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Don't Show me the Price Tag: A Case Study of IT Chargeback in a Government Agency

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BACKGROUND

Information technology (IT) managers of government agencies struggle to provide effective service for their users while at the same time minimizing costs and coping with a salary structure for their employees that is frequently less generous than their industry counterparts. While a standard industry criticism is that government agencies don't have to handle the strenuous pace of change inspired by for-profit competition, management priorities in governmental operations can change with each election cycle, resulting in fluctuations in project emphases that are rare in industry. A government IT manager must be able to deliver much with few resources, inadequate and frequently poorly-prepared staff, and in an environment of dynamic management priorities. While this situation is much like their what their counterparts deal with in industry, government IT managers are also constrained by arcane budgeting and accounting control mechanisms which are often a result of both federal and state legislation.

What is a Chargeback System?

An important issue for many government agencies is how best to manage and control IT budgeting and actual expenditures. Some government agencies choose to address this through a form of internal billing system, also referred to as a "chargeback system." A chargeback system is a way to allocate the costs for delivering IT services directly to the group using those services.

Two general forms of cost chargebacks have been described in the literature: (1) A soft money approach that summarizes costs in a memo for informational purposes; and (2) a hard money method that allocates costs to the user area and transfers funds to the IT group from the user area (Lin, 1983). The hard money approach can be used to allocate all costs (fixed and variable), just variable costs, or only those costs that the organization seeks to control. An important issue in chargeback systems is determining how much of the total cost of IT to allocate to any one group of users and what kind of pricing mechanism to use for the charges. While some costs, such as programming time, can be directly attributed to a group of users or a specific application, other costs, such as network infrastructure and server support, are more problematic to allocate. Much research has been devoted to determining optimal rates for the chargeback of these costs with suggestions to use such metrics as amount of processor time, number of applications, number of workstations, amount of generated output (bills, checks, reports, etc.), amount of server access, and bandwidth (Bergeron, 1986; Allen, 1987; Sen and Yardley, 1989; Drury, 1997).

What are the Benefits and Drawbacks of Chargeback Systems?

Chargeback systems have been lauded as an excellent way to control costs by making them more visible (Allen, 1987). At the same time, they have been criticized as an unfair, time-consuming waste of resources (Stevens, 1986). At the most elementary level, chargeback provides a way to categorize IT costs and allocate those costs back to the responsible user group. At a more complex level, chargeback is a way to potentially modify the behavior of the consumers and producers of IT. By making costs visible, the producers of IT could be more accountable to the user community motivating greater communication between IT and users. On the other hand, chargeback could also make the relationship more contentious if users believe that the charges aren't "fair." Chargeback, by making costs immediately salient, might prematurely discourage IT usage, possibly leaving unexplored creative methods of facilitating operations through the use of technology. On the other hand, users might be more willing to carefully scrutinize proposals for automation, thus making better use of all resources. Actual use of chargeback systems has produced mixed results, and users express both negative and positive impressions of its ability to realize its purported benefits (Drury, 2000; Ross, et al., 1999; Stevens, 1986)

