Data Center Services
Financial Administration

Data Center Services Invoicing Process

Internal Audit Report 11-102

April 2012

Texas Department of Information Resources
Austin, Texas

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Executive Summary

This report discusses the details of the audit of the Finance Administration's (DFA) invoice process in the Data Center Services Division. This audit was part of the FY2011 internal audit plan approved by the DIR board. The purpose of the audit was to determine if DFA is appropriately and effectively processing and accounting for invoice activity related to the data center.

The scope of the audit included a review of the Data Center Services invoice processes and policies and procedures during fiscal year 2011. The audit also included an overview of the physical asset inventory process that is administered by the DCS Business Office section. The overview was done to gain an understanding of the asset inventory process, which is an important part of the invoice calculations process.

The objective of the audit was to determine if policies and procedures are current and guide employees in the performance of their invoice responsibilities. Additionally, we took steps to determine whether the invoice validation process was effective in achieving the intended purpose of accurate invoicing to customer agencies, whether customer agencies remit the correct payment amount to the Comptroller's Office for their use of the Data Center, and the reasonableness of the invoice dispute resolution process.

We conducted this audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The review revealed that DFA needs to include detailed steps in their procedures to guide employees in accomplishing their duties and to regularly update these procedures when a change is made to the invoice process. Additionally, IA found that this process ensures that customer agencies remit their payment amounts to the Comptroller's Office, and these payments are reconciled to the expected payment amounts by accounting. While IA determined that DFA is adequately administering the invoice process, we did make the following recommendations to strengthen internal controls:

- DFA should annually perform a review to determine whether invoice validation checklist steps continue to be relevant, require modification, or should be removed. Additionally, ensure that there is evidence on the checklist that invoice validation steps include supervisory review.

- DFA's Resource Unit Validation process, which validates the charges on the enterprise invoice, should be consistently, appropriately, and timely validated by DFA employees, and include evidence of supervisory review, according to the validation schedule.

- DFA should design the invoice validation checklist steps to achieve the goal of verifying that the Base Charge input data is the same as the source data for volumes and base charges. DFA should also establish procedures where the checklist steps are well documented on the validation checklist.

- DFA should consider periodic surveys of agencies to gauge customer satisfaction with dispute and invoicing processes, and areas for improvement.

- IA recommends that all invoices manually changed by DFA be reviewed and approved by a supervisor. Also, we recommend that this approval be documented and stored on a shared drive.

Introduction

The audit of the Data Center Services Invoicing Process was part of the FY2011 Internal Audit Plan approved by the DIR Board. We appreciate the cooperation of DFA while IA conducted this audit.

The State Auditor also performed an audit of DCS in FY2008, during which they found that the process for validating the vendor invoices should be strengthened and that remedies for resolution of invoice disputes could be improved. In addition, the Data Center Services division was included in the Sunset Review process in FY2011.

Objective, Scope, and Methodology of Work

The overall objective of the audit was to determine if DFA is appropriately processing and validating service provider invoices sent to Data Center customer agencies. To achieve the overall objective of the audit, Internal Audit (IA) performed procedures to determine:

- whether DFA has policies and procedures that are current and guide employees in their invoice processing duties.
- whether the invoice validation process is effective in achieving the intended purpose of accurately invoicing Data Center customers.
- whether processes are in place to ensure that Data Center customer agencies remit the correct payment amount to the Comptroller.
- whether the invoice dispute resolution process is reasonable.

The scope of the audit covered a review of the Data Center Services invoice processes and policies and procedures during fiscal year 2011. The audit also included an overview of the physical asset inventory process that is administered by the DCS Business Office section to familiarize IA with the asset inventory process. The physical asset inventory reconciliations are not maintained by DFA; however, physical asset counts result in many invoice disputes.

The audit methodology consisted of reviewing the DFA policies and procedures, interviewing DFA staff involved in invoicing and in the physical inventory of assets, collecting and reviewing documents, testing a sample of validation steps, analyzing and documenting processes and spreadsheets, and examining associated supporting documentation. Also, IA reviewed and analyzed samples of data stored within the information technology systems used by the DFA.

During the audit, IA reviewed the vendor web portal for DFA information, the DFA validation checklist, the DIR enterprise invoices and supporting attachments, and invoice dispute documentation. IA also reviewed prior State Auditor's Office reports on Data Center Services.

