UNIVERSITY of HAWAI'I MĀNOA

Social Science Research Institute (SSRI)
Telecommunications and Information Policy Group
Telecommunications and Information Resource Management

ELECTRONIC MAIL DELIVERY

June 10, 2011

Mr. Ed C. Cruz
Director
Bureau of Information Technology
Government of Guam
P.O. Box 2950
Hagatna, Guam 96932

Dear Ed:

Please find enclosed the Assessment of Telecommunication Services in the Government of Guam. The Assessment was prepared in accordance with the Cooperative Agreement between the Government of Guam and the Telecommunications and Information Policy Group (TIPG) of the Social Science Research Institute (SSRI) of the University of Hawaii (UH).

As you are aware, the Assessment was initially focused only on an assessment of the type, quantity, and cost of the telecommunication services used by the Executive Branch of the Government of Guam (GovGuam) to develop IFB specifications and to estimate the projected savings that the GovGuam might expect from a competitive procurement. However, as you are also aware, during the course of undertaking the assessment, obtaining accurate information regarding the application of tariffs and contracts to services, cost, and the method of procurement became issues. As a result, the assessment broadly discusses competition, tariff, non-bid, and bid procurement issues. The discussion is unavoidable since these issues are central to the understanding of the current cost of telecommunication services, the services/cost effectiveness, and the potential savings that the GovGuam may anticipate from competitive bids.

We appreciate the opportunity to work together on this assessment. Should you have any questions regarding this assessment, please do not hesitate in contacting me.

Sincerely,

Norman H. Okamura
Faculty Specialist

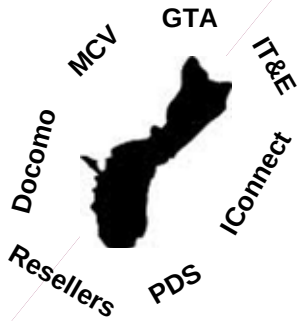
Attachments

Plain Old Telephone Services
Centrex Services
PBX and KSUs
Primary Rate Interface/Basic Rate Interface
Internet Access
GovGuam Wide Area Network
Mobile Telephone
Television

Assessment of Telecommunication Services in the Government of Guam

Prepared for the

Bureau of Information Technology
Government of Guam



Prepared by the

Telecommunications and Information Policy Group

Social Science Research Institute
University of Hawaii at Manoa

June 2011

Social Science Research Institute (SSRI)
Telecommunications and Information Policy Group
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Assessment of Telecommunication Services in the Government of Guam

Prepared for the Bureau of Information Technology (BIT)
Government of Guam

June 10, 2011

Executive Summary

This Assessment of the Telecommunication Services in the Government of Guam (Assessment) was prepared the Telecommunications and Information Policy Group (TIPG) of the Social Science Research Institute (SSRI) of the University of Hawaii-Manoa (UH). The Assessment was prepared in response to a request by the Bureau of Information Technology (BIT) of the Government of Guam (GovGuam) to prepare an Invitation for Bid (IFB) for telecommunication services. The Assessment was initially focused on preparing a summary of the type and cost of the services in order to develop IFB specifications and to estimate the projected savings that the GovGuam might expect from a competitive procurement. During the preparation of the Assessment, however, obtaining accurate information regarding the services, the enabling tariffs, tariff cost, and procurement became issues. As such, this Assessment broadly discusses tariff, competition, and non-bid procurement issues. The discussion of these issues is unavoidable since they are central to the understanding of the current cost of telecommunication services and the potential savings that the GovGuam may anticipate from a competitive procurement.

Telecommunications Environment

Guam has one of the most extensive telecommunications infrastructures in the Pacific Islands region. Guam also has a liberalized telecommunications environment with many competitors. These competitors include the Docomo Pacific, GTA, iConnect, IT&E, MCV, and PDS.

The Government of Guam procures over $2.7 million in telecommunication services annually. Telecommunication *services* include telephone, Internet Access, inter-agency communications over Ethernet transport, high capacity data communication services, long distance calling, mobile phone, television, and others. The GovGuam is a large consumer of telecommunication services. The Executive Branch alone, for example, has over 2,300 telephone lines, 46 Metro-Ethernet nodes, 16 ISDN Primary Rate Interface circuits, and 27 High Capacity/Internet circuits. When compared to the capacity and pricing that has been received by the Guam Department of Education (GDOE), however, the GovGuam has not received the best pricing for many services.

Highlights of the Assessment

There are three important reasons for the GovGuam to issue a comprehensive and competitive procurement of telecommunication services as proposed by the Bureau of Information Technology. *First*, by issuing an IFB for telecommunication services, *the GovGuam will comply with the requirements of Guam procurement laws*. *Second*, the competitive procurement of telecommunication services *will save the Government of Guam an estimated $900,000 a year*. These estimates were derived from a comparative analysis with the past and recent competitive procurements of the Guam Department of Education (GDOE) in 2007 and 2011 and are documented in the Assessment. *Third*, Government of Guam will benefit from *improvements in telecommunication services*. If the GovGuam were to bid services and

receive pricing similar to the GDOE, there should be significant improvements in the data communication links among the GovGuam agencies and increased capacity for Internet Access. There should also be the introduction of new services which would permit, for example, voice mail to be sent to email and/or to mobile phone devices and automatic notifications for 911 emergency calls.

Compliance with Procurement Law

Telecommunication services are subject to competition in accordance with the Guam procurement law; the U.S. Telecommunications Act of 1996; the Guam Telecommunications Act of 2004; the Directive of the Attorney General (February 16, 2011); and the rules, regulations, decisions, and orders of the Federal Communications Commission (FCC) and the Guam Public Utilities Commission (GPUC).

Attorney General Leonardo Rapadas, in February 2011, reminded all government agencies that "It is the policy of the Government of Guam to promote maximum competition and good management of resources (5 GCA 5010)." The Attorney general further stated "I am requesting that each agency review its telecommunication contracts or purchase orders to ensure that it was issued as a result of an invitation to bid within the last four years."

The GovGuam has never completed a competitive procurement central office (CO) based telephone services on a government-wide basis. The Bureau of Information Technology (BIT) issued a Request for Proposals (RFP) in 2009 and the GSA issued an IFB in 2010. Both were cancelled by GovGuam prior to any bids being submitted. In contrast, the Guam Department of Education (GDOE), on February 19, 2011, issued a comprehensive bid for telecommunication services. The GDOE awarded the IFB to the GTA at a rate of $33.45 for Plain Old Telephone Services and $26.17 for Centrex services. In comparison, the GovGuam current pays about $52.00 per line. The GDOE award was for the *same service*, using the *same telephone lines*, using the *same telephones* which are in place, and using the *same company*, but at a price approximately 50% less than what the GovGuam is currently paying. Given the 2,300 lines of the GovGuam, the monthly savings for the Government of Guam is estimated to be around $60,000 a month.

The GovGuam has never executed a competitive procurement for ISDN PRI Services. In 2007, the GSA issued an IFB for "video teleconferencing bandwidth" and awarded the bid for bandwidth up to 768 Kbps to the GTA. A PRI is 1.5 Mbps, double the 768 Kbps. In contrast, the GDOE issued an IFB for ISDN services in 2011. The price differential between the GDOE and GovGuam is roughly a 35% difference.

> **Recommendations:**
> The General Services Agency, as the central procurement agency for the Government of Guam, should issue and execute an IFB for telephone services and ISDN PRIs as soon as possible to ensure compliance with procurement laws and to ensure that GovGuam receives the very significant cost savings.
>
> The GovGuam should seek the application of the GTA rates offered to the GDOE under an ICB. The rates should be used until the GovGuam fully executes and implements a competitive bid for telephone services.

Data and Reporting Requirements

The Bureau of Information Technology (BIT) and the University of Hawaii (UH) were unable to obtain a list of all telecommunication services with specific tariff cross-references so that charges could be

verified and services audited. Additionally, the GSA issued an IFB in 2007 for long distance services. The IFB requested pricing but did not require any reporting of the use of the service in a manner which enables comparisons against contract pricing terms. The IFB simply established an indefinite quantity price list through an award. In 2011, the GSA reissued the IFB for long distance services. A bidder requested the GSA to provide a breakdown of how many minutes of calls were to the locations that the GSA desired. The data could not be provided in a timely manner. Examples of the IFBs are included in the appendices to the Assessment.

> **Recommendation:**
> The General Services Agency, as the central procurement agency for the Government of Guam, when issuing IFBs for telecommunication services, should require important information on the use, tariff, and contract term references to be provided and that contract awards be executed through contracts to ensure that the terms and conditions of the award are clear and that information is provided to the GovGuam to ensure accountability in the delivery of the service and the invoiced charges.

Discrepancies in the Charges

The data that was provided by the GTA contains very significant variations in pricing for what appears to be the same service. There are 205 distinct charges for the 2,300+ lines. Further, as stated earlier, the BIT and the UH was unable to obtain data that provided cross-references to the tariffs and/or contract pricing which would permit an analysis of both the tariff-based pricing and services. As a result, the UH study could not completely assess whether the charges were appropriate. Additionally, there were differences between the actual charges and the IFB amounts. For example, in an IFB issued by the GSA in 2007 for Ethernet services, there are differences in the price proposed and the price charged. It may that the pricing and tariff pricing for the telecommunication services will be validated with additional information. However, the variations in pricing and tariffs and contracts warrant further review.

> **Recommendations:**
> The General Services Agency, as the central procurement agency for the Government of Guam, when issuing IFBs for telecommunication services, should require important information to be provided and awards be executed via contracts to ensure that the terms and conditions of the award are clear and in compliance with GPUC rules. The GSA should also monitor the payments for the service to ensure that the invoices for services match the tariff and/or contract terms and conditions.
>
> The Bureau of Information Technology should request a review of charges for telecommunication services by the Office of the Public Auditor to ensure that the charges are consistent with tariffs and contract awards.

Lack of Effective Procurement

In 2007, the GSA issued an IFB for Metro Ethernet Transport Services. In the same year, the GDOE issued an IFB for like services. The GSA awarded an IFB for 5 Mbps at $800 a month and an additional $188 a month for "managed router" services. The GDOE awarded an IFB for 135 Mbps at $500 a month. The capacity/price ratio between the GSA and GDOE IFBs are orders of magnitude apart. Most recently, the GDOE, in 2011, rebid the service. The service that was awarded is 1,000 Mbps of like data communications capacity at $775 a month. What accounts for this significant difference in capacity v. price? The Assessment identifies other areas where there are significant differences in capacity/price ratios or in price for the identical service.

Recommendations:

The General Services Agency, as the central procurement agency for the Government of Guam, should exercise due diligence in procurement and encourage competition so that the GovGuam receives comparable or better pricing for telecommunication services acquired by other government agencies.

The General Services Agency, as the central procurement agency for the Government of Guam, should issue and execute an IFB for Ethernet services as soon as possible to comply with the procurement laws of Guam and rules, regulations, decisions, and orders of the Guam Public Utilities Commission, and to ensure that GovGuam promotes maximum competition and good management of its resources.

Promoting Competition

Attorney General Rapadas, as noted earlier, reminded all agencies in February 2011, that 5 GCA §5010 states that "It is the policy of the Government of Guam to promote maximum competition and good management of resources." In the GDOE bid, issued in 2007, there were seven Bidders. In the GovGuam IFB issued in 2007, there were only two Bidders. The Bidder that was successful in providing the Ethernet equivalent service to GDOE in 2007 did not respond to the IFB. The Bidder that won the IFB for Ethernet equivalent services in 2011 also did not submit a bid. Both companies stated that they were unaware of the IFB.

Most recently, in the Long Distance IFB issued by the GSA in 2011, the GSA advertised the IFB in the newspaper as required by law. On the day of the Bidders Conference which followed the advertisement, major competitors did not show up. The BIT called three potential Bidders authorized by the Guam Public Utilities Commission to provide LD services. The CLECs then picked up the IFB. The Bidder's Conference was not a mandatory requirement. A Bidder that was unaware of the IFB was eventually awarded the IFB.

Recommendation:

There are only a limited number of telecommunication service providers authorized by the GPUC to provide telecommunication services. While the procurement code (5 GCA §5211) minimally requires the advertising of an IFB in the newspapers, the GSA should attempt to promote competition by notifying all authorized telecommunication providers of any IFB for telecommunication services.

