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CITY OF  
**PORTLAND, OREGON**

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Audit Services Division

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April 29, 1997

TO: Mayor Vera Katz  
Commissioner Jim Francesconi  
Commissioner Gretchen Miller Kafoury  
Commissioner Charlie Hales  
Commissioner Eric Sten  
Bureau Managers

Attached is a report entitled *Review of City Internal Services: Bureau of Information Services*. This is the final report in a series we prepared in response to Measure 47 information demands. We worked closely with staff from the Bureau of Information Services to review trends in rates and usage of services, and various ideas for reducing service demand and creating efficiencies. We recommend that bureau managers and the City Council give serious consideration to recommendations.

If you have comments or questions about the report, or need copies of past audits or studies, please call me or Audit Director Richard Tracy.

Barbara Clark, CPA  
City Auditor

Audit Team: Richard Tracy, Peter Morris



# Review of City Internal Services: **Bureau of Information Services**

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April 1997

A report by the Audit Services Division  
Report #234-B



Office of the City Auditor  
Portland, Oregon



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# Table of Contents

<b>Introduction</b>	<b>1</b>
Report objectives	1
Definition of internal services	2
Budget and staffing	2
Scope and methodology	3
<b>Review results</b>	<b>5</b>
Rate methodology	5
Rate trends	7
Usage trends	8
Comparison to market prices	9
Customer satisfaction	11
Ideas for reducing costs	13
Observations	14
<b>Recommendations</b>	<b>15</b>



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# Introduction

This report was prepared by the Audit Services Division of the Office of the Portland City Auditor. It was conducted in accordance with the Auditor's revised 1996-97 schedule published December 6, 1996. It is one in a series of special reports we are preparing to address Measure 47 information demands and was not prepared in accordance with generally accepted government auditing standards. However, the work was conducted by independent, qualified professional staff and due care was taken to produce reliable and accurate information

## **Report objectives**

The objective of this report is to provide objective information to City Council and the public to help make budget and other policy decisions. The report reviews the operations of the Bureau of Information Services. The report provides information on rates and usage trends, market comparisons and customer satisfaction, and ideas to reduce service costs

**Definition of internal services**

The Bureau of Information Services is defined as an internal service for budgeting and accounting purposes. Internal services provide goods or services to other departments within the same government, or to other governments, on a cost reimbursable basis. They operate like “businesses” within the government and must charge internal customers sufficient fees to recover the full cost of the service they provide. Internal services are typically established in order to standardize and consolidate the use of services in order to better account for and control the overall costs to the government. Usually internal services are accounted for in separate funds and employ business like accounting methods. Internal service funds also help organizations accumulate resources for replacement of fixed assets such as vehicles, copiers, and radios. Internal services often include activities such as motor pools, printing, and data processing. In addition to revenues received in exchange for services provided, a portion of the Bureau of Information Service’s costs are recovered through General Fund overhead.

**Budget and staffing summary**

The staffing and revenues for BIS are shown below.

<b>BIS staffing and revenues (adjusted for inflation)</b>				
	Staffing	Revenues		
		Interagency	Overhead	TOTAL
'91-92	30	\$4,475,418	\$533,724	\$5,009,142
'92-93	33	\$4,584,343	\$516,774	\$5,101,117
'93-94	37	\$4,843,217	\$433,540	\$5,276,757
'94-95	37	\$5,065,920	\$621,937	\$5,687,857
'95-96	38	\$4,475,789	\$513,321	\$4,989,110
<b>% change</b>	<b>+27%</b>	<b>0%</b>	<b>-4%</b>	<b>-0.4%</b>

SOURCE: City of Portland Adopted Budget



**Scope and methodology**

We limited this review of internal services to the Bureau of Information Services. We reviewed rates and expenditures for a 5 year period, from FY 1991-92 through FY 1995-96. Our review consisted of determining answers to six basic questions:

- is the rate methodology sound and is it clearly documented and supported?
- how have rates for common services changed over the past five years?
- how has usage of these common services changed over the past five years?
- how do internal rates compare to the outside market?
- are city customers satisfied with service performance?
- are there good ideas to reduce costs of these services?