To obtain sufficient audit evidence to support our audit objectives and to gain an understanding of the DFA processes, IA interviewed management and staff, reviewed the invoice process by observing DFA staff perform their tasks, examined and analyzed documents, reviewed the invoice dispute process, and surveyed a small sample of state agencies regarding DIR billing.

Background

The DFA is the financial interface between the Data Center vendor and the 28 Data Center customer agencies. At the time of our audit, this function had five employees including a Team Lead. The group is responsible for monitoring and analyzing all financial activities related to the DCS Contract including receiving the vendor's DIR enterprise invoice, performing vendor invoice validation, approving the enterprise invoice for payment, notifying customer agencies of the availability of their invoice information on the Web Portal, notifying the vendor of any invoice disputes, coordinating disputes, and relaying concerns to the vendor. At the time of our audit fieldwork, the DFA reported to the Data Center Services division. Recently, the DFA was moved from the Data Center Services Division to the Chief Financial Office division. ***

The Data Center Services Financial Administration Section

The DFA is responsible for receipt and validation of the vendor invoice. Specific responsibilities include:

- overseeing and ensuring that the financial related terms of the Agreement are adhered to by the vendor.
- validating the DCS Enterprise Invoice, and all of the supporting attachments.
- interfacing with the DCS customer agencies concerning invoices and disputes.
- assisting DCS customer agencies with questions regarding their invoice, as well as assistance with dispute resolution.

The DFA's focus centers on the vendor generated enterprise invoice. When the vendor creates the invoices for customer agency data center charges, the vendor posts the invoices to the ITUAM (IBM Tivoli Usage & Account Manager system) through the web portal. When the invoices are posted by the vendor to the ITUAM, the DFA performs steps listed on a validation checklist to ensure that the enterprise invoice captures the individual DIR Customer invoices correctly which includes Monthly Unit Rates, Resolved Disputes and Service Level Agreement credits.

The checklist includes steps associated with the Invoice Summary, Base Charges, Chargebacks, Prior Period Adjustments, Mainframe Fixed Charges, Reimbursement Credits, Hardware-Software Charges, Service Level Credits, Service Level Adjustments, Requests for New Service, Aged Accounts Receivable, the ITUAM Invoice, and other items. The checklist steps are divided among three employees so the monthly validation takes place over a one, or sometimes, two day period.

The “Total Charge to DIR” amount on the invoice includes a Base Charge for each Resource Baseline Unit plus an incremental charge (Additional Resource Charge or ARC) or credit (Reduced Resource Credit or RRC) for Resource Unit volume usage fluctuations above or below the Baseline usage, and the Economic Change (inflation) Charges. The ARC or RRC charges for each Resource Unit are derived from subtracting the Resource Actual Units from the Resource Baseline Units and multiplying the results by the ARC or RRC Unit Rate listed in the contract.

Vendor Calculations:

Vendor Total charges to DIR = Base Monthly Charges + ARC/RRC Charges + ECA Charges

*ARC or RRC charge = Resource Actual Unit – Resource Baseline Unit * ARC or RRC Unit Rate*

Blended Rate charge = Vendor Total Charge / Resource Actual Unit

The Blended Rate (also called the DIR Customer Chargeback Rate or Monthly Unit Rate by DFA) is charged to customer agencies and is calculated for each Resource Unit by dividing the total charges for each Resource Unit by the Resource Actual Units used for the given month. The Resource Units are comprised of different components such as CPU Utilization, Tapes in Storage, Print Pages, Mailing inserts, Optical Storage, Server Instances, hardware and storage. After DFA analyzes the invoice, they ask the vendor to open the ITUAM portal so the respective customer agencies can view their invoice and examine the charges and determine their appropriateness. DFA also emails the invoices to the customer agencies along with some supporting documents for selected agencies. When a payment is made by the customer agencies, it is deposited in DIR’s DCS account at the Comptroller’s Office. The agencies have the option to pay the full amount and file a dispute for a portion of the invoice or file a dispute and pay the balance of the invoice. The disputed issues go to the DFA who review them and determine if they should be submitted to the vendor for review. When the vendor suggests a resolution, DFA reviews the suggested resolution to determine if it is satisfactory. If so, it is reported to the customer agencies by the DFA dedicated employee who acts as a liaison between the vendor and the customer agencies, and tracks the disputes.