Telephone Bid Specifications

The GSA IFB specifications for telephone services issued in 2010 and proposed for issuance in 2011 are proprietary to the incumbent. First, the IFB specifications were based only on the current telephone features of the GTA. The DOA data processing contract employee who prepared the specifications stated that he was directed by the CPO to only prepare specifications for the current system, despite being an advocate for advanced Voice Over Internet Protocol (VOIP) technology. So, the specifications were taken only from the GTA features which use the DMS-100 telephone switch. The specifications did not include modern features such as integrated messaging (voice messages to email). Second, the IFB prepared by the GSA did not include telephones. This is an important issue since the current Centrex services are provided by a legacy Digital Multiplex System (DMS) telephone switch and the DMS digital feature phones use a proprietary signaling method. If the GSA required no phones in the IFB, then, no other Bidder could have provided a telephone service based on the use of the existing telephones unless a company was to procure a DMS telephone switch. Any other bidder would have to be disqualified or

the IFB would have had to be cancelled and reissued, providing the incumbent with two opportunities to provide an IFB response. There is a common denominator among the companies. All GPUC authorized providers of telephone services have a telephone switch from Metaswitch Networks.

> **Recommendation:**
> The General Services Agency, as the central procurement agency for the Government of Guam, should issue IFBs which enables more than a single company to offer a telecommunication service. All of the carriers in Guam (GTA, IT&E, MCV, and PDS) use telephone switches from Metaswitch Networks. An IFB based on the Metaswitch Networks would enable all Bidders to meet the switch and feature specifications for the telephone services.

Mobile Phones

The Legislature of Guam routinely restricts the use of local government funds for mobile telephone services through the GovGuam general appropriations bill. For example, the appropriations law in 2010 states that "No government of Guam funds, regardless of source and including funds expended by autonomous agencies, shall be expended for the use of cellular telephones, cellular telephone services and other wireless telephone services, unless the government of Guam will be reimbursed from Federal funds or other grants." The appropriations law contains specific exceptions to the restriction in the use of mobile phones. In 2010, there were 87 GSM mobile phone services paid for by the GovGuam. Most of the mobile services were for agencies specifically exempted under the appropriations law or those that receive significant federal funding (e.g. Homeland Security, Public Health, and the like). However, there are a significant number of mobile phones which are listed under the Department of Administration and the Department of Revenues and Taxation which are not part of the exception list and may not have been reimbursed by federal grants. For example, it is not certain whether the telephones listed under the DOA account are reimbursed under federal funds. As Attorney General Rapadas reminded all agencies, there is personal liability as provided for in 5 GCA §7103 for "expending money without proper authorization, without proper authority, illegally, or contrary to law."

> **Recommendation:** The Bureau of Information Technology should refer the issue to the Department of the Attorney General and to the Office of the Public Auditor to conduct a preliminary review of the use of mobile phones. A preliminary review would help to determine whether the mobile telephones are authorized by the Guam appropriations laws and whether the GovGuam was in fact reimbursed from federal funds or other grants.

Individual Case Basis (ICB) Tariffs

The Bureau of Information Technology requested a complete set of tariffs from the Guam Public Utilities Commission to determine whether the GovGuam, as a large customer, should receive any discounts for telecommunication services. The ICB information provided by the GPUC indicates that tariffs may not have been filed for certain telecommunication services. The Guam Telecommunications Act of 2004 and the decisions and orders of the GPUC require a telecommunications carrier to file tariffs or Individual Case Basis (ICB) tariffs before billing a regulated telecommunication service. Specifically, 12 G.C.A. §12106 (c) states that:

> (c) Unless otherwise ordered by the Commission or provided by or under authority of this Article, no telecommunications company shall provide or resell any telecommunications service unless tariffs relating to that telecommunications service have been filed

and the notice period has expired. Unless otherwise ordered by the Commission or provided by or under authority of this Article, no telecommunications company shall (1) charge, demand, collect or receive a greater or less or different compensation for such service than the charges specified in its tariffs, (2) refund or remit by any means or device any portion of the charges so specified, or (3) extend to any person any privileges or facilities or employ or enforce any classifications, terms and conditions, except as specified in such tariffs.

Recommendations:
The Bureau of Information Technology, on behalf of the Government of Guam, should petition the GPUC to confirm whether tariffs were filed. If required tariffs were not filed, then, the BIT should request that the GPUC determine whether the contract charges of GTA for Metro Ethernet Services are appropriate under the law and whether a refund is due under the GPUC rules, regulations, decisions, and orders. The Department of Attorney General should be copied on the request.

The BIT should request the Office of the Public Auditor to assist with a full review of all tariff and contract services to determine whether the charges and service have been appropriately applied and provided in accordance with the tariffs and Invitation for Bids.

Internet Access Services
Guam has some of the best Internet Access services in the Pacific Islands due to its location as a hub for submarine fiber optics cabling systems. The Assessment revealed that the GovGuam only has about 12 Mbps of services and could significantly lessen it costs and/or improve the Internet services with the savings should GovGuam obtain the same pricing as the GDOE. The Assessment also revealed that Internet Access for the GovGuam users was located in the category of high-capacity services.

Recommendations:
The General Services Agency should bid the Internet Access services with a tiered pricing structure, QoS/SLA, and other requirements to ensure that the GovGuam receives a service and pricing equal to or better than the GDOE has received under the 2011 GDOE IFB.

The BIT should assert management control over the Internet Access, improve the capacity of Internet Access for GovGuam by applying some of the savings to increasing the capacity for the GovGuam, and establish the technologies and internal control processes to ensure security and prioritization of Internet traffic

Bureau of Information Technology
The Bureau of Information Technology should undertake the analysis, redesign, and reprogramming of the GovGuam networks based on a higher capacity (1 Gbps) data communications capability and a virtualized server environment. A virtualized server environment is the most efficient way to manage server hardware and services, but such an environment absolutely requires a robust and secure network. Data congestion, especially over slower or congested telecommunication links, could lead to poor response times at the user sites. It is imperative that the network be documented and a Service Level Agreement (SLA) be prepared.

The redesign should lead to the termination of certain "High Capacity" links, if indeed they are high-capacity links. The links should be converted to higher capacity ETS services. The routers and switches

may also need to be upgraded and reprogrammed based on the higher capacity available. While this is a significant effort, the results will lead to much better services and network management for all GovGuam agencies. It would also establish the inventory for billing purposes. As part of this effort, the BIT should procure network management tools and establish a network management system. This would help to ensure that GovGuam services are better monitored, managed, protected, and supported.

Recommendations:

The Bureau of Information Technology, on behalf of the Government of Guam, should request that savings from the telecommunications IFB for the first year be applied to ensuring that the infrastructure is upgraded to meet the needs.

The BIT should conduct a detailed audit of telecommunication services and develop/ implement a network plan for data communications.

The Government of Guam should consolidate the information technology staff responsible for systems and networks directly under the Bureau of Information Technology, although applications analysts/programmers and end-user technicians for non-government-wide applications should remain in the agencies.

Assessment of Telecommunication Services in the Government of Guam

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Assessment of Telecommunication Services in the Government of Guam

Norman H. Okamura
Christina Higa
Social Science Research Institute
University of Hawaii at Manoa

June 10, 2011

I. Introduction

The purpose of this summary and assessment of telecommunication services is to broadly describe the major types of telecommunication services used by the Government of Guam (GovGuam), the current cost of these services, estimate the savings, if any, that may be achieved through a competitive bid, and to provide recommendations for the competitive procurement and management of the telecommunication services for the GovGuam.[1]

Telecommunication services are defined, for the purposes of this assessment, to include:

- Central Office (CO) based Telephone services, including plain old telephone services (POTS) and Centrex features phone services
- Mobile Telephone Services
- Long Distance Telephone Services
- Integrated Services Digital Networking (ISDN) Primary Rate Interface (PRI) and Basic Rate Interface (BRI)
- Metro Ethernet Transport Service (ETS)
- High Capacity Data Services (T1, DS3, OC-3, 1 Gbps)
- Broadband Internet Access Services
- Small Office Internet Access
- Television Services

The report attempts to be specific to the purpose and omits extensive descriptive information about Guam, the excellent and competitive telecommunications environment, and/or other topics not directly pertinent to the purposes of the report. The report does, however, broadly discuss competition, tariff, and non-bid procurement issues. The discussion is unavoidable since these issues are central to the understanding of the current cost of telecommunication services and the potential savings that the GovGuam can anticipate from competitive bids.

The Assessment, or parts of the Assessment, which summarize the services should be included as an attachment to an Invitation for Bid (IFB) that is planned by the Bureau of Information Technology (BIT). The report would provide Bidders with a better understanding of the telecommunication services that are currently being used by the GovGuam and provide useful information for estimating the cost of providing a service.

[1] We would like to acknowledge and express our appreciation to the external reviewers of the Assessment. We would also like to thank Mary Menidola of the BIT for requesting the information needed for the Assessment. Any errors and omissions remain the responsibility of the authors.

II. Competitive Telecommunications in Guam

As a U.S. territory, Guam operates under a competitive telecommunications regime as provided for by the U.S. Telecommunications Act of 1996, the Guam Telecommunications Act of 2004, and the administration of these laws by the U.S. Federal Communications Commission (FCC) and the Guam Public Utilities Commission (GPUC).

Guam has an Incumbent Local Exchange Carrier (ILEC) and three Competitive Local Exchange Carriers (CLECs). The ILEC is GTA TELECOM LLC (GTA), a company wholly owned by TELEGUAM HOLDINGS LLC d/b/a GTA. The ownership of the ILEC and its other operating companies was recently transferred to "AP" TELEGUAM HOLDINGS LLC.[2]

The CLECs include IT&E, Guam Telecom, LLC d/b/a MCV Telecom, and Pacific Data Systems (PDS). All CLECs have a CLEC Interconnection agreement with GTA. However, only PDS, today, has co-located telecommunications equipment inside of the Central Offices (COs) of GTA.

The ILEC and CLECs provide regulated services under tariffs which are filed with the Guam PUC. The carriers are able to offer special pricing and/or service arrangements through Individual Case Basis (ICB) filings with the GPUC (CLECs are not obligated to file ICB arrangements with the GPUC, but are bound by non-discriminatory regulations). Other unregulated services may be offered by the ILEC or CLEC affiliated entities of the corporation but using the dba brand name of the company.

III. Recent Efforts to Procure Telecommunication Services

The Executive Branch of the Government of Guam has procured its telecommunication services primarily from GTA. Telephone services (Centrex, POTS, and ISDN BRI/BRI) services have never been competitively procured on a GovGuam-wide basis. Competitive procurements were issued for the Long Distance, Metro Ethernet data services, Video Teleconferencing, and Internet Access in 2007.[3]

In 2009, the newly organized Bureau of Information Technology (BIT) recognized the need for GovGuam to procure telephone services through competitive procurement processes.[4] Prior to 2009, competitive procurements for telephone services were not required by the General Services Agency (GSA) of the Guam Department of Administration.

Recognizing the legitimacy of the legal and vendor concerns, the BIT, in September 2009, issued a Request for Proposal (RFP) for telephone services. This RFP was cancelled by GovGuam before any bids were opened.[5] An Invitation for Bid was issued by the GSA on March 13, 2010, but that IFB was cancelled before opening as well.[6]

The Chief Information Officer (CIO) of the BIT, in August 2010, requested the assistance of the Telecommunications and Information Policy Group (TIPG) at the University of Hawaii-Manoa (UH) through an

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[2] Federal Communications Commission, Press Release, on FCC Docket WC Docket No. 10-260, June 6, 2011.

[3] GSA-032-07 was awarded by the GTA on October 2, 2007 for 3 year term. This contract is currently expired but has not been rebid except for Long Distance that was bid in May 2011.

[4] The Bureau of Information Technology was established through Executive Order 2005-25.

[5] See Appendix O. The BIT RFP was issued on September 30, 2009. According to Jim Lacson, the former Chief Information Officer, the RFP was cancelled because the evaluation methodology included "cost" as a factor.

[6] See Appendix P. The GSA issued an Invitation for Bid (IFB) GSA-058-10 on March 18, 2010. The IFB was cancelled due to questions that GSA could not answer in the IFB. The then BIT CIO was unaware that the GSA had issued a separate procurement.

intergovernmental Cooperative Agreement (CA). A Cooperative Agreement was subsequently executed and the UH TIPG initiated its assistance to the GovGuam. Initially, the IFB was to be limited to telephone services. The UH agreed, at no addition cost, to prepare specifications for other telecommunication services that expired in 2010, as requested by the BIT.

Approval to proceed with the Cooperative Agreement was received in December 2010. In January 2011, during the transition between administrations, the GSA, requested that the newly appointed CIO sign-off on the second GSA specifications for an IFB for telephone services. The technical specifications of this IFB were essentially the same specifications that the GSA issued in 2010 and focused only on telephone services. These specifications were proprietary and could only have led to a single bidder since the bid specifications were based only on existing services and features and because the IFB did not include a provision for telephones. The current advanced digital handsets are proprietary to the Digital Multiplex System (DMS) telephone switch operated by the GTA. No other bidder could have delivered the service without a DMS switch which is only operated by the GTA.

