and finance common systems were charged on a per-employee basis. Personal computers were charged at a flat rate: desktops at $200 per month, laptops at $300 per month. The amounts to be allocated were determined during the budgeting process on the basis of budgeted estimates for IT costs and the related allocation criteria.

The IT division is charged with providing state-of-the-art technology to all company employees as a means of facilitating each individual's work-related objectives. The IT division has five major groups: computing, networking, worldwide service delivery, voice, and management information systems.

Each group has a director, and each director has several managers (direct reports) responsible for specific units within the group.

Computing

The main duties are designing and implementing personal and data-center-based computing technology across the company. They have the expertise for providing support for:

1. Laptops and desktops, including hardware- and software-related matters;
2. Demonstration systems and competency-center technology;
3. Application servers including AS/400, NT, and UNIX platforms; and
4. Training.

Networking

This group supports new technology for Company XYZ's wide-area and local-area networks (WAN/LAN). Areas of support are:

1. Network systems, which principally encompass all NT servers and NT-related applications, and corporate-wide electronic messaging using Microsoft Exchange;
2. Data services that allow employees, customers, and/or business partners authorized access to corporate information and the Internet from anywhere in the world; and
3. Internet and intranet services, including Internet mail.

Table 3: Typical Annual Charges in Company XYZ

SERVICE	ORIGINAL RECHARGE RATES
Voice	$ 420
Common Systems	$ 312
Training	$ 600
Network Services	$2,604
PC (depending on type or brand)	$2,400 - $3,600

Worldwide Service Delivery

This group works alongside all of the other IT divisions and is principally responsible for implementing the technical designs developed by the other groups and supporting the hardware and software environments throughout the company. Specifically, the group provides:

1. Support for desktop and laptop computers and standard software,
2. Support for all AS/400 platforms,
3. Network support of all NT and UNIX servers (hardware and operating systems), and
4. Support for all training facilities.

The division also assists the marketing division through support of customer demonstration facilities and activities. Company-wide support is accomplished through a combination of field support, a help desk (designed to address technical questions, problems, or outages), and a network control center (monitoring network connectivity, host systems availability, and performance).

Voice

This group designs and implements new technology for Company XYZ's voice-related applications, including

Figure 1: The Cost-Assignment Model

telephone systems, voice messaging, cellular phones, and pagers.

Management Information Systems

This last group provides to the company the internal business applications, such as the development of customized Internet and intranet applications and the acquisition and integration of third-party solutions.

Developing and Designing the Model

The activity-based costing model used in this project is based on the cost assignment approach, which assigns resources to activities and then to cost objects.

The Cost-Assignment Model

The cost-assignment model comprises three entities and two processes. The intention of the model is to show how the resource/cost entity reflects costs consumed by activities. The cost driver process assigns resources to each activity. The activity entity shows where work is performed. The activity-driver process assigns activity costs to the final cost objects. Figure 1 shows the cost-assignment model.

Resource/Costs Entity

The starting point of the model was to narrow the general ledger costs down to six main categories: labor, Internet/data, equipment, phone, software, and other.

For example, labor costs in the IT unit were about 33% of total IT costs, which are split between the divisions as shown in Table 4. Equipment is another major IT cost (40% of total IT costs), and Table 5 describes equipment costs for each division. The breakdown of costs between labor (33%) and equipment (40%) illustrates the importance of charging back labor as well as equipment.

Activity Entity

The most difficult part of ABC modeling is to define activities at an appropriate level of detail to satisfy the primary objective of providing accurate, usable, and meaningful recharge rates. In order to determine appropriate activities, each director of the five IT divisions and their reporting managers were interviewed extensively. We looked for activities that would be general enough to cover all areas of the IT organization and sought to identify only seven activities as an optimal number. Follow-up meetings were held as open forums where questions were raised and answered, suggestions were given, and concerns were addressed. A short-list of activities that were acceptable and applicable to the

Table 4: Percentage of Labor Costs by IT Division

DIVISION	LABOR COSTS*
Computing	14.6%
Networking	10.6%
Voice	2.4%
Worldwide Service Delivery	48.8%
Management Information Systems	23.6%

*Labor consists of all costs associated with salaries, travel and entertainment, and contract professional services. The company had never allocated the labor cost out to the internal users, so it was important to provide a way in which the total indirect cost could be assigned with or without labor.

entire IT organization evolved from these forums: Requirements Analysis; Planning and Design; Project Management and Performance; Operations Support; Technical Support; Keeping Current; and Supervision, Administration, and Other.