From November 2009 to September 2011, customer agencies logged a total of 8,165 disputes. For FY 2011, the disputes averaged $583,805 per month. To arrive at this average, IA added the total dispute amount logged by DFA in their dispute database for FY 2011 and divided this total by 12 months. Some disputes can arise from questions with the contract, but often disputes are initiated by timing differences between billing amounts and the inventory system. The inventory system is the Configuration Management Database (CMDB) which keeps track of the assets being used by the customer agencies. Many disputes are the result of the asset inventory not being updated in real time. According to the vendor’s contract, the vendor should have completed, on an annual basis, a reconciliation of assets being used and the assets recorded in the CMDB; however, the first full inventory reconciliation was not completed until September 1, 2011.

Issues and Recommendations

Issue No. 1: Policies and Procedures

Internal Audit reviewed the policies and procedures provided by DFA for the data center invoice process. Policies and procedures provide employees with guidance in performing their tasks accurately and consistently. In addition, policies and procedures should be prepared so that new employees or outside parties could perform the tasks.

DFA provided IA with policies and procedures related to invoicing from the DCS web portal[1]and some that were not located in the web portal[2]. IA found that the procedures were written similar to management overview starter plans and did not include specific steps to perform the task. These documents contained only descriptions of high-level Interface Flow and Narratives, roles, scope, objectives for parties to the contract, statements such as "Policies are established jointly with DIR, as required" and "Interface information is established jointly with DIR, as required". When asked, DFA employees said that for invoice validation processing, they did not rely on written policies and procedures to guide their work but instead used on-the-job training.

DFA has not enhanced their policies and procedures to include specific steps that would guide an employee to accomplish invoice validation tasks or identify where to find the data associated to those tasks. The lack of detailed and current procedures can lead to inaccurate and inconsistent invoice validation processing and monitoring by employees. This also leaves the employee with no written guidance to perform their tasks.

Recommendation: The DFA should enhance their policies and procedures to include detailed steps for employees to accomplish their duties. These steps should include the purpose for the step, detailed procedures to perform the step, the attachments to the invoice or documentation that are involved, the names of reports used in the validation step, and where those reports can be located. These steps should be able to be followed by new employees. Also, DFA should update the procedures whenever a change in the vendor contract affects a policy or procedure.

Management's Responses

DFA agrees with the recommendation. DFA will update internal policies and procedures to include the IA recommendations above as part of the Transition process to the new service providers. Estimated completion date is 10/1/2012

[1] Web Portal Procedures: 5.1-Invoicing, 5.1.1-Invoice Verification, 5.1.4-Invoice Dispute, 5.2-Chargeback, 6.1.4-Pgm Issues Management/Dispute Resolution
[2] Procedures not in the Web Portal: Invoice Dispute Processing, Invoice Payment Processing, Resource Unit Validation Process

Issue No. 2: Invoice Validation

After DFA receives the Enterprise invoice from the vendor, DFA performs steps on their invoice validation checklist to determine if the vendor has correctly invoiced customer agencies for Data Center usage. The checklist requires DFA to verify and reconcile data on the vendor invoice.

IA requested a validation checklist from DFA to determine what test work was performed by DFA to confirm that no errors were billed to customer agencies. After examining the validation checklist received from DFA, IA determined that this checklist contained few references of where to locate the test work results. Many times DFA employees only initialed the checklist step to indicate that the work was performed. The few references on the checklist of work performed by DFA employees did not indicate the results or conclusion that the data used to verify the invoice was accurate or complete. Although the DFA supervisor sends an email to DFA staff to open ITUAM after reviewing the checklist, there was no evidence of supervisory review of the work on the checklist.

IA requested that DFA provide additional information regarding the reports used to perform the steps in the validation checklist. For each step IA requested that DFA provide IA with the report source, the name and the location of the report, and the work performed. The information provided by DFA indicated that many validation checklist steps were performed by “visual comparison”. The steps call for a reconciliation of the amounts, and validation of a calculation or formula. However, the source documentation is an excel spreadsheet of the Enterprise invoice provided by the vendor. The visual comparison is from one tab of the excel spreadsheet to another tab in the same excel spreadsheet. Additionally, there was no evidence that a verification of the calculations or formula was performed other than the employee initialed acknowledgment on the invoice checklist of the visual comparison and a color coded (green, yellow, red) flag indicating if any discrepancies were found.