The CIO did not authorize the issuance of the 2011 GSA IFB and authorized the UH to proceed with the preparation of a comprehensive IFB.[7] The CIO believed that bids were not only required for telephones but also for the data communications, Internet Access, and other services. The CIO also believed that a systematic set of bids with more comprehensive specifications would help to improve the quality of telephone and data services and generate more cost savings for the Government of Guam.

A draft Multi-Part IFB was prepared by the BIT and UH for preliminary review by the GSA. This bid was provided to the GSA for review and comments in early February 2011.

As part of the IFB preparation, the CIO and UH visited the Guam Department of Education (GDOE) in February 2011. The purpose of the visit was to determine whether the GDOE would enable health care providers to participate in the network established by the GDOE in accordance with the Education Rate (Erate) program of the Schools and Libraries Division (SLD) of the Universal Service Administrative Company (USAC). This led to the discovery that the GDOE needed to issue a new IFB for services and was up against formidable deadlines to meet the requirement of the SLD. The BIT assisted the GDOE in the issuance of its IFB for these services. The GDOE IFBs issued in 2007 and 2011 are important because they provide an important reference point for price and procurement method comparisons with Gov-Guam.

Concurrent to the preparation of the IFB by the GDOE and the GSA, the Attorney General (AG) of Guam, on February 16, 2011, reminded all Government of Guam departments and agencies that telecommunications was competitive and that there could be personal liability based on 5 G.C.A. § 5010.[8]

The memorandum issued by the AG stated that:

> "It is the policy of the Government of Guam to promote maximum competition and good management of resources. (5 G.C.A. §§5010, Attachment A) In an effort to ensure compliance with Chapter 5 of the Guam Code Annotated, I am requesting that each agency review its telecommunications contracts or purchase orders to ensure that it was issued as a result of an invitation to bid within the last four years."

The AG further instructed the agencies as follows:

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[7] Email from the BIT CIO to the Chief Procurement Officer dated January 25, 2011.

[8] See Appendix Q.

> "If your agency or department is not in compliance with the aforementioned section of the law, please take appropriate steps to properly procure telecommunication services. The failure to comply with this Section may lead to personal liability as provided for in 5 G.C.A. SS 7103 (Attachment B).[9]

The reminder reinforced the legal requirement for competition in the procurement of telecommunication services based on the Guam procurement code.

On April 8, 2011, a taxpayer lawsuit was filed by Pacific Data Systems (PDS), one of the Competitive Local Exchange Carriers (See Appendix S). The taxpayer lawsuit is based on the allegation that the GSA CPO did not issue a competitive bid for telephone and other telecommunication services despite being informed that the services should be competitively bid in accordance with Guam procurement law.

IV. Summary of Telecommunication Services

The following is a summary of the major telecommunication services that are used by the Government of Guam.

A. Data Collection

As part of the Cooperative Agreement, the BIT requested that the GTA provide one full month of data the telecommunication services provided to GovGuam agencies. Specifically, the data requested was for one month of services that would list all the accounts and services provided to GovGuam with descriptive columns and with column references to the appropriate GTA tariffs and surcharges.[10]

The individual bills for the agencies of the Government of Guam contain specific information and data was provided that listed Recurring Charges, One-Time Charges, Usage Charges, Discounts, Surcharges, and a Total. However, the data provided and the invoices to GovGuam agencies do not reference a specific tariff or contract. The GTA did not provide the data with tariff references that would comprise the Monthly Recurring Charge (MRC). Without this information, attempting to disaggregate and cross-reference the charges to the myriad of tariff prices would have involved guesswork, taken an inordinate amount of time, and would remain subject to interpretation. The complete data provided by the GTA is in Appendix A. An example of the detailed billing information may be found in Appendix M.

The data provided by the GTA in the Appendix A does not include a breakdown of the tariff cross-references that would provide a comparison of current services and costs against the existing GTA tariffs. Although multiple requests were made for the specific tariff related information, the GTA has not yet responded.[11] As such, it is not possible, at this time, to examine whether the cost of the service is appropriate for the service that has been provided. However, based on the information provided, there are *205 different charges* for telephone services alone (See Appendix U).

Despite the lack of detailed tariff/contract referenced breakdowns, the data provided by the GTA for all of GovGuam services is useful for a high-level summary and analysis of the services that are being used,

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[9] Ibid.

[10] The data was requested by Mary Mendiola, a Systems Analyst at the BIT.

[11] A second request was made by Mary Mendiola. Norman Okamura requested the information in February 2011. GTA agreed to provide the information and confirmed that the information would be sent in by email. A follow up email was sent in March 2011. The data was not provided by the GTA.

an assessment of the cost of such services to GovGuam, and the preparation of an IFB for competitive procurement of services.

Data was also requested from the other CLECs. However, the CLECs do not provide a significant amount of services to the Executive Branch of the Government of Guam. Long distance services are shared between the GTA and the IT&E. There are also some mobile phone services provided by the IT&E and Docomo. Docomo also provides a few DSL lines and paging services. Long distance telecommunication services are not included in this Assessment since data is not available.[12]

Based on the data provided, the GovGuam uses six major categories of services provided by the GTA. These services include:

- Telephone Services
  - Centrex Services
  - Government/Business Telephone Services
  - Hosted PBX Services
- Long Distance Telephone Services
- Digital Data Services
  - ISDN Primary Rate and Basic Rate Interfaces
  - High Capacity Data Services
  - Metro Ethernet Transport Services
- Internet Access
- Mobile Telephone Services
- Video Services

There are other miscellaneous services that are purchased by GovGuam agencies such as Direct Inward Dial (DID) lines for Private Branch Exchange (PBX) systems, inside wire maintenance, voice mail, and vertical calling class features. However, these services are not significant when compared to the five major services above. What follows is a brief description of the five major services (long distance not included), a review of potential providers for the service, and the cost of the service to GovGuam.

B. Telephone Services

There are three major types of telephone related services that are provided by the GTA:

- Centrex Services
- Government Telephone Services/Business Telephone
- Managed PBX Services.

1. Centrex Services

The data in Appendix B shows that "Centrex" services are provided by the GTA.

These services have not been competitively procured, although there were two attempts to obtain the competitive services.

[12] The latest IFB issued in 2007 did not include any provisions for reporting. As a result, information on long distance is not available. Due to questions raised during the 2011 rebid (GSA 054-11) for long distance services, data was provided in aggregate forms. The data cannot be analyzed at this time.

The Centrex services are defined by the GTA in its General Exchange Tariff – Section 6 – Enhanced Central Office Based Services.[13]

The Centrex service is defined by the GTA in the introduction of the tariff as follows:

"Meridian Digital Centrex Service is a central office based service, which provides PBX and key system type features to large and small multiline business customers. Basic operating features include Direct Inward Dialing (DID), Direct Outward Dialing (DOD), Station-to-Station Dialing, Automated Identified Outward Dialing (AIOD), and Tone Dialing."14 [Underscore added for emphasis]

The "PBX and key system features" provided through the Centrex services are described on page 6 of Section 6 of the Generation Exchange Tariff 1. There are three basic grades of service.

"B Service Arrangements

1) The MDC Rate Structure includes the following three elements:

a. Monthly subscription fee for the Grade I, standard subscription package

b. Monthly subscription station line rate, if applicable, for the grade and feature selected

c. Charges for optional features

d. Applicable non-recurring charges.

2) Meridian Digital Centrex Service is arranged in three package grouping. Grades I, II and III.

The Grade I MDC grouping consists of three feature packages, and is designed for small systems with fewer than 70 stations. The Grade II grouping, consisting of three packages, is designed for larger systems in the range of 71-1,000 stations. MDC Service or Grade I and Grade II Service includes specific feature set packages, described below as part of each offering. MDC Grade III Service is a custom offering designed for extremely large systems with over 1,000 stations. Rates for MDC Custom Service are described in paragraph E.9. of this section.

a. Grade I MDC Centrex Service is available in four packages:

1) Small Standard – serving 2-15 stations.
2) Full Standard – serving 16-30 stations
3) Premium – serving 31-70 stations.

b. Grade II MDC Centrex Service is available in three packages:

1) Standard – serving 71-100 stations
2) Premium – serving 101-399 stations
3) Deluxe – serving 400-1000 stations.

[13] GTA General Exchange Tariff No. 1, Section 6.

[14] GTA General Exchange Tariff No.1, Section 6, p2. The tariff describes the Centrex as providing PBX and Key System Unit (KSU) features. The reason why the GTA tariffs begin with the description of the service is because PBX and KSU systems are known to have a lot of feature capabilities.

c. Grade III MDC Centrex is a custom offering, available on a specific contract on an individual case basis.

A customer may upgrade to another package and pay a Nonrecurring Charge in addition to applicable Service Charges from Section 3 of the General Exchange Tariff. MDC package upgrades to MDC Grade HI Custom Service are available on an individual case basis (ICB).

MDC Service will be provided for a one-month or a twelve-month period at the rates provided in paragraph E of this tariff. MDC Service is provided for a minimum of one month, beginning on the service installation date."

The GTA Tariff describes the Grades of Service and feature groups for different customer group sizes (small standard, full standard, premium, deluxe). The tariff provides for optional features that are orderable on an "Individual Case Basis" Tariff (ICB). Specifically, Section 6 states that:

"Grade III MDC Centrex is a custom offering, available on a specific contract on an individual case basis."[15]

An ICB is a standard regulatory mechanism that enables the GTA and other carriers to provide special pricing and services to customers and/or pricing discounts due to the quantity of services purchased.

An ICB from all carriers is required to be filed with the Guam Public Utilities Commission to ensure that (a) the ICB is for more than 10 lines; (b) the ICB is based on a Long Run Incremental Cost (LRIC) and does not constitute predatory pricing; and, (c) the ICB is non discriminatory and the rate must be provided to any "similarly situated" customer.[16]

The requirements are based on the federal and state laws that require regulated telecommunication utilities to provide service in a non-discriminatory manner and prohibit predatory pricing.

"Non-discriminatory" means that the same pricing will apply to "similarly situated" customers equally. The "predatory pricing" criterion is intended to address the potential for the Incumbent Local Exchange Carrier (ILEC) to provide the service at a rate lower than cost in order to drive competitors out of the market.

Data – The GTA provided data in Appendices B (Centrex Services) and Appendix C (Government/Business Services) show the wide variation in charges. Based on a frequency distribution of these charges (See Appendix U), there are 205 different charges for the 2,300+ lines. The charges for these services cannot be understood without a cross-reference to the GTA tariffs.

Nature of Competition – There are four Local Exchange Carriers in Guam: GTA, IT&E, MCV, and PDS.

[15] GTA General Exchange Tariff No.1, Section 6, p4.

[16] Guam Public Utilities Commission (GPUC) Order - GTA Docket 11-04, April 18, 2011, pages 1-2.

Number of Lines - There are about 1,686 "lines" associated with the GovGuam accounts with charges for the month of November 2010.[17]

GTA Charges - The charges to the line number range from $0.52 a month to a high of $2,119.78 a month. 19 lines have no charge or some form of a credit (i.e., negative number). The average cost of the line is close to $50 a month.

The total cost of these services under the Centrex category is $84,771 per month or $1,017,252 a year.

As noted earlier, without the tariff information arrayed, it is not possible to determine the types of services that are being used and the reasons for the variable pricing. Discrepancies will most likely be explainable through the information relating to how the tariffs were applied. However, there appears to be many deviations from the tariff pricing that cannot be readily explained.

Notes – The Government of Guam may not have received the best pricing based on its customer size (e.g., number of lines). The average Centrex line cost is high in comparison to other competitive markets. It is not clear how the Centrex services differ from Government Telephone or Business Telephone services or which tariffs apply since the information was not provided. The lack of information leads to the potential for overcharging.

There data and tariff structure of the GTA indicated that the GovGuam had three alternatives for lessening the cost of service. First, the GovGuam could have requested that the GovGuam be given, at a minimum, consistent pricing based on the largest customer with over 1,000 tariffed lines. The GSA, as the central procurement agency, could have requested in accordance with the existing tariffs that the highest discounts apply to all of the agencies of the Executive Branch of the Government of Guam as a single customer. Second, the GovGuam could have been given special pricing through an ICB since the number of phone lines exceeds the 1,000 lines in the existing tariffs. Finally, the GSA could have competitively bid the service when the first CLEC obtained certification from the GPUC in 2008.

2. **Government/Business Telephone Services**

The data in Appendix A includes a significant number of "Government" or "Business" Telephone Services. These lines are specifically listed in Appendix C.

A very preliminary review of a few of the lines initially led to the initial belief that these services are no different than the Centrex service lines, except that the feature levels may be slightly different and/or are grouped differently under the tariffs as "Government Telephone Services."[18] However, it is also possible

[17] There are more "line" numbers that are associated with the Centrex service that has no charge. The 1,686 count represents only those lines where there is an associated charge for the month. The data showed more line numbers with no charges.