To answer these questions we met with managers and staff of the Bureau of Information Services. With the assistance of managers and staff we identified the primary services of BIS. We obtained and reviewed budget and rate documents, usage records, and available market tests and customer satisfaction information. We asked Information Services managers and staff for their ideas on reducing costs, controlling use and increasing efficiency.

We also met with five major users of these services - the Bureaus of Police, Water, Licenses, Buildings and General Services. We asked for their input on service satisfaction and ideas for reducing their internal service costs.



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# Review Results

The Bureau of Information Services provides mainframe computer services, central financial accounting systems (IBIS), programming services, customer assistance and network services to all City organizations. Most services are provided at a central computing center located at 1120 S.W. Fifth Avenue. Network services and customer services are provided at most City locations where network and computer systems are installed.

**Rate methodology** The rate methodology for BIS appears to be complete and reasonable and complies with the Interagency Agreement Policy. Rates include appropriate overhead charges for the General Fund and the Bureau's central administration, and includes allowances for current maintenance and future replacement of equipment.

The current methodology was first published in FY 1992-93 and was implemented over the following two years. A revision was published in FY 1994-95 which contains minor clarifications of the previous methodology. That rate methodology is still in use to determine billing rates listed in budget planning tools.

While a portion of costs are recovered through General Fund overhead, the rate structure is designed to recover the majority of costs (see page 2). These costs, including administration, are attributed to cost pools. Rates are developed for each pool based on service measures. The major cost pools are Programming Services, Customer Services and Technical Services. An additional pool, Bureau Information Systems, contains costs directly billed to benefiting bureaus whose systems are managed by BIS.

Programming Services costs include both fixed and variable costs. The fixed costs are the costs of computer operations, shared computing resources, associated personnel and overhead. The variable Programming Services costs are systems analysis and programming. Fixed costs are billed at a rate of 1/13th of the final amount in the interagency agreement, while variable costs are billed at hourly rates.

Customer Services are billed at an annual fixed fee, similar to the fixed portion of Programming Services, based on negotiated charges for customer identified needs. However, because much of Customer Services is planning and basic support, the majority of this service is provided without direct charge and is funded with general fund discretionary resources.

Technical Services rates are based on the services provided on each of the shared computers in the City Data Center and the peripheral support equipment they use. Rates for these systems is based on resource usage statistics measured on each computer. This pool includes IBIS costs and any direct service cost associated with hardware or software contracted services.

**Five year rate trends**

Most BIS rates have declined over the past five years. The current rate methodology has only been fully in place for the past two budget years, so not all components of the rates have five year histories.

Rates have declined due to renegotiated equipment leases and replacement of equipment. Changes in use of fixed cost services result in changes to unit cost since the shared cost of equipment and the cost of labor are attributed proportionately. Hourly rates are based primarily on salaries and are set based on an assumption of consistent productivity.

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**Selected BIS rates (adjusted for inflation)**


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	FIXED RATES *				HOURLY RATES	
	IBM mainframe			VAX	Prog. Service	Cust. Service
	Batch (CPU sec)	CICS (CPU sec)	Disk storage (mb/day)	Batch (CPU sec)		
'91-92	25.384	25.384	6.374	-	-	-
'92-93	18.144	25.194	3.024	9.444	-	-
'93-94	16.324	23.314	3.494	8.374	-	-
'94-95	15.354	21.944	3.574	7.244	\$51.45	\$49.85
'95-96	12.874	18.364	3.434	4.744	\$51.38	\$46.74
<b>% change</b>	<b>-49%</b>	<b>-28%</b>	<b>-46%</b>	<b>-50%</b>	<b>0%</b>	<b>-6%</b>
<b>Current</b>	12.104	17.304	3.434	3.704	\$51.38	\$46.74

\* sample of common subcomponents

SOURCE: Bureau of Information Services

**Five year usage trends**

Fixed rate service use has generally declined on the IBM mainframe and increased on the VAX. For example, batch CPU usage is down 13% on the IBM, and up 19% on the VAX (see table below).