For example, the purpose of checklist step 7.2 “Reconcile with the ITUAM Invoice,” is to reconcile the DIR enterprise charges to the ITUAM customer invoices. According to DFA, this is done to ensure that volumes and amounts the vendor has correctly invoiced to DIR are being passed on to the customers. DFA does this by comparing the total amount on the DIR Customer Invoice against the total on the Enterprise Invoice Summary. According to the DFA, there have only been a couple of times early in the Vendor contract when the Enterprise Invoice total did not match the total for all the DIR Customer Invoices. IA found that the checklist procedure 7.2 only determines that two amounts are the same and does not determine if volumes and amounts are billed correctly to customer agencies.

Although IA determined that DFA does periodically update the checklist, the checklist steps performed are not well documented, and lacked evidence of supervisory review or approval of the work performed. In addition, without verifying or reconciling the data, invoicing errors could go undetected causing incorrect billing to customer agencies.

Recommendation:

DFA should annually perform a review to determine whether invoice validation checklist steps continue to be relevant, require modification, or should be removed. DFA should document the reason for the validation steps (including details of the tests to be performed), record the results, and location of the test work. Additionally, a supervisor should review and sign that the step is complete and performed accurately.

Management's Responses

DFA agrees with the recommendation. DFA will perform an annual review of the invoice validation checklist and policies and procedures to confirm relevancy and make updates where needed. DFA will also enhance the invoice validation checklist as recommended by IA to include a supervisory sign off. Estimated completion date is 10/1/2012.

Issue No. 3: Resource Unit Validation

A major component of the vendor invoice is the Resource Unit (RU)[3], which is used to determine what DCS participating agencies are charged by the vendor for services. The purpose of the RU Validation process is to validate the volume and charges on the monthly enterprise invoice and to ensure that the vendor keeps the supporting documentation. The vendor is responsible for maintaining and retaining complete and accurate records of the supporting documentation for all charges to customer agencies. Additionally, they are responsible for providing to DCS sufficient information to validate the service volumes and associated charges.

In 2008 the State Auditor's Office report #08-038 mentions that the vendor was not keeping supporting documentation for RU verification; consequently, a validation schedule was created in a Formal Correspondence agreement with the vendor. The agreement also requires the vendor to carefully store and organize supporting documentation for efficient retrieval.

As a result of the SAO audit, DFA initiated a process to review and validate RU source data. DFA schedules these 24 RU's on a quarterly cycle to ensure that each RU is reviewed annually. This cycle is defined in a letter agreement called Formal Correspondence 398 which is to ensure that the supporting documentation is retained by the vendor and invoice amounts are verified. The objective of the process is to confirm that the DCS customer agencies were billed correctly and that the Vendor is adhering to contractual requirements.

[3] Examples of RUs are Mainframe services (application tapes in storage, print pages, mailing insertions etc), Applications Servers (high, medium and low service levels), Utility Services (e-mail accounts, LAN attached devices), and Server storage (allocated disk storage, direct attached tape).

At the time of our audit fieldwork, IA found that the validation schedule agreed to in the Formal Correspondence was not adhered to by DFA. Of the 24 RUs to be validated every year, DFA validated only:

- 7 in FY2008
- 1 in FY 2009
- 14 in FY2010
- 11 in FY2011
- ⁕ 4 were never validated in any FY

Many RU validations were years behind the schedule established by Formal Correspondence 398 with the Vendor. Also, for the RUs that had been validated, there was no evidence of supervisory review of the employee's work product. DFA indicated that the reasons for the gaps in completed validations were due in part to not receiving timely information from the vendor. Also, a document indicated that the work assigned to the employee performing the RU validation duties was reprioritized to other duties.

RU supporting documentation needs to be available in order for DFA to verify the vendor charges. If DFA doesn't verify the charges or request supporting documentation, then invoice errors might go undetected and become more difficult to verify and correct.   Additionally, there is a risk that the vendor might be out of compliance with Formal Correspondence 398.