[18] Mary Mendiola called several "Government Telephone" users to determine the type of phone and service. The calls initially led to the belief that the Government Telephones were Centrex service users. The issue on services cannot be pursued further until data from GTA is provided on the tariff charges per line.

that these lines could be also provided under Section 2 LOCAL EXCHANGE SERVICE of the GTA GET No. 1.

Section 2 of the GTA GET No.1 identifies the service area but does not define the nature of the service provided. The description in Section 2 states only the following:

"II. APPLICATION OF RATES

A> The rates and charges listed in this section apply to the Local Exchange Service divided by GTA in its authorized service area.

B> The telecommunications services described in this section are subject to other rates, charges, rules and regulations of the General Exchange Tariff in its current form or as it may be revised in the future.

C> The Local Exchange Service rates and charges specified in this section are for basic local exchange service and facilities only except as noted in ILE below. The rates for other ancillary services or facilities not specifically shown in this section are presented in other sections of this tariff.

D> Unless otherwise specified, the rates and charges quoted in this section are for a minimum period of one month, payable in advance and provide unlimited flat rate calling within the exchange area.

E> Trunks are required for local access connections terminating in, or for use with, customer-provided premises equipment with switching capability (Private Branch Exchange or PBX).

F> Effective July 1, 1994, ownership of telephone sets previously furnished and maintained by GTA for our straight line customers shall be transferred to the customers, we shall be responsible for the repair and maintenance of telephone sets connected with GTA's local exchange lines.

III. SCHEDULE OF RATES AND CHARGES

A> Residence Monthly Local Exchange Access Line Rates

	Basic
All Exchanges	$14.00 per line

B> Business Monthly Local Exchange Access Line Rates: All Exchanges

Basic 1-Line	**Key System Line**	**PBX Trunk**	**DID/DOD Trunk**
$36.00	**$36.00**	**$49.00**	**$49.00"**

C. Individual Case Basis (ICB) Arrangements

1. Arrangements will be developed on a case-by-case basis in response to a bona fide request from a Customer or prospective Customer to develop a competitive bid for a service offered under this Tariff. Rates quoted in response to such competitive request may be different from those specified for such services in this Tariff. ICB

> rates will be offered to the customer in writing and on a nondiscriminatory basis:
>
> (a) ICBs will be offered only to business or government customers having all ordering more than 10 Access line;
>
> (b) Rates for services provided under competitive bids shall not exceed the tariff prices were specific charges are provided in the tariff;
>
> (c) The ICB prices contained in any contract should be available to any similarly situated customer."[19] [Bold added for emphasis]

There is *no description of the service* other than what has been described. Since the Section 2 or of GTA's General Exchange Tariff No. 1 (GET No.1) states that: "The Local Exchange Service rates and charges specified in this section are for basic local exchange service and facilities only … The rates for other ancillary services or facilities not specifically shown in this section are presented in other sections of this tariff." The reference to other charges makes it impossible to know what other MRCs are charged together with this service.

Section 2 of the GTA General Exchange Tariff No. 1 does not appear to include single or multi-line phones. If indeed the Government and Business service charges are based on Section 2 of the GTA GET No.1, then, there an even larger problem in assessing the nature of the user service and costs in Appendix C since Section 2, Local Exchange Service, of the GET No. 1 contains no description of service.

In summary, the nature of the charges cannot be analyzed since there is no descriptive information of the charges and also no information of how the charges are applied. GovGuam may be overbilled in these charges, but GovGuam would also be in a difficult position to internally review and/or audit these charges without a better description in the tariffs. Finally, the charges may include actual Customer Premises Equipment (CPE) such as a key system or a PBX. If that is true, then, there may be other serious procurement or tariff issues if such charges are reflected in the regulated revenues without a tariff and/or ICB filing or if the CPE was not competitively procured.

Nature of Competition – There are four local exchange carriers in Guam: GTA, IT&E, PDS, and MCV.

Number of Line Charges - There are 658 discrete "line" charges for these services for the month of November.

GTA Charges - The charges to the line number range from $.27 a month to a high of $2,926.97 a month. 146 "lines" have no charge or some form of a credit (i.e., negative number). The average cost of these services is $53.15 a month. The monthly recurring cost to GovGuam is about $34,878 or $418,488 a year.

[19] GTA General Exchange Tariff No. 1, Section 2, pages 2-4.

Most of the charges to the various line numbers are within the Monthly Recurring Charge (MRC) range of $46 to $56. However, one line has a cost of $926 for the month of November.

Without the tariff cross-reference information, it is not possible to determine what is included in the invoice for the service, what is included in the service, whether the charges are appropriate, and why the variance in the prices appear, especially the outlier charge of $926.

Notes - The GTA provides Plain Old Telephone Services (POTS) through GTA General Exchange Tariff 2 – Local Exchange Services and Centrex Services through Tariff 6 – Enhanced Central Office Based Services. The average Government Telephone line cost is high in comparison to other competitive markets. Since deregulation of telecommunications, the cost of service to customers has significantly declined for large organizations as Competitive Local Exchange, mobile telephone, and cable telephone services have emerged to provide competitive services.

The variation in the costs will be most likely explained largely by the treatment of the GovGuam agencies as independent organizations rather than a part of the GovGuam. Thus, smaller offices that receive bills will be charged higher prices since the "GovGuam" is not treated as a single large customer.

It is not clear given U.S. and Guam laws why these services were not bid earlier. It is also not clear why certain services may be called business services v. government services v. Centrex services.

3. **Government Hosted PBX**

The data in Appendix D shows that one government agency, the Department of Parks and Recreation, is being billed for a "Government Hosted PBX" service.

A Private Branch Exchange (PBX) system is usually a telephone switch that is located in a customer premise. The PBX may be purchased and owned by the customer, leased, and/or provided by a private company as a service. It is not a regulated service. PBX systems are used by organizations because they are normally feature rich systems and are often lower in cost than purchasing a service from an ILEC or CLEC. To interface a PBX system to a CO requires regulated services.

To meet the competition for PBX systems, many carriers are offering "feature rich systems" that may or may not require providing a switch at a customer location. Today, many of these carriers are providing the service using Voice Over IP (Internet Protocol) or "VOIP" technology.

The Parks and Recreation Department of GovGuam uses the "Government Hosted PBX" service of the GTA.

Nature of Competition – There are four local exchange carriers in Guam that could provide these types of hosted service: GTA, IT&E, PDS, and MCV. Addi-

tionally, a non-carrier could potentially provide the service through purchasing trunks, providing a PBX system and providing support services.

Number of Lines - There are 24 lines that are being charged to the GovGuam agency.

GTA Charges - There are two basic charges: $20 and $31 a month.

Notes - The lower cost per line over the Centrex and Government services is reasonable since PBX systems are generally lower in price than Centrex services. However, if the service is being offered through VOIP and/or through an on-premise PBX system provided by the carrier, then, the service will be subject to problems with power outages, unless the agency has separate power generators and the service has sufficient battery backup so ensure that there is sufficient time for the generator to be activated.

Procurement - At the time of finalizing the Assessment, information was not available on whether this service was acquired through a competitive procurement. Irrespective of whether the service is regulated or unregulated, it is subject to competitive procurement laws of GovGuam and warrants further review.

C. Digital Data Services

There are three major digital data related services that are provided by the GTA. The services include:

- Government ISDN Services
- Government Ethernet Transport Service
- Government High Capacity Data

4. Integrated Services Digital Networking

Appendix E shows that GovGuam is subscribing to a "Government ISDN PRI Service" and a "Government ISDN BRI Service."

The ISDN services have been acquired on a non-bid basis from the GTA.

Section 5 of GTA General Exchange Tariff 1 describes the ISDN service as follows:

"Digital (ISDN) Single Line Service is a local exchange telecommunication service available only to customers served from suitably equipped central offices where operating conditions permit. Digital (ISDN) Single Line service is based on Integrated Services Digital Networking technology. It is a central office based service arrangement which consists of host central office interface equipment and software located on Company premises. This service provides local exchange access, interexchange access, and features."[20]

The rate for the ISDN service, according to the Section 5 of the GTA General Exchange Tariff, follows:

[20] GTA General Exchange Tariff No. 1, Section 5, p 59.

"

	Monthly Rate	Nonrecurring Charge
Basic Rate Interface		
Residential	$69.00	$98.00
Business	$96.00	$192.00
Primary Rate Interface	$600.00	$1,200.00"[21]

Integrated Services Digital Networking (ISDN) is a service which is used primarily for interconnection between Central Office (CO) systems and PBX systems for voice telecommunications or for dial-up video teleconferencing.

ISDN for Voice Telecommunications - ISDN is used between a PBX at a customer location and the Central Office. The ISDN channels carry voice telecommunications.

The CO will pass a Direct Inward Dial (DID) phone call and calling party identification to the PBX system over the ISDN signaling trunk (D or "Data" channel). The PRI is a standard interface for all PBX systems and enables the sharing of the voice trunks ("B" or Bearer channels) for both DID and Direct Outward Dial (DOD) calls.

Video Teleconferencing (VTC) - The ISDN enables devices such as video teleconferencing systems to temporary establish a dedicated data connection. The VTC units may dial up any VTC unit in the world that supports ISDN.

Utilizing ISDN for VTC enables dedicated capacity between the two systems for the time that the systems are interconnected.

ISDN for VTC usage has been supplanted by the Internet Protocol (IP). Large organizations may still retain a PRI but will have probably implemented technologies that enable a conversion of VTC IP to ISDN.

Technical Standards and Tariffs

The ISDN service is usually provisioned as a Primary Rate Interface (PRI) or as a Basic Rate Interface (BRI). Each PRI consists of 23 64 Kbps "B" digital data channels and 1 64 Kbps "D" channel used for signaling. Each BRI contains a 2 x 64 Kbps "B" channels or a total of 128 Kbps and a 16 Kbps "D" channel for signaling. The primary advantage of these channels is that whatever the total number of 64 Kbps channels are dedicated for temporary use, it is solely to be used by the application. In other words, it is a dedicated high-speed digital dial up link.

The BRIs and PRIs can be bonded together by data communication technologies to provide for larger capacity than a single PRI or BRI.

Nature of Competition – There are four local exchange carriers in Guam that could provide this service: GTA, IT&E, PDS, and MCV. GTA and PDS are providing that service today. IT&E and MCV would need to have co-location and interconnection facilities to the COs to provide the service.

[21] GTA General Exchange Tariff No. 1, Section 5, p 65.

Number of Lines - There are 18 PRIs and 3 BRIs in use by the GovGuam.

GTA Charges - The charges for the PRIs range from $1,266.66 to $662.55. Eight of the services are grouped at a cost of $703.82. The cost of the service averages $771 per month. The BRIs are at a constant price of $109.97.

The difference between the tariff rate and the actual cost for the ISDN service will not be clear until the GTA provides the information based on the tariffs.

5. **Government Ethernet Transport Service**

The Government of Guam bases the "Government of Guam Wide Area Network (GGWAN) on the Metro Ethernet Transport Service (ETS) of the GTA. Appendix F shows the GGWAN "Metro Ethernet" based services being provided to GovGuam.

Section 7 of the GTA General Exchange Tariff #1 defines the "Metro Ethernet Transport Services (ETS) as follows:

"Ethernet Transport Service (ETS) is a high speed data transport service that provides end-to-end transmission using Ethernet transport technology at transport speeds ranging from 5 Mbps to 1 Gbps, where available. ETS is ideal for broadband multimedia traffic (voice, data, video) using variable length Ethernet packets with the ability to connect multiple locations using GTA's network. Ethernet packets are generated by Ethernet compatible customer premises equipment (CPE) are transmitted using available shared transmission paths using GTA's network to a pre-specified destination. The ETS customer may use ETS to: (1) interconnect customer designated premises (CDP) served by GTA's ETS point-to-point network and/or (2) interconnect with the Local Area Network (LAN) to GTA's ETS point-to-point network." [22] [Underscore added for emphasis]

There is no guarantee that the point-to-point interconnects will be dedicated to the customer because of the shared equipment and network paths used within the GTA data network. GTA makes a specific point of stating the limitations in the network service by stating in its tariff that:

"The transmission quality of ETS is not guaranteed and is offered to ETS Customers at the best effort level. GTA's ETS Point-to-Point network will attempt to deliver all packets received; however, network congestion may result in a loss of Ethernet packets. Transmission speeds may be affected by facilities and distance from GTA's Central Office (CO) and other technical limitations in the GTA network and are not guaranteed." [23] [Underscored for emphasis]

[22] GTA General Exchange Tariff No. 1, Section 7, p 85.

[23] GTA General Exchange Tariff No. 1, S, February 2011, Section 7, p 85.

The cost of the Ethernet service is provided through an Individual Case Basis Tariff in accordance with Section 7 of the GTA General Exchange Tariff 1.[24] No rates for any speed of service are specified.