While the activities are somewhat general in nature, and therefore subject to some overlapping, the managers involved in the project accepted the following descriptions:

- **Requirements Analysis—**Developing requirements from user groups/individuals, assessing alternative courses of action and needed resources, and determining the optimal course of action for the company. This category includes the pre-project engagement or life cycle.
- **Planning and Design—**This activity relates to tasks that are recurring in nature, such as capacity planning, performance tuning, lease/equipment replacement, and identifying/researching equipment to utilize.
- **Project Management and Performance—**Project management is the leadership/responsibility of a series of related tasks directed toward a major output, usually nonrecurring in nature. A project usually crosses organizational boundaries and has a timeline and budget associated with it. Performance of a project includes how well team members carry out the project.
- **Operations Support—**Directly supporting a piece of equipment, software, and/or environment. This category encompasses all tasks performed on an ongoing basis (i.e., normal operating activities). Examples include working on the help desk (first-level troubleshooting), maintaining training centers, daily backup procedures, and software development.
- **Technical Support—**Providing assistance to a user in an effort to correct or repair a problem ("putting out fires"). This category includes second- or third-level troubleshooting.
- **Keeping Current—**Informal and formal training, including attendance at seminars, conferences, and trade shows. This category includes scanning the environment, competitors, etc.
- **Supervision, Administration, and Other—**Includes supervisory or administrative tasks such as preparing time sheets, tracking Service Level Agreements, and preparing personnel evaluations that are not directly related to an activity defined above.

Table 6 summarizes the costs associated with activities in the IT division.

Table 5: Percentage of Equipment Costs by IT Division

DIVISION	EQUIPMENT COSTS*
Computing	50.0%
Networking	12.0%
Voice	0.7%
Worldwide Service Delivery	35.0%
Management Information Systems	2.3%

*Equipment is all the equipment (and depreciation) for which the IT division is responsible. Company XYZ continued transferring equipment costs directly from the resource entity to the cost-object entity.

Table 6: Costs Associated with Activities in the IT Unit

ACTIVITY	ACTIVITY COSTS
Requirements Analysis	8.5%
Planning and Design	16.0%
Project Management	13.0%
Operations Support	21.0%
Technical Support	15.0%
Keeping Current	7.9%
Supervision, Administration, and Other	18.6%
Total	100.0%

Cost Objects Entity

Cost objects are the final entities in any ABC model. Ultimately, they are the IT-specific products or services provided by the IT unit and charged back to the rest of the organization. Note that these cost objects are services that users can meaningfully identify and describe. They are not technical components of networks or software programs. They differ markedly from typical IS/IT cost objects that are often expressed as CPUs, bandwidth, nodes, etc. The cost objects defined for Company XYZ were: Internet, intranet, messaging, AT and Managed labs, server platforms, training, PC services, LAN/WAN services, phone, and marketing support. Table 7 summarizes costs consumed by the IT division for these services.

Table 7: Percentage of IT Costs Consumed by the Cost Objects

COST OBJECTS	PERCENTAGE
Internet	1.4
Intranet	0.7
Messaging	0.7
AT and Managed Labs	0.3
Server Platforms	21.0
Training	3.8
PC Services	37.0
LAN/WAN Services	14.0
Phone	9.8
Marketing Support	0.1
Other support service not included in this analysis	11.2
Total	100.0%

Cost Drivers

Cost drivers are the first link in the ABC model, placed between the resource and the activity. The cost driver is the process that assigns the resource costs to the appropriate activity. It was determined that the most direct driver to use would be identification of employees' daily, weekly, or monthly duties. How much of an individual effort was directed toward each of the given activities? According to our literature review, we found that cost drivers are usually estimates of time and are quite reliable. We also found that using time as a cost driver disaggregates the costs into sufficient detail without providing too much insignificant information. For example, the time percentages reported for the seven activities are included in Table 8, which shows how the ABC model is able to capture the difference in the time reported per activity by individual, which can vary significantly.