Recommendation: In order to validate the charges on the Enterprise Invoice and ensure that supporting documentation is retained, all Resource Units should be consistently and appropriately validated by DFA employees according to the validation schedule established in the Formal Correspondence 398. Additionally, there should be DFA supervisory review and approval of the DFA employee's work before a DIR dispute is logged, to verify that the employee adequately documented the issues and obtained supporting information.

Management's Responses

DFA agrees with the recommendation. DFA will document and implement a risk based approach to future RU validation reviews. The DFA approach will be integrated with the RU validation responsibilities covered by the Multi-Sourcing Integrator's contractual statement of work. The reviews will include a documented supervisory approval before disputes are logged. Estimated completion date is 10/1/2012.

Issue No. 4: Total Vendor Charge to DIR

A component of the Vendor invoice is the Total Charge to DIR for each RU. The Total Charge is mathematically calculated during the invoicing process. These Total Charge component amounts are listed on schedules within the Vendor contract and are an agreement between DIR and the vendor in Formal Correspondence 321 (source data). Each month the DIR Enterprise invoice is presented in excel spreadsheets with tabs that detail the different amounts making up the Total Charge. *Attachment 1* to this report is an example of the excel spreadsheet tab that details how the components that make up the Total Charge for each RU are calculated.

The Total Charge is a combination of the following and is uniformly applied monthly to resources billed on customer agency invoices:

- Fixed cost = the Base monthly charge. Monthly it is 1/12 of the yearly cost that was established in the contract in FY2006 and updated in FY2009[4].
- Variable cost = ARC or RRC charge. This is a unit rate which was negotiated in 2006 times the difference between the Baseline units usage and the Resource Actual unit usage.
- Inflation cost = Economic Change Adjustment (ECA). The ECA is tied to the July Consumer Price Index and changes every September.

Validation step 3.1 and 3.2 verify the Base Charge which is a component of the Total Charge to DIR. Step 3.1 verifies that Resource Baseline Units on "Attachment 1-Base Charges" tab of the Enterprise Invoice is the same number of units that is on the "Consolidated - Revised[5]" tab of the Enterprise Invoice. Step 3.2 verifies that Base Charges on the "Attachment 1-Base Charges" tab is the same amount on the "Detailed Base Charges - Revised[6]" tab. These units and amounts are the result of previous agreements which detail what the projections are for each year of the contract.

IA determined that the DFA's annual validation of the Base Charge in September was to compare Excel tabs within the Enterprise invoice to determine if they are the same number. After September, DFA will spot check monthly the units and amounts to see if the tabs reconcile. DFA then initials on the verification checklist that the amounts are exactly the same as the September amounts. There is no evidence that DFA compares the amounts in the Enterprise invoice excel spreadsheet with the source data in Formal Correspondence 321 to verify that the agreed volumes and base charges embedded within the Enterprise spreadsheet are correct.

DFA has not reviewed the validation checklist steps for Base Charges to determine if the steps are achieving the goal of validating volumes and base charges on the spreadsheet. While IA's test work did not reveal any differences between the amounts on the invoice and Formal

[4] Locate on Invoice Exhibit 4A (Tab -Detailed Base Charges-Revised)
[5] Projected Usage by Fiscal Year
[6] Projected Charges by Fiscal Year

Correspondence 321, which is the source data, without a validation with the Formal Correspondence 321 the customer agencies invoices may be incorrect.

Recommendation: Although IA found no evidence of base charge or base volume errors, DFA should design the invoice validation checklist steps to achieve the goal of verifying that the Base Charge input data is the same as the data from the Formal Correspondence 321 for volumes and base charges. DFA should also establish procedures where the checklist steps are well documented on the validation checklist.

Management's Responses

DFA agrees with the recommendation. DFA will enhance the checklist to include the IA recommendation to document that the Base Charge input data is the same as the current contractual terms. Since the prior service provider contract ended on April 30, 2012, Formal Correspondence 321 is no longer applicable. Estimated completion date is 10/1/2012.

Issue No. 5: Dispute Resolution Process

DIR and the vendor work cooperatively together to manage DIR customer agencies' disputes. When DIR determines that there are Enterprise invoicing issues during the validation process, DIR will initiate a dispute with the Vendor. When a DIR customer agency identifies billing issues, the customer agency will initiate a dispute by alerting DIR of the problem via email. After this, DIR and the Vendor research solutions to resolve the disputes. If an agreement cannot be reached between the parties, DIR will manage the escalation process until a resolution can be found and tracks invoice adjustments, if required.