In 2007, the General Services Agency issued an Invitation for Bid for Ethernet Transport Services. Two companies responded to the IFB: GTA and IT&E.[25] The bid expired on October 2, 2010 and has not yet been rebid.

The GSA award provides for the following prices:

- Installation of the 5 Mbps service at $1,500
- A MRC of $800 a month
- A Managed Network Management Services at $188 a month with a $495 initial installation fee.

There does not appear to be ICB tariffs filed with the Guam Public Utilities Commission for these services.[26] Further, the tariff does not appear to even include an ICB for a 5 Mbps ICB-based service. The issue of whether ICB tariffs have been filed with the GPUC must be further examined. Finally, although the GTA bid this service in November 2007 and started provisioning the service in 2008, it appears that the GTA did not have GPUC regulatory authority to provide ICB arrangements until December 2008.[27]

Nature of Competition – There are four local exchange carriers in Guam: GTA, IT&E, PDS, and MCV.

IT&E, MCV, and PDS do not have tariffs for these services since CLECs are not required by the GPUC to file data tariffs, but could provide the service.

Since the digital data services often do not require an interface with CO switches, the service could possibly be provided by non-carriers that might simply install and manage the capability for the GovGuam (e.g. point to point microwave). ISPs for the Guam Department of Education, for example, also do not have to be telecommunication carriers and are not subject to the USAC fees when providing these types of service.

Number of Services - There are 46 Ethernet Transport Services charges.

GTA Charges - The charges for the Government Ethernet are range from $988 to $3,558 for the connection. The MRC for all the circuits is $53.998 for the month of November 2010. The annual cost of this service is estimated at $647,976 a year.

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[24] GTA General Exchange Tariff No. 1, Section 7, p 97. The service is provided as an Individual Case Basis (ICB) Tariff.

[25] According to John Cruikshank of the MCV and John Day of the PDS, they were not aware of the IFB. To confirm that there was only two Bidders, a request for information was been submitted to the GSA. The GSA confirmed that only two bidders responded – GTA and IT&E.

[26] The Bureau of Information Technology requested a copy of all ICBs from the Guam PUC. The GPUC responded promptly to the request for information. Based on the information provided, there was no ICB filed for the Metro Ethernet Services. A follow up request and petition is being submitted to the GPUC to determine whether an ICB for the Ethernet Transport Services were filed as an ICB by the GTA.

[27] GPUC Docket GTA 11-04 Report of ALJ for Rehearing/Discussion.

Notes – First, Appendix F shows the cost to GovGuam for these services. It is noteworthy to point out that some of the charges to the GovGuam appear to be inconsistent with the IFB award (Appendix N). This may be due to a lack of clarity in the IFB or an overcharge.

Second, the ETS is provisioned on an Individual Case Basis (ICB) tariff.[28] There is a need to verify that the GTA authority to offer these services and if the services are provisioned based on valid ICBs; and whether the GovGuam received the best prices due to the number of services purchased. These important contract and contract administration issues will not be discussed further at this time.

Third, the GTA ETS tariff, as described above, does not guarantee throughput on the service and rather explicitly avoids any industry standard "Service Level" or "Quality of Service" guarantees. When combined with the "Managed Router" service, the GovGuam does not even monitor or measure response times, capacity throughput, or dropped packets.

In contrast, MCV has been providing a dedicated fiber based ATM service of 135 Mbps with most GDOE schools on two rings. The price per nodal connection is $500 a month. The GovGuam has paid more for its services and have less capacity.

6. **Government High Cap Circuits**

Appendix G shows the "Government High Cap" services used by the GovGuam. Others are labeled as "Business High Cap Circuit." Still others are listed as multi-year contracts.

The data services provided by GTA are described in Section 7 of the General Exchange Tariff No 1. The Table of Contents of Section 7 states that "High Capacity" circuits are on page 47. The first channel termination circuit is described as a T1.

The GTA tariff defines high capacity as follows:

"High Capacity – a channel for the transmission of isochronous serial digital data at rates of 1.544, 3.152, 6.312, 44,735, or 274,176 Mbps."[29]

Typically, "high capacity circuits" normally refer to point-to-point dedicated digital circuits.

A T1 service, for example, is normally a dedicated 1.5 Mbps circuit between two locations. High capacity circuits can include very high capacity links. The GTA tariffs describe Synchronous Optical Networking (SONET) links of up to OC 12 (622.08 Mbps). These services are provided through an ICB.

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[28] See Section 7 of the GTA General Exchange Tariff No. 1. All pricing for ETS services are designated as "ICB." Further, there is no reference to a 5 Mbps rate in the tariff.

[29] GTA General Exchange Tariff No. 1, Section 7 Special Access Service, p. 6.

The cost of these circuits to GovGuam can be some of the most complex to calculate since the circuits are normally based on three major tariffed factors: distance, the number of COs that may be involved to make the dedicated connection, the capacity required, and the tail circuit that actually connects the site to the CO. As such, there are several rate elements that must be calculated.

Nature of Competition – There are two primary local exchange carriers (GTA and PDS) that are able to provide "high capacity" service. The other two CLECs (MCV and IT&E) could also provide the service. The MCV could provide dedicated digital capacity over its cable modem technologies since there are technologies that can use IP as a core transport but make the service interface as a T1.

Number of Services - There are 27 Government HC capacity services that are in use. There are three T1s which are described as multi-year agreements.

GTA Charges - The MRC charges for the Government High Cap circuits are a total of $17,935 a month or about $215,000 annually.

HC by GovGuam – GTA may be reflecting the cost of Internet Access in the High Capacity charge area. So, the number of tariff based HC circuits could be significantly less. The final amount will not be determined until the GTA provides the other tariff related costs.

Notes – The "High-Capacity" circuits need to be evaluated by the BIT since the core GGWAN is currently using the Metro Ethernet services. There is a question as to whether HC circuits are needed if there are higher speed "Metro Ethernet" connections in place.

The High-Capacity circuits do actually include Internet Access services. According to a Department of Administration (DOA) IT specialist, some of the High-Cap services reflected in the data provided by the GTA are the Internet services.

The Internet capacity was bid and awarded by the GSA at 512 Kbps and 1.544 Mbps.[30] Since there are references to 512 Kbps and 1.544 Mbps, GTA may have listed the Internet Access capacity as HC.[31]

If this is correct, then, there is a gap between how the service was defined, bid, and administered.

The GTA data received by the BIT and sent to the UH on May 8, 2011 confirms that Internet Access services are included in the "High Capacity" services of the GTA.

[30] GSA-032-07 awarded by GSA on October 2, 1007 for a 3 year term.

[31] During separate meetings with Jim Lacson and Benigno Camacho, it was stated that the Internet capacity for the sites that are connected through the GGWAN are using the Internet Access that is originating from the DOA Data Center. According to both Jim Lacson and Benigno Camacho, there is about 12 Mbps of Internet Access from the Data Center. The problem is that nowhere in the GTA supplied information does it state that the cost is for Internet access. A cross-check of the HC capacity costs by Benigno Camacho suggests that at least one cost that matched the GSA Price List for T1 Internet Access.

The data provided was very helpful, although there remains questions which cannot be resolved without additional information provided by the GTA (e.g., whether the bid proposal in 2007 included or did not include Gross Receipts Tax, and/or enabled the Internet circuits to be provisioned as general Internet access links). Since the procurements did not require any reporting of the circuit information or bills, it is not possible to determine the type of circuit that is being used without a substantial effort by the Guam Data Center (GDC) personnel.

There is one government agency that is being charged $10.35 a month for a dial up circuit. It is not certain why a dial-up circuit is still needed by the Customs and Quarantine office.

D. Internet Services

Internet services are provisioned in two ways by GovGuam. First, Internet Access services are provisioned out of the Guam Data Center of the Department of Administration based on an aggregation of 512 Kbps and 1.5 Mbps Internet Services that were bid by the GSA in 2007. The number and amount of services that have been provisioned cannot be determined without additional information from GTA or extensive work by the telecommunications project manager. This issue has already been discussed above in the High Capacity section of this report.

The second way in which Internet services are provisioned is through the DSL service established by the GSA in 2007. Appendix H shows that GovGuam is using over 90 separate "Spyder" Internet services provisioned by the GTA. A main difference between the two types of service is that the Spyder service is asymmetric while the aggregated service is symmetrical, although the IFB issued in 2007 did not describe the nature of the asymmetrical connections.

Internet services are not regulated by the FCC or GPUC and were procured through an IFB. The Appendix H further suggests that Internet services are currently decentralized in the Government of Guam. The Spyder service was acquired through a competitive procurement in 2007. The rates established by the GSA contract are from Appendix L (GSA BID NO. GSA-032-07). Table 1, below, shows the capacity and rates from the IFB.

Table 1 - Internet Access Services

	One-Time Charge	MRC
512 Kbps	0	$ 349.00
1.5 Mbps	0	$ 449.00
1.2 DSL Service	59.95	$ 39.95
2.5 Mbps	59.95	$ 67.45
3.5 Mbps	59.95	$ 98.80

The bid award document of the GSA does not specify or reference any Service Level Agreement (latency, number of hops, testable capacity). Further, it did not include any requirement for a monitoring tool and access to be provided so that the capacity could be monitored and/or tested. These are essential

for a data center to ensure that capacity is available. Without an SLA and/or QoS requirements, the only guarantee of capacity is between the site and the CO office.

The data from Appendix H and GSA BID NO. GSA-032-07 shows some inconsistency in the contract pricing for the service and what is being charged to the GovGuam agencies. The inconsistency would suggest a need to examine how the service is being provisioned and charged. If it is confirmed that the broadband service is actually provisioned from separate High Capacity circuits, then, a question may arise as to the "parceling" of telecommunication services. A second issue that may arise is whether Internet Access circuits funded through federal programs such as the Rural Health Care Program (RHCP) of the Federal Communications Commission may be inappropriately being used by all government agencies. The full nature of the service and associated issues cannot be examined until the data is provided by GTA.

Nature of Service and Provisioning – The Spyder service is provisioned through Digital Subscriber Line (DSL) technology. DSL technologies use the existing copper wiring of the telephone companies and the use of the copper lines is an industry standard method of provisioning Internet services. MCV provides Internet access through coaxial cable television cables. PDS provides DSL services as a CLEC with the same use of the dry copper and its co-location in the COs. In order words, there is no difference between the service provided by GTA and PDS. The service is identical to the service provided by the GTA. IT&E could provide these services as a CLEC and/or through wireless access. Docomo can also provide the service as a CLEC, and does.

Nature of Competition – Internet services are not regulated and may be offered by any company. The major competitors for Internet services, however, will be the carriers that purchase and maintain off-island Internet capacity. The major carriers include GTA, MCV, IT&E, and PDS. Docomo also provides DSL services used by GovGuam.

Number of Services – There are 96 separate charges for Spyder Internet as shown in Appendix H. There are also other Internet services that are provisioned out of the GovGuam Data Center (GGDC) that are in the "High Capacity" category (Appendix G1).

GTA Charges - The charges for the Spyder service range from $10.35 a month to a high of $465.76 a month. 3 were listed with no charge. The total cost for the month of November was $9,770 or an overage of $101 per billed line during the month of November.

The charges for Internet services that are in the HC category cannot be determined at this timed.

Notes – There is very little difference between the underlying technology used by the Spyder Internet and Metro Ethernet service. Both Spyder and Metro Ethernet use the same Ethernet and Internet Protocol based on the underlying Ethernet IEEE 802.3 standards. The difference with the Spyder service is that the data is allowed to access the Internet access service of the Provider and are asymmetric, while the Ethernet service is symmetrical.

Since the underlying transport technology is the same, there remains a major challenge with Internet protocol is it is difficult to predict the actual capacity that a customer will receive since the link is not a dedicated circuit.

This is the same issue that the GTA described with the "Ethernet" data service. The "IP" (Internet Protocol) protocol and its provisioning over Ethernet are very efficient for enabling many connections over the same transport media and service. However, while the protocol optimizes on the shared capacity, it makes it difficult, as noted in the service description of the ETS tariff, to guarantee a level or Quality of Service (QoS) since users are sharing common transmission media and router and switching technologies.

Further, the service only provides for a relative guarantee of data transmission capacity between the site and the carrier. This means that, for example, a customer site may have a 5 Mbps Spyder link; but, that 5 Mbps link is only between the customer *site* and the *Internet Service Provider* (ISP). There is absolutely no guarantee that the carrier will be able to transfer 5 Mbps of data to another site through the Internet since the ISP then needs to pass the traffic through a number of other "upstream" Internet Service and telecommunications providers that must also route the traffic to the destination. So, an ISP can provide a 5 Mbps Internet link, but, may only have 1 Mbps off-island.

While this is an extreme case and provided largely for illustrative purposes, it is important to highlight since merely bidding of a service may not result in any effectiveness/cost result. As an unregulated service, there are no standards or regulation governing the advertised v. actual capacity a customer receives. The customer is responsible for its own network planning service delivery.