Activity Drivers

Activity drivers are used to assign costs from an activity to a cost object. In other words, the activity driver is a measure of the frequency and intensity of use of an activity (consumed) by a cost object.[18] This process is probably the most important step in the ABC model. Not only must the activity driver be well defined, but there must also be data available to support the drivers.

Table 8: Time Percentages Reported for Seven Activities

ACTIVITIES	TIME REPORTING PER ACTIVITY
Supervision, Administration, and Other	10%-15%
Technical Support	10%-25%
Operations Support	5%-45%
Requirements Analysis	5%-20%
Keeping Current	10%-20%
Project Management	5%-30%
Planning and Design	30%-50%

While trying to identify reasonable activity drivers, one question had to be answered: What would cause the cost of the activity to increase significantly? In addition, several basic objectives were followed when selecting the most appropriate drivers:

- Pick activity drivers that best match the activity,
- Minimize the number of unique drivers,
- Pick activity drivers that encourage improved performance, and
- Pick activity drivers having a modest cost of measurement.[19]

Initially, drivers such as number of pre-project engagements, number and cost of projects, and number of calls that pertain to each business unit were sought. Due to inadequate information tracking data by the company, it was decided to use time proportions as the main activity driver. Some of the company's help desk "ticket" data were inaccurate or incomplete. Technicians were unwilling to score or rate the complexity of help desk calls. As ABC modeling gains momentum, more resources will be available and more accurate methodologies for data tracking can be implemented. The time proportions used for the activity drivers were extracted from the initial time data gathered during the cost-driver interviews.

Recharge Rates

When both the internal and external clients of the IT unit are held responsible for the effective use of resources, they share the same incentives to manage IT costs along with their own direct staff, equipment, and premises costs. Chargebacks (recharge rates) have

become the primary mechanism to analyze IT costs. They are also used to determine returns (ROI) on IT investments. The primary objectives of chargebacks are:

- To allow management to decide whether IT services will be free or billed to internal clients,
- To account for who uses IT and then allocate the costs to those users,
- To efficiently manage increasing IT costs,
- To influence and motivate improved performance of management through increased efficiency, and
- To combine financial and computer performance evaluation (CPE) information.

Based on these objectives, the analysis of chargeback systems leads to a more refined profitability analysis for an IT department. Assigning costs equally to clients requires rational solutions to the problem of cost allocation and transfer pricing. The less frequently IT costs are changed, the more stable the IT system appears to clients. The quality of a chargeback system based on forecasted data, however, is dependent on the accuracy of the forecast.

In addition, frequency of management review of the IT charges will affect the accuracy of the chargeback system. In an unstable and high-growth environment, like many IT departments, overly ambitious projections of cost or volume critically undermine the credibility of IT recharge rates.

One international study by Michael D. Shields, Chee W. Chow, Yutaka Kato, and Yu Nakagawa found that Japanese firms change standards more frequently than U.S. firms. The study also found that Japanese firms "focus on the performance for some future length of time," whereas U.S. firms "tend to 'emphasize the past' in setting standards."[20] Frequency of changes in chargeback rates is also pertinent to the frequency of budgeting. Japanese firms often adopt six-month budgeting cycles, while 12-month cycles are more typically used in the U.S. Quarterly or six-month budget cycles, with appropriate adjustments of recharge rates, can be more accurate and more relevant, particularly in dynamic industries.

Another major outcome is the impact on business-unit performance. Performance evaluations are based, in part, on the business unit's profit (or segment margin) performance; IT charges are used to calculate divisional profit performance. Hence, business-unit managers are very concerned that the recharge rates are accurate and fair.

Table 9: Recharge Rates for Services and Cost Objects

SERVICES & COST OBJECTS	RECHARGE RATES
Internet	$ 230
Intranet	$ 219
Messaging	$ 136
AT and Managed Labs*	Negotiated
Server Platforms	$450 – $ 650
Training	$ 514
PC Services	$2,289 hardware, $ 774 software
LAN/WAN Services	$ 850
Phone	$ 238
Marketing Support**	100%

*The Recharge Base for AT and Managed Labs is shown as "Negotiated" because its costs will be charged directly to each business unit using the facilities.