IA carried out a number of steps regarding the dispute resolution process. IA obtained a copy of the Dispute Database provided by DFA and analyzed that data. In addition, IA examined samples of dispute resolution documentation and reviewed a list of disputes for a large state agency for a six month period in 2011, including dispute issues, dispute amounts, and dispute resolution statuses

In addition, IA surveyed a small sample of state agencies (seven agencies, one with no response) regarding DIR billing, invoice disputes, the invoice dispute process, and opportunities for improvements. Although a limited number of customer surveys were conducted by IA, the surveys revealed that most areas of dissatisfaction surrounded billing issues with the CMDB not being updated timely. In addition, some agencies felt that more access to detailed data would be helpful to understand the invoice.

We found that the internal DIR dispute resolution process was reasonable. However, in some cases, customer agencies were somewhat dissatisfied with the process because some disputes were taking a long time to resolve.

Recommendation: We recommend that the DFA or DIR conduct periodic customer surveys to gauge customer satisfaction with DCS dispute processes and note areas for improvements. A questionnaire could be developed and distributed annually to a sample of customer agency staff members who are directly involved with disputes. This would allow the DIR to focus on improvements in the dispute process, some of which may be easily carried out within DIR or with the Vendor.

Management's Responses

DFA agrees with the recommendation. DFA will work with the new vendors to ensure future customer satisfaction surveys cover the DCS dispute processes. The first contractually required baseline survey is scheduled to occur in December 2012 to establish a baseline for measuring performance. After the baseline survey, the next overall customer satisfaction survey will be conducted in February, and every six months thereafter.

Issue No. 6: Supervisory Review of Invoice Modification

DCS customer agency invoices are created by the vendor and sent to the web portal. The invoices are released in the portal to customer agency once DFA authorizes the vendor to release the invoices and after the DFA's completion of the validation checklist.

IA was informed by DFA that the customer agencies' invoices were viewed online within the web portal after DFA asks the vendor to open the portal so agencies can view their invoices. However, during the audit, IA was notified by the Chief Financial Office Division's (CFOD) Accounting section, that DFA also sends invoices via email to the agencies. The DFA validation checklist does not indicate that invoices are emailed to the agencies, but it does indicate that draft emails are prepared. The email version of the customer invoice is in excel format and can be manually changed by the DFA employee responsible for disputes and invoicing. IA discovered that during the audit period, several agencies had their invoices changed to deduct accounts receivables, which were outstanding disputes. The deduction was made to reflect the total amount minus the aging receivable as a courtesy to the customer agencies. These changes by DFA adjust what the agency owes on the original invoice on the web portal. However, there was no evidence of supervisory review or approval of these changes to the invoice.

Recommendation:

Although IA found no evidence of manual adjustment errors**,** IA recommends that all invoices manually changed by DFA be reviewed for accuracy and approved by a supervisor. Also, we recommend that this approval be documented and stored on a shared drive with the invoice.