What this means is that the service should include a Quality of Service (QoS) or Service Level Agreement (SLA).

Further, once the customer site data arrives at the carrier, it is then transported with the data from other customers. This means that the capacity is shared and not available to carry all of the data from the customer if there is other data. This inhibits the throughput of the data and when the amount of data overwhelms the capacity of the transport, it is generally referred to as "congestion."

Finally, even if a request, for example, for a web page gets to the destination quickly, there could be delays (processing time) at a destination server before the information will be sent back to the requestor. This presents some challenges for GovGuam.

The reason why some of these considerations are raised is that any procurement for Internet access services should not merely be for a "last mile" capacity link.

An IFB must require a QoS through a "Service Level Agreement" and have the means to monitor and enforce the service agreement.

Guam is a major submarine fiber optics cable hub in the Pacific region. While this provides for a great opportunity to obtain Internet access at reasonable rates, the requirements for a service level agreement must be specified in advance.

The GDOE procured Internet access services 2003. In 2007, the GDOE issued a 3-year bid, for 2007-2010. The GDOE IFB resulted in an award of 20 Mbps for $6,000 a month or 1 Mbps of

Internet Access for $300 a month ($6000/20 Mbps = $300 1 Mbps).[32] During this period (2007-2010), the price paid by GovGuam and GDOE is virtually the same.

However, in its most recent price bid for the Guam Department of Education (GDOE) 2011 IFB solicitation for telecommunication services, GTA provided a tiered pricing response, as required in the GDOE IFB, which will provide considerable savings to the GDOE.

The price bid the GTA in the 2011 GDOE IFB follows:

- If capacity purchased is 1 to 25 Mbps, the price is $70 a month per 1 Mbps.
- If capacity is purchase is 26 to 50 Mbps, the price is $65 a month per 1 Mbps.
- If capacity is purchase is 51 to 75 Mbps, the price is $60 per month per 1 Mbps.
- If capacity is purchase is 76 to 100 Mbps, the price is $55 per month per 1 Mbps.

Based on the above pricing, the 20 Mbps of service will be $1,400 a month, significantly less than the $6,000 a month that both GovGuam and GDOE are currently paying.

The data also reveals the issue of consistency between the invoices and the IFB award, and the arrangements which may have been made to aggregate the service. The aggregation of the service means that the GSA bid was for one service but may have been for a different service. This is not necessarily a major issue, however, the aggregation of the Internet circuit may create a problem if funding from the Rural Health Care Program was used.[33]

E. Mobile Telephone Services

Appendix I shows that the GovGuam has close to 87 mobile telephone service accounts that were billed during the month of November. These are designated as "GSM" in the description of services in the GTA data table. There are references to a "Government" and "Business" plans in the GTA billing. While the title of the service is labeled as "Government GSM Service," it is not known how these prices are structured or whether these services were competitively bid.

GSM stands for "Global System for Mobile Communications" and is the dominant world standard for mobile telecommunications. The compatibility of the GSM systems enables "roaming" to occur when mobile phone customers are outside of Guam. Guam roaming within the U.S. is at a separate cost, while roaming by other mobile providers are generally at no additional cost within the states, including Hawaii.

Nature of Competition - Mobile telephone services are offered on Guam by GTA, IT&E, iConnect, and Docomo Pacific.

Number of Services – There were 87 separate charges for this service for GTA. 4 "lines" were not billed. There are a few services provided by the other carriers.

GTA Charges - The charges for the mobile phone range from $12.95 a month to a high of $385.25 a month. The Director of Administration has a service with a notation of 15,000 minutes. It is not certain whether those minutes are for a month or a year. 15,000 minutes

[32] The bid for Internet services issued by the GDOE occurred in the same year as the IFB for Internet access services for GovGuam.

[33] The Federal Communications Commission (FCC) passed a special rule for "entirely rural" states in 2004 in WC Docket No. 02-60. The rule provides for health care providers to receive a 50% discount off for advanced telecommunication services. However, the Rural Health Care Division (RHCD) which administers the program is very strict with requiring the use of the circuit only by the eligible health care providers. The rules are similarly very restrictive in the Erate program that the GDOE participates in.

translates into 250 hours. It could be a corporate account with 15 different users with 1,000 minutes each or 10 users with 1,500 minutes each.

The Guam Legislature has routinely passed budget laws that restrict the use of mobile phones. There are a number of exceptions for the mobile phones and there is an exemption when the phones are paid for through federal funds or other grants. The application of the law is not discussed further here, but raises some issues for certain agencies which are not exempted under the appropriations laws.

F. Television Services

Appendix J shows that there are 10 television services that have been acquired by the GovGuam.

Television services are primarily offered by the MCV and the GTA. The provisioning of these services is not regulated in general. Television can be delivered by coaxial cable, DSL by the ILEC, and/or direct satellite. The MCV is the dominant television carrier on Guam. However, the television services used by the GovGuam are delivered primarily by the GTA.

Nature of Competition – There are two dominant providers of television services in Guam: MCV and GTA.

Number of Services - There are 10 television service account reflected in the GTA database. MCV has approximately 19 active accounts with television service, although most are not with the Executive Branch of GovGuam.

GTA Charges - The total cost for the month of November for the GTA service was $1,010 or an average of $100 per billed service during the month of November.

V. Comparative Pricing Analysis

The Guam Department of Education (GDOE) issued an Invitation for Bids for telecommunication services, Internet Access, network equipment, and maintenance in accordance with the Education Rate (Erate) program of the Federal Communications Commission. The Erate program is administered by the Schools and Libraries Division (SLD) of the Universal Service Administrative Company (USAC). The USAC administers the "universal service" programs of the FCC. All telecommunication carriers are aware of the USAC since all carriers have some relationship with the USAC.

The GDOE receives discounts on telecommunication services based on the percentage of students that qualify for the school lunch and other federal programs. The GDOE initiated their most recent bid for services with the assistance of the Bureau of Information Technology.

The GDOE provides a useful reference for analyzing the relative cost for telecommunication services used by the Government of Guam.

The competitive procurement issued by the GDOE resulted in the following prices for various services:

Plain Old Telephone Services (POTS) Per Line MRC	$33.45
Centrex line with Features Per Line MRC	$15.60 or 26.17[34]
FAX Line Per Line MRC	$33.45

[34] There is an issue as to the pricing that was proposed by the GTA. See discussion at Footnotes 26 and 27. The Guam PUC initially approved the tariff at the rate of $15.60 but subsequently ruled that the GTA must charge for SLC and USF costs. The addition of these cost increases the rate to $26.17.

911/E911 for all DOE	$25.00
ISDN PRI Per Line MRC	$427.00
Internet Broadband for 100 Mbps	$5,500.00
1 Gbps (1000 Mbps) for WAN MRC per school Dedicated capacity for school system.	$775.00

A. Centrex and "Government Telephone" Lines (Non-Bid)

The GovGuam has not completed a government-wide bid for telephone services and is currently paying around $52 a month for each "Government Telephone" and "Centrex" telephone line. The high rates are a direct consequence of the non-bid use of GTA tariffs and the practice of the General Service Agency (GSA) that has enabled the GTA to treat GovGuam agencies as separate customers rather than as a part of a single customer, the Executive Branch of the Government of Guam.

The GTA tariffs enable discounted pricing when customers have a large number of phones. However, the GSA has not pursued such discounts throughout the years. The GSA interpretation means that the GovGuam, as a single entity, does not and will not receive the best prices under the GTA tariffs. A rationale for a central procurement agency not to have pursued the larger discounts based on the number of lines cannot be identified, except that it has been the practice of the GSA.

In contrast, in a competitive procurement of telephones, the GDOE received a bid from GTA of $15.60 for a Centrex line with features and $33.45 for a POTs line (See Figure 1, below).

Figure 1 - Bid Form 1B Submitted by the Teleguam Holdings, LLC.

Addendum 1 - Bid Form
DOE IFB 020-2001

GDOE E-Rate Network (GNET) 201
3/30/201

PART 1B - POTS and Centrex Features

Bidder: TELEGUAM HOLDINGS, LLC		SPIN: 143002715
Description of Option Line Option A = Basic POTS Line Option B = Centrex Features Phone		
	Type	
Pricing Elements	POTS	Feature Phone
Basic Line Rate	$ 22.00	$ 15.00
SMS Feature	Not available	Not available
Data Feature	Not available	Not available
Universal Service Fee	$ 1.37	$ -
Unlimited Plan	Loal calls included	local calls included
Subscribied Line Charge	$ 9.20	Not required
911/E911	Not required	Not required
General Excise Tax	$ 0.88	$ 0.60
Total Rate Per Line Option	$ 33.45	$ 15.60

The GDOE price for the POTS and Centrex lines are inclusive of all surcharges, including the internal maintenance of the copper wiring, Subscriber Line Charges (SLC), Universal Service Fees (USF), Local Number Portability (LNP), and Gross Receipts Tax (GRT). Form 1B shows that the SLC is "Not Required" and there is no cost included for USF since the USF is based on the SLC charge.

A second bid form was included. This Bid Form shows a SLC and USF charge. The addition of the amounts showed a rate of $26.17 but did not include a bid price for POTS.

Figure 2 – GDOE Bid Form 1 Bid with SLC and UFC Charges but no POTS

Addend Bid Form
DOE IFB 2001

GDOE E-Rate Network ") 2011
16/2011

Amendment No. 2 Bid Form

PART 1 Bid Form - Telephone Services

A	B	C	D	E	F	G	H	I	J
School District Provided Information	**Bidder: TELEGUAM HOLDINGS, LLC**			**SPIN: 143002715**					
Service	**Activation/ Service Charge**	**MRC for Existing Lines**	**Installation of New Lines**	**MRC for New Lines**	**Other Charge (FUSF)**	**Other Charge (Subscriber Line Charge)**	**Other Charge (911)**	**Other Charge (GROSS RECEIPT TAXES)**	**TOTAL MRC**
911/E911 Trunks/Lines	None	Not required	None	Not required	None	None	$ 25.00	NONE	$ 25.00
Alarm Telephone Line	$ 25.00	$ 22.00	$ 35.00	$ 18.00	$ 1.37	$ 9.20	Not required	$ 0.72	$ 29.29
Centrex	$ 25.00	$ 15.00	$ 35.00	$ 15.00	$ 1.37	$ 9.20	Not required	$ 0.60	$ 26.17
Custom Calling Services	NONE	NONE	$ 2.50	NONE	Not required	Not required	Not required	Not required	None
Directory Assistance Charges	NONE	$ 0.25	NONE	$ 0.25	Not required	Not required	Not required	Not required	$ 0.25

Note:

Activation Service Charge	One Time charge that applies when there is a add/change/delete to a service. This fee also applies if service is reconnected after disconnection.
MRC for Existing Lines	Monthly recurring charge that are billed for each active line/service. Subject to Federal FUSF and SLC and Local 911 and GRT surcharges
Installation	One time charge that applies whenever a new line is added to a location. Subject to facility availability.
MRC for New Lines	Monthly recurring charge that are billed for each active line/service. Subject to Federal FUSF and SLC and Local 911 and GRT surcharges
Federal Universal Service Fund Assessment (FUSF)	Surcharge for applicable services to cover federal mandated contributions to the Universal Service Fund. Based on a current rate of 14.9% and is regulated to change by FCC. Historically FUSC surcharges changed quarterly as regulated by FCC.
Subsriber Line Charge (SLC)	Surcharge for applicable services to cover Subscriber Line Charge assessment (SLC).
911 Surcharge	Surcharge for 911 servcies. Assessed per telephone line ($1/per line per month). Maximum $25 per month per customer. Per P.L. 25-55 "911 Surcharge" up to a maximum of 25 lines per account bill rendered for local eachange service.
Gross Receipts Tax (GRT)	Surcharges for Guam tax which is assessed on applicable services. Current rate is 4%.

The GTA was asked to clarify the bid submitted and the GTA stated that the rate was $15.60. The GDOE then issued a Purchase Order (PO) in the amount of $15.60 and the PO was accepted by an officer of the GTA. To ensure that this rate was confirmed as inclusive of all applicable charges, the UH met with both the GDOE and the GTA. The GTA confirmed that the $15.60 rate was correct.[35] The GDOE reflected the rate in its application for Education Rate (Erate) funding under the Universal Service program of the Federal Communications Commission (FCC).

Following the granting of the ICB by the GPUC, PDS challenged the rate by filing a motion for reconsideration with the GPUC. The IT&E supported the filing by the PDS.