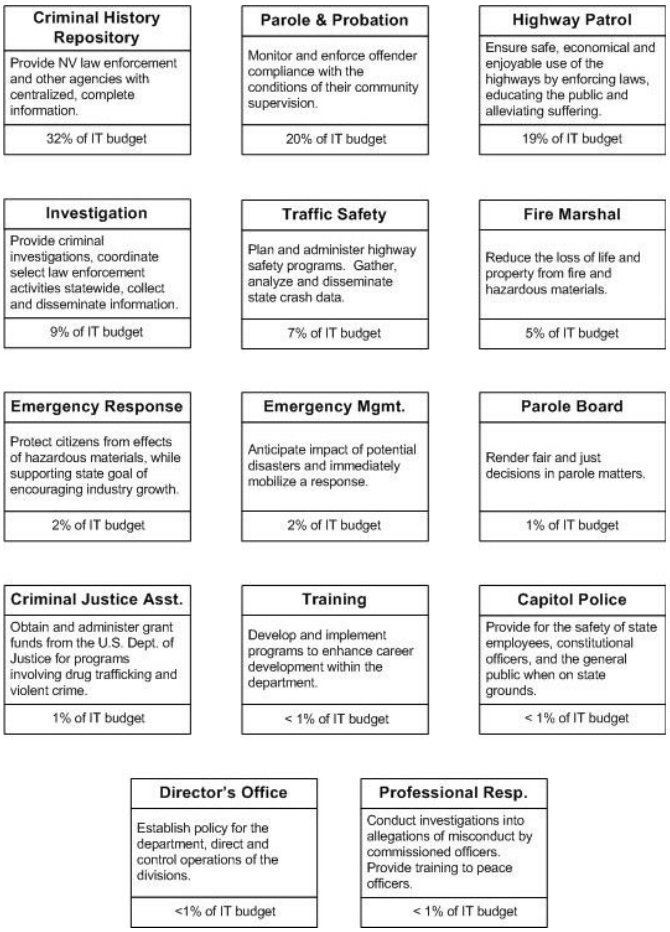
SETTING THE STAGE

The Nevada Department of Public Safety (NDPS) is a government agency charged with coordinating all state responsibilities to protect the citizens of the state of Nevada in the United States. Many public safety tasks, such as police, fire and emergency services, are left to city and county governmental agencies, but other safety-related tasks are the responsibility of the state. Figure 1 depicts the divisions within the Department of Public Safety and gives a brief overview of their responsibilities.

The NDPS Information Technology Division (PSTD) began using a hard money chargeback system for full cost allocation in 1997. Prior to 1997, there was no separate division to handle IT for the NDPS. IT personnel were assigned to functional divisions within the department and each division was responsible for its own programming efforts. Technology infrastructure, such as networking and mainframe operations, were handled by an IT group in the Administrative Division and programmers in the functional divisions reported through a matrix structure to both the IT group in the Administrative Division and to the chief of their respective divisions. Creation of the PSTD was approved by the Nevada legislature in 1997 to better facilitate funding source integrity for technology costs and to consolidate information technology costs across the department.

The NDPS is funded from a variety of different sources and legislatively those sources must be budgeted and used separately. For example, the Highway Division is funded primarily through highway funds.

Figure 1: Description of the Divisions within the Department of Public Safety.



Those funds must be used only for highway projects, as laid out by law through the Nevada Revised Statutes and any attempt to use those funds to support other divisions in the NDPS would be illegal. The four major funding sources for the department are highway funds, general state funds, federal grants, and court assessment fees. The only funding source without legal restrictions is the general state fund, and that fund is watched closely by the Nevada legislature. Nevada is a balanced-budget state; deficit spending is prohibited by the Nevada constitution. The legislature participates actively in all decisions regarding general state funds through its line-item budgeting process.

The PSTD division chief worked for the NDPS prior to 1997 as the manager of data processing when that function was part of the Administrative Division. He supported the development of a separate technology division and helped craft the structure of the new division. It was also his responsibility to determine a method of allocating IT costs to the other divisions in order to preserve the integrity of funding sources. To accomplish this task, he worked with budget analysts from the legislative and executive branches of the state government as well as an outside consulting firm to determine a method that was technically feasible, simple, and accurate. They elected to divide costs into three categories:

- **Development and Programming**: User divisions are charged an hourly rate for programmer/analyst time to develop and maintain systems. These costs represent about 20% of the overall IT budget and are the most variable of the costs.
- **Networking:** User divisions are charged per PC and workstation for software and services necessary to support the LANs. These costs are about 30% of the IT budget.
- **System Support:** User divisions are charged by the number of input/output accesses made. These charges cover the cost of mainframe hardware/software, telecommunication costs, operation analysts and help desk support. These costs are about 50% of the IT budget and represent primarily fixed costs.

After using this chargeback system for five years, the PSTD division chief is beginning to wonder if there might not be a better way to account for IT costs. While preparing for a new legislative session and spending a substantial amount of time gathering the data required to justify his budget, he started to wonder about the "true cost" of a chargeback system for the PSTD and whether there might be a better way to manage the costs of technology within the NDPS.

Case Description

The mission of the PSTD is to (1) provide technical support and computer resources to criminal justice and public safety agencies throughout the state of Nevada; and (2) to provide technical support and resources to the divisions within the department to include local area networks, wide area networks, programming, help desk, field support and technical planning. There are 33 employees in the PSTD serving 1,252 employees in the Department of Public Safety. The employees in PSTD are broken down as follows: 10 employees in application development, 10 in operations and help/desk, 11 responsible for network and systems management, and 2 in administration.