**All costs for Marketing Support are assigned to marketing business units.

Using ABC methodologies in this project resulted in new recharge rates. These rates are perceived to be more accurate than the rates produced by the former process because they capture more costs (including labor and technology used to support labor), are based on drivers that reflect actual support-staff effort for each of the supporting activities, and provide a more detailed description of services. For example, compared to the original method of determining recharge rates, Company XYZ found that the ABC rates reflect a 15% improvement for networking services and a 24% improvement for PC services. Further comparisons are not meaningful because of differences in how services are defined.

Continuous Development

Company XYZ is "cash rich." More than one manager revealed that budgets were not necessarily followed simply because "they didn't need to be." While IT managers have a competitive and instinctive desire to limit expenditures in favor of "revenues," they are not

operating as profit centers. Their goal is to charge out their services and come as close as possible to breaking even. It is also widely understood that the current cost allocation process is flawed, so failure to break even is often not even discussed. Aggressive or intrusive cost limiting measures may easily be dismissed as unnecessary in this type of environment. History tells us that complacency is a prescription for failure.

Commitment is imperative in any new management concept. Top-down commitment must be present to preserve the infrastructure and data-gathering processes required for ABC. This issue is linked to compensation and management controls. Tying compensation to implementation or to successful improvements as a result of implementation can increase commitment to the new system. Similarly, if there is commitment from the top, there will also be controls in place to increase the rate of continuous improvement as well as the probability that the company will achieve its goals. These controls may be quality control, organizational or budgetary controls, or controls such as job rotation (to enhance employee training or breadth of perspective).

The ABC model that was developed in Company XYZ is the first step in what will probably become an evolutionary process. The new ABC recharge rates are more accurate and easier to understand—especially because they include labor costs and are based on readily identifiable and understandable activities. Costs that were often "mysterious," questionable, or unknown are now revealed (i.e., relevance found). The ABC model requires ongoing refinements while it is used for cost-assignment or decision-making purposes. These refinements, which will need to be carefully weighed in a cost/benefit context to fit the company needs, include:

- Reviewing the methodology used to aggregate historical costs including the accounts (object codes) that were grouped together and the specific business units that were combined.
- Assessing the cost drivers used and the need for increased accuracy and specificity for the time estimates employed in the ABC model.
- Ensuring that the activities are defined properly, encompass all of the work that is performed, and represent the appropriate level of detail.
- Selecting an appropriate number of activity drivers—for example, seven activity drivers, which traditional cost accountants may view as too aggregated.
- Identifying alternative activity drivers and developing measurements for the activity drivers selected. This is perhaps the most important refinement needed, and it will also be the hardest to accomplish.
- Ensuring that the services are properly identified and defined.
- Assessing the alternative recharge bases available for each service and identifying which bases would provide the most equitable allocation of costs.

In general, there are several conclusions about ABC that need to be considered before engaging in such a project:

1. Fixed-rate systems lead to higher use and more variability.
2. Management and users perceive a variable cost allocation structure to be fairer than a fixed structure.
3. A more accurate model is more defensible.
4. Accurate chargeback systems will enhance management performance.
5. The chargeback system will be a helpful instrument for budgeting and IT strategic planning.

The refinements detailed above require a collaborative managerial effort to critically review and develop an understanding of the assumptions and methodologies inherent in this model. Managers were able to offer specific suggestions for improvement for each related portion of the ABC model. An iterative, recursive process is essential to building an accurate and usable ABC model in an environment where there are few precedents and protocols to follow.

ABC modeling provided a foundation for evaluating value-added and nonvalue-added activities, and it helped managers assess which activities could be reduced or eliminated. The costs of IT services could be more accurately and meaningfully charged to the clients/users. ABC cost data resulted in more accurate cost estimates for IT project requests submitted by customers/clients.

Some consolidation of operating units was achieved through restructuring. While restructuring could have occurred without ABC, it was more obvious using the ABC results regarding which units could best be combined.

In conclusion, ABC proved to be a useful cost management tool. It resulted in immediate reengineering and downsizing at the end of the project. Reengineering focused on eliminating unnecessary activities and transferring people at the same time. It did not necessarily realign resources with customers' needs. The recharge rates based on ABC were not found to be useful in accomplishing this last objective. ■

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