[35] The GTA initially stated that the rate was inclusive of all applicable charges. See Bid Form 1 (Appendix X). The Bid Form 1 is the Bid Form required by the GDOE in its IFB. The Bid Form 1 submitted by the GTA shows a proposed price for Centrex service of $15.60 has a basic service cost ($15.00) and GRT ($.60), but does not include a Subscriber Line Charge (SLC) and a Universal Service Fee (USF) charge. While this is very beneficial for the GDOE, the Pacific Data Systems has challenged the rate provided by the GTA to the GDOE.

This led the GPUC to hold a hearing on the request. In a response to the PDS complaint, the GTA asserted that the GDOE rate is actually $26.17 and that the SLC and USF charges do apply.[36] The GPUC, on May 18, 2011, resolved the issue by requiring the GTA to charge for the SLC and UFS charges.[37]

Irrespective of how this issue may ultimately be resolved by the GDOE, GTA and the GPUC, the GODE IFB rates enable a high-level comparison between the bid v. non-bid approach to purchasing telephone services.

Table 2, below, shows a rate comparison between the GDOE bid in 2011 and GSA non-bid rates.

Table 2 – Price Difference between Bid and Non-Bid Services

Government Entity	Year	Vendor	Method of Procurement	# of Bidders	Number of Phones	Price Per Telephone Based on Non-Bid and Bid
GSA/DOA IT	2007 to 2011	GTA	GSA Non-Bid Authorized Purchase	Non-Bid	2361	$ 52.00
GDOE/BIT IT	2011	GTA	Bid	2	500	$ 26.17
					% Reduction in Price	50%[38]

Table 2, uses the *higher bid number of $26.17*, as ordered by the Guam PUC and compares this price with the GSA approved **non-bid** for GovGuam telephone services. The comparison shows a difference of about a 50% reduction from the current prices of the Centrex service when compared to the price that GovGuam is paying. Given the number of lines that the GovGuam currently uses, the potential savings is significant and about $60,000 a month.

The IFB resulted in the same company, providing the same service that is being provided to GovGuam, uses the same telephones, and over the same telephone lines; but, **at a cost that is almost 50% less than what GovGuam is currently paying for non-bid services**.

There may be additional savings that could be achieved for both GDOE and GovGuam. The Centrex lines in the GDOE bid provide for basic analog phones. The analog lines will support fax services as well as the POTs line, and the government may not need an analog POTs line which is priced higher. If used in this manner, there may be a requirement for the user to dial a "9" through the facsimile machine before

[36] Following the approval of the ICB, the PDS challenged the rate. There are several arguments was made by the PDS. Two issues are important here. First, the PDS challenge a rate of $15.60 as inclusive of all charges. Specifically, the question was whether the GTA could offer a rate that did not include the SLC and USF charge.

The basis of the challenge by the PDS is that the GTA is pricing the service based on what may be a defective Long-Run Incremental Cost (LRIC) study. The PDS is requested the Guam Public Utilities Commission to rescind the approval of the Individual Case Basis (ICB) Tariff and enable the PDS to review the LRIC study.

Notwithstanding the issue of the LRIC in setting the base Monthly Recurring Charge for the service, the other major difference stems from non-charges of the Subscriber Line Charge (SLC) and the universal service charge which is based on the FCC rules.

[37] Order and Decision of the GPUC, May 18, 2011.

[38] The $52.00 cost is an estimate based on the data provided by the GTA. Tariff breakdowns of cost have not been provided by the GTA to the BIT or to the UH.

entering the telephone number, but the user will already be familiar with the requirement through use of the Centrex service and facsimile equipment can program a "9" into the dialing stream.

Finally, there is significant variation in the pricing of the service. The variation in the costs will be explained largely by the treatment of the GovGuam agencies as independent organizations rather than a part of the GovGuam. Thus, smaller offices that receive bills will be charged higher prices since the "GovGuam" are not given rates as a single large customer.

The GovGuam should have been receiving the best prices according to the tariff as a large organization or required a better rate through a competitive bid or ICB request. However, the GSA, as the central procurement agency of GovGuam, has not bid the service competitively and has permitted the GTA to charge the GovGuam as "separate" agencies rather than as a single Executive Branch customer. The GTA has benefitted from not providing the GovGuam a better discount; but, it is the responsibility of the central General Services Agency to ensure that GovGuam obtains the best deal under the Guam procurement code, the Telecommunications Act of 2004, rules of the Guam Public Utilities Commission, and tariffs which are filed by the telecommunication companies. Again, the case of the DOE is instructive of what happens when you issue competitive bids. The GTA won that IFB, but, it has reduced its price by 50% in order to win the bid.[39] Even though the price determined by the GPUC is the higher rate of $26.17, the percentage discount is about 50%.

G. ISDN Services (Non-Bid)

The GovGuam did not bid "ISDN PRI" or "ISDN BRI" circuits but did receive PRI bids for "video teleconferencing" services. The GovGuam has 18 PRIs and has been paying about $771 a month for these PRI circuits or over $166,000 a year. There are 3 BRIs.

In comparison, the 2011 GDOE bid for PRI circuits $427 a month in 2011. This is a single price with all of the services.

The difference between the two is significant and translates into 35% savings in price. For GovGuam, the savings would be realized through a competitive bid is about $74,000 a year, just for this service alone. Further, the billing for the service would be far less complex since there would be a single price for the service which is inclusive of any and all tariff surcharges. This will help to ensure that the service is easily auditable.

H. Ethernet Services

The current Government of Guam Wide Area Network or "GGWAN" is the Wide Area Network and is based on GTA provided "Ethernet" and High Capacity digital data services. The GDOE network is based on "Internet Protocol (IP) and ATM transport for its data capacity. The services are directly comparable to the ETS service of GTA.

The GSA received bids from GTA and IT&E for the Metro-Ethernet Services. It is not certain why MCV and PDS did not submit bids, especially since the MCV was already providing a like service to the GDOE. Representatives from the MCV and PDS said that they were unaware of the IFB. In any case, in large

[39] The Guam Public Utilities Commission determined that the Subscriber Line Charge (SLC) and Universal Service Fee (USF) should be applied to the rate. This effectively means that the cost to the GDOE will rise to $26.17. The rate, when applied to the GovGuam, will result in a savings of about 50%.

telecommunication bids, all potential bidders should be notified by the GSA since competition leads to improved pricing and services.

The difference in capacity and price between the GDOE and the GovGuam for WAN services is significant.

In addition, the GovGuam charges for the Ethernet services do not appear to be consistent with the award by the GSA. As noted earlier, it is not clear as to whether the 5 Mbps of Ethernet capacity is based on dedicated access through packet shaping technologies or whether the 5 Mbps was to a shared network connection. The reason why this is important is because if the main connection point is limited, there is no guarantee of throughput capacity for the data.

Since the GovGuam has been moving toward a centralized virtual server environment, where servers for all agencies are concentrated at a central site, this is extremely important since there may be data communication congestion bottlenecks in accessing the servers at the central site. The congestion would affect the services to the agency. Finally, it is not clear what "managed services" are included in the contract since apart from providing router equipment, response times for changes and specification and/or documentation of the routes are not explicitly a part of the IFB and bid responses.

Table 3 shows a useful and practical comparison of like capacity and price between GovGuam and GDOE network.

Table 3 – Comparison of GSA and GDOE IFBs for Ethernet Digital Data Capacity

Government Entity	Year	Vendor	Method of Procurement	# of Bidders	Capacity in Mbps	Price for Capacity	Price Per 1 Mbps
GSA IFB	2007	GTA	Bid	2	5	$ 800	$ 160.00
GDOE IFB	2007	MCV	Bid	2	135	$ 500	$ 3.70
GDOE IFB	2011	PDS	Bid	3	1000	$ 775	$ 0.78

Since 2001, the GDOE has had a 135 Mbps dedicated fiber link among its 40+ schools and administrative office sites. In accordance with a bid issued by the GDOE, each node was charged $500 a month for a 135 Mbps ATM (Asynchronous Transfer Mode) link that carried "Ethernet" but also enabled dedicated capacity to be established dynamically when needed.

A point could be made that 135 Mbps shared by 40 sites is only 3.3 Mbps per school site. However, the GDOE network was required to be configured into two separate self-healing rings. Thus, the network provides a 6.75 Mbps for each site and the network was 100% dedicated to the GDOE. Further, since the routers (Ethernet traffic) were configured to go through the fastest path, the links were double that in capacity.

The GovGuam network planner was advised by the GDOE and the University of Hawaii the pricing and relative effectiveness cost from the first contract in 2001. However, GovGuam elected to implement a different approach. When compared to an "Ethernet" circuit of 5 Mbps at $800 a month, the difference raises significant questions.

With the most recent contract award by the GDOE which provides 1 Gbps for $775, the value (capacity/ cost) ratio becomes immense, especially since the GovGuam has been implementing a virtualized

environment with central servers. In a central environment, the data communication speeds and capacity become extremely important to ensure quality service to the agencies.

The difference is shown in Table 4.

Table 4– WAN Comparison of WAN Capacity

Entity	Ethernet Capacity	Cost
Government of Guam	5 Mbps	$800
Guam Department of Education	1,000 Mbps	$775

I. High Capacity Circuits

The telecommunications manager for the GovGuam, when asked to explain the function of "High Capacity" services, stated that there are no T1s" in GovGuam.[40] This would make sense since the Ethernet services should replace the High Capacity T1s for interconnection. However, when asked to explain the "HC" circuits of the GTA, the manager replied that the agencies may not have cancelled the service or the HC circuits may actually be Internet Access circuits. The use of the HC circuits will need to be examined.[41] Based on the information provided, there does appear to be Internet services within the High Capacity category.

J. Mobile Telephone Services

The mobile phone services plans are not specified and require further clarification from the GTA. An IFB should be issued based on "corporate" or "family" plans which enable the mobile phone units to share minutes for off-net calling. The pooling of the minutes would enable better use of the minutes. Additionally, the GovGuam should require that "on-net" (mobile to mobile calls within the plan and within the service) not be charged. Finally, the GovGuam should include, as part of the IFB, the standard requirements for no charges for nights and weekends at no-cost.

K. Internet Services

There are two types of Internet services used by GovGuam. As shown in Appendix H, the GovGuam is currently being charged for a number of Internet Spyder services, based on the GSA price list issued in 2007. The second type of Internet service is a broadband link from the Guam Data Center for those users that are connected to the GGWAN (Appendix G1).

The data provided by the GTA does not show the cost the Internet services provisioned at the GovGuam Data Center to GTA. The reason, as noted earlier, is that the Internet services from the GDC are mixed in under the "High Cap" category of services.

While it is not possible to identify the specific costs, it is possible to compare the broadband Internet access between the GovGuam and the GDOE bids for 2007 and 2011.

[40] Interview with Benigno Camacho, April 8, 2011.

[41] Mary Mendiola of the BIT has requested information from the GTA regarding the nature of the High Capacity circuits. The data has not yet been provided by the GTA.

In 2007, the GDOE issued a bid for Internet services. The price Per 1 Mbps of service between the GovGuam and GDOE is about the same when compared with the 2007 GovGuam contract with the GTA.

In the recent 2011 bid award by the GDOE, however, there is a very significant price differential. The GDOE IFB contained 4 tiers of Internet access and directed the Bidders to provide a 1 Mbps price for these categories.

The Internet Access was won by the GTA at the following rates:

1 to 25 Mbps	$70.00 per 1 Mbps
26 to 50 Mbps	$65.00 per 1 Mbps
51 to 74 Mbps	$60.00 per 1 Mbps
76 to 100 Mbps	$55.00 per 1 Mbps

The DOE has opted to implement 100 Mbps of Internet access at a price of $55.00 per 1 Mbps of capacity. The total monthly recurring cost will be $5,500.

Table 5, below, shows the relative per 1 Mbps of Internet access between the GovGuam 2007 IFB and the GDOE 2007 and 2011 bid awards.

Table 5 – Internet Access Comparison between GovGuam and the GDOE

Government Entity	Year	Vendor	Method of Procurement	# of Bidders	Capacity in Mbps	Mo. Price for Capacity	Mo. Price Per 1 Mbps
GSA IFB	2007	GTA	Bid	2	5	$ 800	$ 160.00
GDOE IFB	2007	MCV	Bid	2	135	$ 500	$ 3.70
GDOE IFB	2011	PDS	Bid	3	1000	$ 775	$ 0.78

In 2007, the GDOE issued a competitive bid and awarded a contract for a 20 Mbps link at $6,000 a month. The network manager for GovGuam stated that the current network is 12 Mbps. However, there is no description of the charge that is attributed to a broadband 12 Mbps link to the Internet in the GTA data provided. The reason is that the Internet Access from the Data Center is based on the contract for 512 Kbps and 1.544 Mbps Internet Access awarded by the GSA in 2007 and may be categorized by the GTA as High Capacity services. Thus, it is not possible at this time to accurately identify the Internet capacity that is currently in use.