The chief of PSTD is a member of the departmental executive committee which meets monthly to appraise performance of the department as a whole. There is no separate committee to evaluate technology decisions or establish overall strategy for the use of technology within the department. Most technology strategy is left to the individual divisions; there is no strategic technology plan for the department as a whole.

Each division is responsible for purchasing its own PC's and workstations directly from its individual budget, but all other technology-related costs are incurred by the PSTD and then charged back to the appropriate division.

Budgeting and Allocation Process

Every two years, all divisions in the Department of Public Safety submit budgets to the Nevada State Legislature. Every year, all divisions review their budgets and update them as necessary. The PSTD takes advantage of this yearly opportunity to review the objectives of each division and determine whether the use of information technology is strategically aligned with the objectives of the division. PSTD personnel spend about 15-30 hours with each division on this process encompassing these steps:

- **Interview and evaluation:** PSTD personnel interview a pre-determined IT coordinator from each division to identify the mission and objectives for the division and review all outstanding and potential IT projects. PSTD personnel ask specific pre-defined questions about the division's use and satisfaction with IT services over the past year.
- **Create project requests:** PSTD personnel create a project request form for each project identified in the interview. High level specifications are defined in order to determine the amount of time each project will take.
- **Prioritize projects:** PSTD personnel work with the divisional IT coordinator and chief to prioritize the identified projects. Maintenance projects and applications that are a result of legislative mandate are always the first priority while other priorities are established by the divisional IT coordinator and chief. As more information becomes available about the projected budget, the coordinator and PSTD personnel cut projects and focus resources to work within the budgetary constraints.
- **Summarize amounts:** PSTD analyzes the projects and determines what level of system support and networking will be necessary to

supply the required systems. System support and networking is then allocated to each division using past year percentages. Estimated programming hours for the prioritized projects are finalized and each division chief is sent the breakdown of costs in the three chargeback categories discussed earlier. These amounts are summarized into a total which is included as a line item in each division's budget.

Each division's budget (including PSTD's budget) is submitted to the legislative budget committee which evaluates the requested amounts and frequently cuts a percentage point or two. As the cuts are made, the PSTD budget is modified to reflect the changes. PSTD's budget is closed after the rest of the divisions to ensure that the costs are correctly represented and carried forward appropriately.

After the budget has been approved by the legislature, division chiefs use the finalized document to guide their decisions and financial expenditures throughout the year. In the PSTD, all actual costs are tracked by division and funding source in order to chargeback the actual amount. The PSTD produces quarterly reports for the division chiefs so that actual costs can be compared to budgeted amounts. Budgets and actual expenditures are reviewed quarterly by both legislative and governor's office budget analysts to guarantee that legislative decisions are upheld, funding source integrity is maintained, and the governor's strategic objectives are supported. Any deviation from the original budget that is over $1,000 must be approved by both legislative and the governor's budgeting committees.

Stakeholder Reactions

The PSTD's division chief believes that charging back costs to the divisions is an expensive and time-consuming process. PSTD personnel spend approximately 375 hours a year gathering the information they require to help forecast the needs of the other divisions. While PSTD's division chief believes this is an excellent planning mechanism, he feels that much time is spent looking at projects that will not come to fruition because of budgeting constraints. For some divisions, a greater percentage of PTSD time is spent planning than actually producing IT work for the division.

He also finds it difficult to accurately define a system support allocation to the departments. This is the largest portion of the budget (50%), is a relatively fixed cost, and is required to support all users. Allocating system support becomes especially problematic when trying to determine which funding source to charge. While it is possible to measure, for example, the number of input/output operations performed by members of the Highway Division, should all those operations be charged to the highway fund? Or were some of the operations unrelated to highway and should thus come from the state general fund? His last major concern is the difficulty developing integrated, department-wide applications. One of the primary needs of the department is to have access to information across division lines, yet funds must be committed from different divisions with differing funding sources.