This understates the change in City bureaus' usage, though, because the non-billed, systems maintenance work done internally by BIS is such a large portion of total computer use. If internal BIS usage were excluded, the batch CPU usage would be down 20% on the IBM and up 40% on the VAX.

**Usage of common fixed rate services \***

	IBM mainframe			VAX	
	Batch (CPU sec)	IBIS CICS (CPU sec)	Disk storage (mb/day)	Batch (CPU sec)	On-line (CPU sec)
'92-93	11,925,791	613,831	15,698,231	3,872,460	5,063,860
-	-	-	-	-	-
'95-96	10,432,704	346,605	<i>not avail.</i>	4,613,419	4,904,541
<b>change</b>	<b>-13%</b>	<b>-44%</b>	<b>-</b>	<b>+19%</b>	<b>-3%</b>

\* sample of common subcomponents; includes non-billed internal use by BIS

SOURCE: Bureau of Information Services

Use of hourly services increased over the last two years in response to customer demand. Additional personnel were added to meet requests.

**Usage of hourly rate services**

	Programming	Customer Service
'91-92	-	-
'92-93	-	-
'93-94	-	-
'94-95	13,065 hrs.	1,897 hrs.
'95-96	18,278 hrs.	4,334 hrs.
<b>change</b>	<b>+40%</b>	<b>+128%</b>

SOURCE: Bureau of Information Services

**Comparison to market prices**

Several market comparisons conducted by BIS appear to indicate that common rates are competitive. BIS mainframe (IBM) rates for CPU time are 5% to 10% lower than Multnomah County. Comparisons to Multnomah County IBM rates attempt to normalize differences in processing speed, but do not compensate for differences in the type of work.

**Selected IBM mainframe rates comparison (per second)**

	BIS	Mult. Co.
CPU/CICS	\$1.0813 *	\$1.1391
CPU/batch	\$0.7563 *	\$0.8147
Disk space**	\$0.0343	\$0.0382

\* adjusted by BIS to make comparable to Mult. Co. mainframe speed  
 \*\* megabyte per day

SOURCE: Bureau of Information Services

Also, BIS internet services are 70% lower than one commercial internet service surveyed by BIS.

**Internet access rates comparison (monthly)**

	BIS	Commercial service
Internet access	\$7.50	\$25.00

SOURCE: Bureau of Information Services

In addition, application programming costs 59% less than the rate quoted by one contractor, although the type and complexity of programming involved were not considered.

**Application programming rate comparison (hourly)**

	<b>BIS</b>	<b>Commercial service</b>
Programming	\$51.38	\$125.00

SOURCE: Bureau of Information Services

Finally, BIS provides hardware maintenance services at rates which are 7 to 53% lower than four contractors. The contractor's quoted rates ranged from \$50 to \$100 per hour, but do not include travel time which can significantly increase the cost of a service call. The City rate for file server maintenance also compares favorably to the State of Oregon's contracted rate.

**Service rate comparison (hourly)**

	<b>City</b>		<b>State</b>	<b>Commercial</b>	
	BIS	CTR contract	Cascade contract	Quick	Computer Lines
PC repair (same day, on-site)	\$46.74	\$95.00	\$50.00	\$90.00*	\$100.00**
File server repair	\$46.74		\$75.00		

\* no on-site service available  
 \*\* does not include travel charges

SOURCE: Bureau of Information Services



**Customer satisfaction**

The Office of Finance and Administration conducted customer satisfaction surveys in 1993 and 1995 as part of their Total Quality Management effort. The survey included satisfaction with BIS services and the results are the basis for the Bureau's Quality Improvement Plan. The studies show a generally high level of satisfaction with BIS, but suggest areas where improvement is possible. Our interviews with selected bureaus also reflect satisfaction with recent improvements in services.