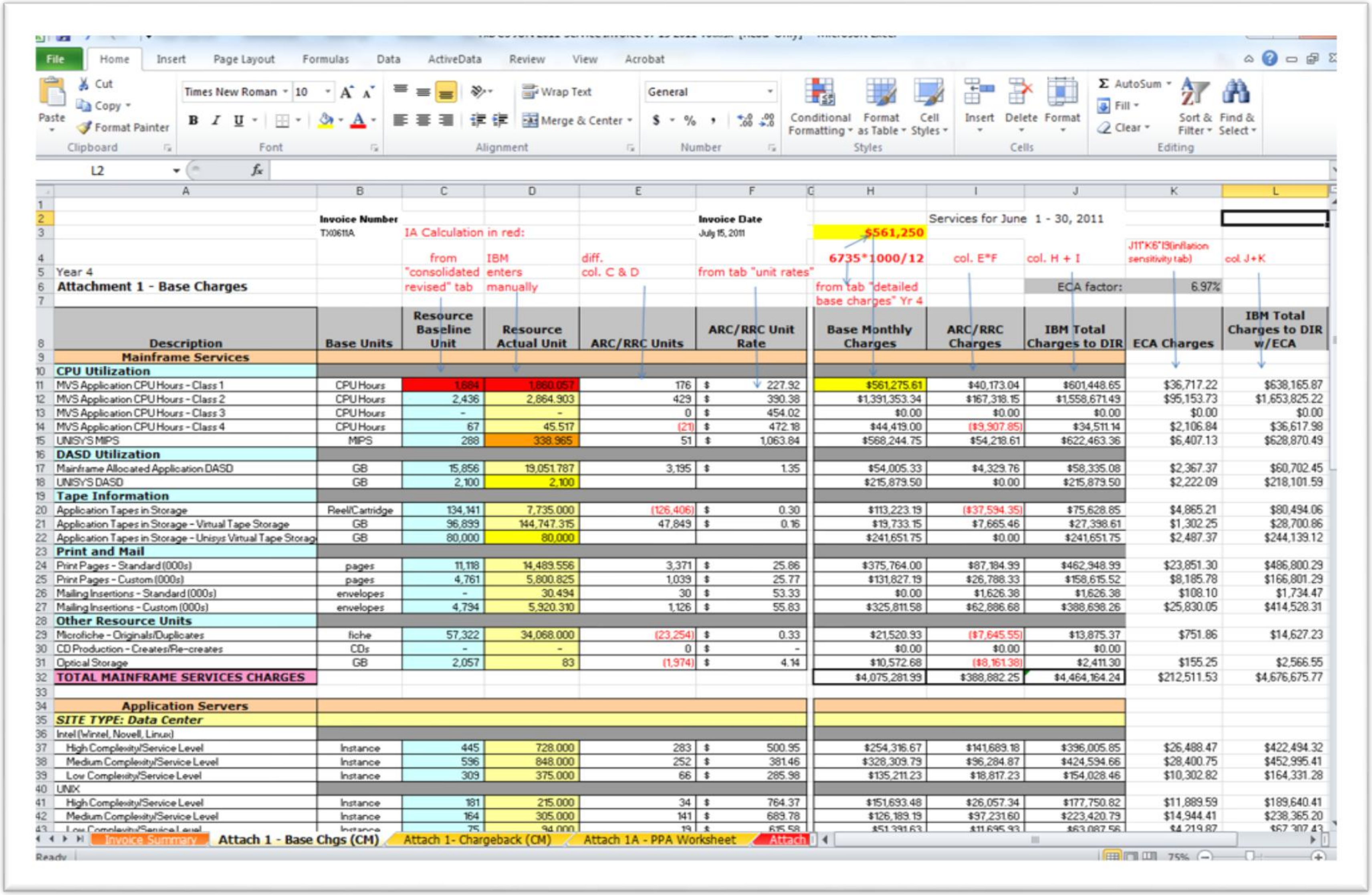
Management's Responses

DFA agrees with the recommendation. DFA will document supervisory approval of future manual invoice adjustments and will store the approval with the appropriate invoice. Estimated completion date is 10/1/2012.

Data Center Services Invoicing Process

Blended Rate Calculation

Attachment 1



Invoice Number: TX0611A

Invoice Date: July 15, 2011

Services for June 1 - 30, 2011

IA Calculation in red:

$561,250

6735*1000/12

from "consolidated revised" tab | IBM enters manually | diff. col. C & D | from tab "unit rates" | from tab "detailed base charges" Yr 4 | col. E*F | col. H + I | J11*K6*I9(inflation sensitivity tab) | col. J+K