Division chiefs and IT coordinators from the user divisions were consistent in their reactions to the current IT budgeting and chargeback process:

- **The process is cheap.** Budgeting and chargeback allocations are very inexpensive to the user departments. Most of the onus for developing the budget and performing actual chargeback allocations is on the PSTD.
- **Time spent budgeting yearly is wasted.** The user divisions believe that most of the projects that the IT coordinators identify as important will be cut back because of limited IT resources, so it appears to be a waste of time to them to perform extensive yearly planning. "I think they (PSTD) could use their time more wisely, with fewer meetings and fewer people in meetings," was a frequent comment from the user divisions.
- **There is no user control.** The user divisions feel they have control over only a small amount of the actual expenditures (development and programming time) so they don't oversee or manage the remaining IT costs closely. "PSTD always gets paid first, and they get paid what they tell us to pay, so I don't see it as any kind of expense I can control," was a comment from one division chief.
- **IT prices and services are abstract.** None of the IT coordinators or division chiefs felt capable of evaluating the effectivity of IT services. The user stakeholders consistently said that they were uncomfortable trying to oversee a process and product of which they had so little knowledge. Price estimates are received from PSTD for projects, but it is impossible for the user stakeholders to evaluate whether those prices are equitable because there is no readily available free-market price list for similar services. "They tell me it will take 5 years and cost $1 million to build a system. How do I know if that is a fair price? It might be, but I have no way of checking it out without having it cost me even more money just to check it out," was an observation from a division chief.

The user division stakeholders uniformly believe it would be better to allocate a certain dollar amount to PSTD and make the division accountable for its performance, rather than its budgeted dollars. A common reaction was that everyone wanted more technology capabilities and wanted more information available for decision-making, but didn't want to have to actually see the price tag for the technology and the information. They certainly didn't want those dollars transferred from their budgets to the budget of PSTD. Each believed that it seemed extraordinarily expensive to receive those services from PSTD, but they weren't aware of market prices for similar services and didn't have ideas about how to comparison shop for information technology.

Evaluation of Chargeback as an IT Management Tool

Using a chargeback cost allocation scheme has benefits and drawbacks for the Department of Public Safety specifically related to the objectives for initially installing the system. Table 1 describes the primary objectives for the system and then summarizes the current benefits and drawbacks.

Current Challenges Facing the Organization

At this time both PSTD and its user divisions agree that IT services need to be improved substantially. User divisions believe that the pri-

Table 1: Benefits and Drawbacks of Chargeback System

Objective	Benefit of Chargeback System	Drawback of Chargeback System
Protect funding source integrity	• System relates costs back to appropriate accounts.	• Requires estimates of resources that may not be completely accurate.
Provide greater visibility of IT costs	• System makes overall costs more centralized and visible. • Division chiefs are aware of the funding required to support IT.	• System does not make individual costs, such as help desk and troubleshooting, more visible.
Enhance level of communication between PSTD and other divisions	• Forces PSTD to communicate with other divisions about resources required to complete projects. • A well-documented planning process is in place for all IT projects.	• The level of communication between PSTD and other divisions does not seem to facilitate greater understanding from users about IT projects and costs of services. • Providing more information about the financial outlay for IT was not helping users understand the relative efficacy of IT operations.
Create better accountability for IT projects	• Each project is accounted for completely down to the last penny.	• Accounting for the cost of a project blurs the results of the project making the actual success/failure of a project less visible. • Other metrics, such as project duration and value to the organization are less visible with greater dependence on chargeback.
Enhance the ability to plan IT projects	• System forces PSTD to plan projects for an annual cycle.	• No ongoing planning beyond the legislative bi-annual process. • Projects are planned only within division; there is no cross-division or long-term planning encouraged by the system.

mary cause of service problems is a personnel shortage in PSTD. Further, both users and PSTD believe the staffing problems to be largely a result of the manner in which the chargeback accounting scheme for information technology services is implemented. However it is unlikely the chargeback scheme can be eliminated. As discussed earlier, Nevada is a conservative state, and the laws requiring strict fund accounting are unlikely to be changed in the near term. Thus, some form of chargeback will continue to be *required by law* to provide that accounting. A substantial challenge to the PSTD in the short term is improving service while continuing to use some form of chargeback system. From an outside perspective, the problems PSTD faces are due at least as much to the high turnover of department management, which results in constantly vacillating priorities, as to the chargeback scheme. Even with the existing chargeback implementation, the creation of a divisional IT steering committee overseeing IT plans for the Department and its divisions that endures beyond individual managers could provide substantially more project and personnel stability than PSTD now has. The primary challenges PSTD faces in the near term are to successfully lobby for an empowered IT steering committee and for longer term IT planning throughout the Public Safety Department while streamlining their response to the chargeback process, especially in the area of budget planning for their client divisions.

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