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**Customer satisfaction surveys**  
 (% favorable responses)
 

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	<b>1993</b>	<b>1995</b>
Customer Service (overall)	61%	93%
Mainframe & mini (overall)	73%	70%
PC/LAN support (overall)	76%	65%
Help Desk (overall)	59%	83%
Application development	63%	76%
Data Center operations	61%	93%

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SOURCE: Office of Finance and Administration

BIS's interagency billing system generated the most dissatisfaction from user bureaus. Three of the five largest user bureaus we interviewed told us BIS does not provide adequate information to allow bureaus to make decisions about whether to use BIS services or to obtain them from other sources. These bureaus also indicated a preference for billing based on actual system use, rather than allo-

cated estimates of use (as is used for fixed cost items). Although BIS adjusts charges to bureaus if actual costs differ significantly from estimated charges, adjustments are only made semiannually, reducing the ability of bureaus to realize the effect of service changes.

Four of the five bureaus lacked confidence in BIS technical services. This concern arises in part due to BIS personnel turnover which affects project management and time lines. Turnover may disrupt development projects as new employees learn about bureau business systems and objectives.

Four bureaus indicated a need for better customer interaction. Bureaus would like to rely more on BIS for system development projects. This would require BIS to understand bureau business processes and timing requirements more completely. Bureaus report that problems with project timing and definition can contribute to higher costs to customer bureaus which are avoided if the bureaus hire temporary or contract employees. Two bureaus noted that a lack of strategic leadership in BIS contributes to many of these problems.

**Ideas for reducing costs**

BIS managers and bureau users offered the following ideas and input for reducing costs and increasing efficiencies.

**Control IS staff growth in other bureaus**

The number of IS positions outside BIS has grown from 49 in 1994 to 99 on January 1, 1997. Use of a shared pool of IS staff could provide more depth and variety of expertise, better backup for absences and more flexibility to handle workload changes or emergency problem solving. Greater expertise could be developed in a shared pool. Overhead associated with supervision and training could also be consolidated.

However, bureaus believe that needed skills are not available from BIS and that specialty programming and support skills are less expensive if obtained from outside sources under contract or part-time employment.

The ITSP is addressing the structure and role of BIS. Clarifying BIS's role in the City should result in better coordination of information system resources and reduce the overall costs of information management.

**Deploy new technology efficiently**

BIS believes it is neither desirable nor productive to discourage use of computers. Yet, it may be possible to develop and deploy new technology more efficiently and effectively. A process re-engineering approach to automation deployment can help focus on appropriate applications of technology. This approach looks at how work is accomplished, then determines the most appropriate and cost effective technology to do that work.

**Consolidate data centers**

BIS is actively pursuing potential costs savings from consolidating City and County data center operations or sharing resources. Consolidation of other City data centers is also under consideration through the ITSP process.

**Observations**

The City has pursued a number of efforts over the years to reduce IS costs and improve services. From 1988 to 1994, the Information Services Steering Committee composed of representatives from bureaus discussed and developed consensus on City-wide IS issues. More recently the Office of Financial Administration proposed a number of actions during budget workshops resulting in service changes and improvements. Currently, the Information Technology Strategic Planning (ITSP) process, initiated in 1995, is developing a strategic plan to improve technology management and use throughout the City. BIS is an active participant in all the ITSP committees and work groups.

BIS's role in technology improvement is currently unclear. Although the bureau continues to provide critical IS services to City organizations, it does not have clear authority and responsibility to lead and manage IS improvements. The ITSP project should help clarify BIS's role in improving information technology.

# Recommendations

The Bureau of Information Services should take the following actions:

1. Continue to participate in the ITSP process to define City-wide IS roles, responsibilities and financial systems, and to help resolve the strategic direction of City IS services.
2. Align billing procedures and usage measures more closely. BIS should revisit their rate methodology with input from user bureaus to ensure that the procedures satisfy both BIS's and the bureaus' needs.
3. Systematically test the competitiveness of their services and involve users in test design. It may be appropriate to adopt alternative delivery options if good quality and lower prices can be achieved.
4. Perform more frequent complete assessment of user needs in order to provide required services.