Year 4

Attachment 1 - Base Charges

ECA factor: 6.97%

Description	Base Units	Resource Baseline Unit	Resource Actual Unit	ARC/RRC Units	ARC/RRC Unit Rate	Base Monthly Charges	ARC/RRC Charges	IBM Total Charges to DIR	ECA Charges	IBM Total Charges to DIR w/ECA
Mainframe Services										
CPU Utilization										
MVS Application CPU Hours - Class 1	CPU Hours	1,684	1,860.057	176	$ 227.92	$561,275.61	$40,173.04	$601,448.65	$36,717.22	$638,165.87
MVS Application CPU Hours - Class 2	CPU Hours	2,436	2,864.903	429	$ 390.38	$1,391,353.34	$167,318.15	$1,558,671.49	$95,153.73	$1,653,825.22
MVS Application CPU Hours - Class 3	CPU Hours	-	-	0	$ 454.02	$0.00	$0.00	$0.00	$0.00	$0.00
MVS Application CPU Hours - Class 4	CPU Hours	67	45.517	(21)	$ 472.18	$44,419.00	($9,907.85)	$34,511.14	$2,106.84	$36,617.98
UNISYS MIPS	MIPS	288	338.965	51	$ 1,063.84	$568,244.75	$54,218.61	$622,463.36	$6,407.13	$628,870.49
DASD Utilization										
Mainframe Allocated Application DASD	GB	15,856	19,051.787	3,195	$ 1.35	$54,005.33	$4,329.76	$58,335.08	$2,367.37	$60,702.45
UNISYS DASD	GB	2,100	2,100			$215,879.50	$0.00	$215,879.50	$2,222.09	$218,101.59
Tape Information										
Application Tapes in Storage	Reel/Cartridge	134,141	7,735.000	(126,406)	$ 0.30	$113,223.19	($37,594.35)	$75,628.85	$4,865.21	$80,494.06
Application Tapes in Storage - Virtual Tape Storage	GB	96,899	144,747.315	47,849	$ 0.16	$19,733.15	$7,665.46	$27,398.61	$1,302.25	$28,700.86
Application Tapes in Storage - Unisys Virtual Tape Storag	GB	80,000	80,000			$241,651.75	$0.00	$241,651.75	$2,487.37	$244,139.12
Print and Mail										
Print Pages - Standard (000s)	pages	11,118	14,489.556	3,371	$ 25.86	$375,764.00	$87,184.99	$462,948.99	$23,851.30	$486,800.29
Print Pages - Custom (000s)	pages	4,761	5,800.825	1,039	$ 25.77	$131,827.19	$26,788.33	$158,615.52	$8,185.78	$166,801.29
Mailing Insertions - Standard (000s)	envelopes	-	30.494	30	$ 53.33	$0.00	$1,626.38	$1,626.38	$108.10	$1,734.47
Mailing Insertions - Custom (000s)	envelopes	4,794	5,920.310	1,126	$ 55.83	$325,811.58	$62,886.68	$388,698.26	$25,830.05	$414,528.31
Other Resource Units										
Microfiche - Originals/Duplicates	fiche	57,322	34,068.000	(23,254)	$ 0.33	$21,520.93	($7,645.55)	$13,875.37	$751.86	$14,627.23
CD Production - Creates/Re-creates	CDs	-	-	0	$ -	$0.00	$0.00	$0.00		
Optical Storage	GB	2,057	83	(1,974)	$ 4.14	$10,572.68	($8,161.38)	$2,411.30	$155.25	$2,566.55
TOTAL MAINFRAME SERVICES CHARGES						$4,075,281.99	$388,882.25	$4,464,164.24	$212,511.53	$4,676,675.77
Application Servers										
SITE TYPE: Data Center										
Intel (Wintel, Novell, Linux)										
High Complexity/Service Level	Instance	445	728.000	283	$ 500.95	$254,316.67	$141,689.18	$396,005.85	$26,488.47	$422,494.32
Medium Complexity/Service Level	Instance	596	848.000	252	$ 381.46	$328,309.79	$96,284.87	$424,594.66	$28,400.75	$452,995.41
Low Complexity/Service Level	Instance	309	375.000	66	$ 285.98	$135,211.23	$18,817.23	$154,028.46	$10,302.82	$164,331.28
UNIX										
High Complexity/Service Level	Instance	181	215.000	34	$ 764.37	$151,693.48	$26,057.34	$177,750.82	$11,889.59	$189,640.41
Medium Complexity/Service Level	Instance	164	305.000	141	$ 689.78	$126,189.19	$97,231.60	$223,420.79	$14,944.41	$238,365.20
Low Complexity/Service Level	Instance	75	94.000	19	$ 615.58	$51,391.63	$11,695.93	$63,087.56	$4,219.87	$67,307.43

Invoice Summary | Attach 1 - Base Chgs (CM) | Attach 1- Chargeback (CM) | Attach 1A - PPA Worksheet | Attach