If that is true, then, the Internet access capacity may have been configured differently from the way in which service was bid. The bid was issued for 512 Kbps and T1 access to the Internet, but is may have been provisioned as a broadband connection of 12 Mbps. If the circuit was bid as a single broadband link, then, a current charge for Internet service would be identifiable. However, a cost for the 12 Mbps of bandwidth is not identifiable from the data provided by the GTA.

If GovGuam receives the same pricing as the GDOE in its 2011 bid, the GovGuam would be able to acquire a 12 Mbps Internet access link with a Service Level Agreement for $840 a month or $70 per Mbps. This capacity would only be for those agencies that are interconnected to the GGWAN. The savings at 12 Mbps would be about $2, 760 a month or $33,000 a year and would represent a 70% reduction in cost.

Small Office Internet Access - The GovGuam expends about $9,700 a month for 97 different Spyder services. These services will need to be continued if it is being used for small offices that are not

connected to the GGWAN. However, if those users are connected to the GGWAN, then, the Internet access may not be needed, unless it is being used for backup or redundancy purposes. Again, additional information is needed to determine the amount of savings.

The IFB that led to the GSA award specified a Quality of Service (QoS) requirement or Service Level Agreement capacity. However, any bid for broadband or office based services should specify such specifications. The concentration of the service would also enable the GovGuam to better secure the network. The issue of how the GovGuam is providing Internet services for the agencies remains an issue. Unfortunately, the matter needs additional review that must be addressed by the BIT.

L. Television Services

The GovGuam does not have many television services in the Departments. As such, it is not a high priority. However, again, it is noteworthy that television services have only been procured from the GTA. The service should be competed for on a government-wide basis.

M. Summary

Table 6, below, summarizes the cost savings to the GovGuam based on a comparison between the bids that the GDOE has received over the years and in the 2011 IFB. The comparison shows the relative cost pricing for the selected services based on the data provided in Appendix A.

Table 6 shows the Estimated "Per Line" cost based on the Quantity (Column C) and the Monthly Recurring Charge (MRC) based on the data provided by the GTA.

Table 6 also includes the most recent pricing for the comparable service based on the bid awards issued by the Guam Department of Education (Column E). Column F multiplies the GovGuam quantity of services Column B by the GDOE bid price to obtain the Estimated Annual Cost of the service to GovGuam. Column G shows the estimated savings to the Government of Guam.

The data reveals the importance of competitive bidding for the GovGuam services. Based on the information contained in Table 6, the Government of Guam will save about $900,000 per year by bidding the basic telecommunication services. This represents a savings of about 33% over the current expenses to GovGuam. There may be other significant savings from reducing the High Capacity services and Internet Access services that are not included in the estimate. This raises questions regarding the effectiveness of GovGuam procurement for telecommunication services.

Second, bidding for the service would bring GovGuam into compliance with GovGuam procurement laws. Telecommunication services have been competitive for many years. The GDOE has complied with federal rules governing telecommunications by issuing competitive procurements. The GDOE has also been in compliance with GovGuam procurement laws.

Third, there are outstanding questions concerning the filing of the ICBs for services. In the case of Metro Ethernet services, all services are provisioned solely through ICBs. Yet, there does not appear to be any filing before the GPUC services. The reason why this is important is that the Guam Telecommunications Act explicitly requires telecommunication companies not to bill or invoice for services unless tariffs have been filed with the GPUC.

Table 6 – GovGuam Telecommunication Service Cost and Comparison with the Bid Prices

Type of Telecommunication Service	A Estimated "Per Line" Cost Derived from GTA Data (MRC "/" Number of Lines)	B Qty	C MRC for Month of November 2010	D Estimated Annual Cost	E GDOE Bid for Equivalent Service	F Estimated MRC for Service Based on Unit Prices from GDOE Bid	G Estimated Annual Savings for the Government of Guam
Telephone Services							
Government Telephone Services	$ 57.14	675	$ 38,567	$ 462,804	$ 26.17	$ 17,664.75	$ 250,827
Centrex Services	$ 50.28	1686	$ 84,771	$ 1,017,256	$ 26.17	$ 44,122.62	$ 487,784
Hosted PBX System	$ 23.33	24	$ 560	$ 6,720	$ -	$ -	NA
Mobile Phone Services							
GSM Services (Various)	$ 92.25	87	$ 8,026	$ 96,310	NA	NA	Unknown
Digital Data Services							
ISDN Primary Rate	$ 771.00	18	$ 13,878	$ 166,536	$ 427	$ 7,686	$ 74,304
ISDN Basic Rate	$ 109.97	3	$ 330	$ 3,959	Not Needed	Not Needed	Not Needed
Ethernet Services	$ 1,173.87	46	$ 53,998	$ 647,976	$ 775	$ 35,650	$ 220,176
High Capacity Service	$ 629.12	26	$ 16,357	$ 196,284	$ 775	$ 20,150	$ (45,516)
T1	$ 432.29	3	$ 1,297	$ 15,563	$ 775	$ 2,325	$ (12,337)
Internet Access							
Spyder Services	$ 98.69	99	$ 9,770	$ 117,245	NA	NA	NA
Video Services							
Video Services	$ 101.00	10	$ 1,010	$ 12,120	NA	NA	NA
Totals			$ 228,564	$ 2,742,772		Estimated Savings	$ 900,934

12 G.C.A. §12106. Tariffs of Rates and Charges states that:

> "(a) Unless otherwise ordered by the Commission, all telecommunications companies, except commercial mobile service providers, shall file a tariff indicating the rates and charges and the classifications, terms, and conditions of its telecommunications services. The tariff shall be in such form, contain such other information, and be made available to the public in such manner as the Commission may require by rule or order.
>
> (b) Except as provided in subsection (c), no telecommunications company shall make any change in any rate or charge or any classification, term or condition for any telecommunications service in its tariff except after thirty (30) days prior notice to the Commission or unless the Commission has previously authorized or approved the change. Any notice hereunder shall be in such form, contain such other information, and be made available to the public in such manner as the Commission may require.
>
> (c) Unless otherwise ordered by the Commission or provided by or under authority of this Article, no telecommunications company shall provide or resell any telecommunications service unless tariffs relating to that telecommunications service have been filed and the notice period has expired. Unless otherwise ordered by the Commission or provided by or under authority of this Article, no telecommunications company shall (1)

> charge, demand, collect or receive a greater or less or different compensation for such service than the charges specified in its tariffs, (2) refund or remit by any means or device any portion of the charges so specified, or (3) extend to any person any privileges or facilities or employ or enforce any classifications, terms and conditions, except as specified in such tariffs.
>
> (d) A telecommunications company may discount or reduce any rate or charge for a telecommunications service in its tariff of current rates and charges by filing notice of such discount or reduction with the Commission. A discount or reduction in any rate or charge under this subsection shall become effective without Commission review or approval.

Fourth, as shown in the GDOE bid, there would be considerable administrative simplification since purchasing would be simplified and there would be no future need to audit a telephone or "high capacity" circuit based on complex legacy tariff structures. The bid would also ensure the "economies of scale" (e.g., it would aggregate the number of circuits used by GovGuam as a whole and not by individual departments) by aggregating the GovGuam as a single account. This would also help to justify lower ICB pricing since there are few organizations with the number of services as the GovGuam.[42]

Finally, the networking services would be improved and would result in improved management control by GovGuam.

VI. Summary Assessment and Recommendations

Guam has one of the most extensive telecommunications infrastructures in the Pacific Islands region. Guam also has a liberalized telecommunications environment with many competitors. These competitors include the Docomo, GTA, iConnect, IT&E, MCV, PDS.

The Government of Guam annually, procures over $2.7 million in telecommunication services. The telecommunication services procured includes telephone, Internet Access, inter-agency communications over Ethernet transport, high capacity data communication services, long distance calling, mobile phone, television, and others. The GovGuam is a large consumer of telecommunication services. The Executive Branch alone, for example, has over 2,300 telephone lines. The telecommunication services used by the Government of Guam are documented in the Assessment.

The Assessment initially focused on preparing a summary of the type and cost of the services in order to prepare IFB specifications and to estimate the projected savings that the GovGuam might expect from a competitive procurement. During the preparation of the Assessment, however, obtaining accurate information regarding the application of tariffs, cost, and procurement became issues. Further, during the effort to clarify the current expenditures, tariff, service definition, and procurement issues emerged. As such, the report necessarily discusses competition, tariff, and non-bid procurement issues. The discussion is unavoidable since these issues are central to the understanding of the current cost of telecommunication services and the potential savings that the GovGuam may anticipate from competitive bids. Finally, the Assessment and reporting of the issues created changes in the environment which led, in part, to a subsequent delay in finalizing the report.

[42] The GTA may have been treating the agencies of the Government of Guam as separate entities and not providing the highest discount levels. This cannot be determined without an examination of the MRC breakdown by tariffs. If it is determined that this is true, then, the failure to issue an appropriate government-wide bid was even more significant.

A. Compliance with Procurement Law

Telecommunication services are subject to competition in accordance with the Guam procurement law; the U.S. Telecommunications Act of 1996; the Guam Telecommunications Act of 2004; the Directive of the Attorney General (February 16, 2011); and the rules, regulations, decisions, and orders of the Federal Communications Commission (FCC) and the Guam Public Utilities Commission (GPUC).

In February 2011, Attorney General Leonardo Rapadas reminded all government agencies that "It is the policy of the Government of Guam to promote maximum competition and good management of resources (5 GCA 5010)." The Attorney general further stated "I am requesting that each agency review its telecommunication contracts or purchase orders to ensure that it was issued as a result of an invitation to bid within the last four years."

The GovGuam has never completed a competitive procurement central office (CO) based telephone services on a government-wide basis. The Bureau of Information Technology (BIT) issued a Request for Proposals (RFP) in 2009 and the GSA issued an IFB in 2010. Both were cancelled. In contrast, the Guam Department of Education (GDOE), on February 19, 2011, issued a comprehensive bid for telecommunication services. The GDOE awarded the IFB to the GTA at a rate of $33.45 for Plain Old Telephone Services and $26.17 for Centrex services. The GovGuam current pays about $52.00 per line. The GDOE award was for the same service, using the same telephone lines, using the same telephones which are in place, and using the same company, but at a price approximately 50% less than what the GovGuam is currently paying. Given the 2,300 lines of the GovGuam, the monthly savings for the Government of Guam is estimated to be over $60,000 a month.

The GovGuam has never executed a GovGuam-wide competitive procurement for ISDN PRI Services. In 2007, the GSA issued an IFB for "video teleconferencing bandwidth" and awarded the bid for bandwidth up to 768 Kbps to the GTA. A PRI is 1.5 Mbps, double the 768 Kbps. In contrast, the GDOE issued an IFB for ISDN services in 2011. The price differential between the GDOE and GovGuam is roughly a 35% differential.

Clearly, the Government of Guam should issue bids for the full range of telecommunication services as planned by the Bureau of Information Technology. The GDOE was able to issue a bid in two months; from the start of the bid preparation to the issuance of the purchase orders.

An IFB should be issued for comprehensive telecommunication services. If separate bids are to be issued, the recommended priorities for issuance are:

- Telephone Services (Centrex, Government Telephone) as a Single Bid
- Long Distance Services
- Data Services (GGWAN Ethernet Network, PRIs) as a Multi-Part IFB based on the specifications of a dedicated 1 Gbps with 10 Gbps as an optional capacity
- Internet Access (Corporate Network Approach with Shared Minutes) as a Single Bid or Office that is not Connected to the GGWAN with only GovGuam offices not connected to the GGWAN using a "Spyder" like service
- Mobile Services (Corporate Mobile Services Approach)
- Television Services
- Miscellaneous Services

Recommendations:
The General Services Agency, as the central procurement agency for the Government of Guam, should issue and execute an IFB for telephone services and ISDN PRIs as soon as possible to ensure compliance with procurement laws and to ensure that GovGuam receives the very significant cost savings.

Until GovGuam fully executes and implements a competitive bid for telephone services, the GSA should seek the application of the GTA rates offered to the GDOE under an ICB.

B. Data and Reporting Requirements

The Bureau of Information Technology (BIT) and the University of Hawaii (UH) were unable to obtain a list of all telecommunication services with specific tariff cross-references so that charges could be verified and services audited. Additionally, the GSA issued an IFB in 2007 for long distance services. The IFB requested pricing but did not require any reporting of the use of the service in a manner which enables comparisons against contract pricing terms. The IFB simply established an indefinite quantity price list through an award. In 2011, the GSA reissued the IFB for long distance services. A bidder requested the GSA to provide a breakdown of how many minutes of calls were to the locations that the GSA desired. The data could not be provided in a timely manner.

Recommendation: The General Services Agency, as the central procurement agency for the Government of Guam, when issuing IFBs for telecommunication services, should require important information on the use, tariff, and contract term references to be provided and that contract awards be executed through contracts to ensure that the terms and conditions of the award are clear and that information is provided to the GovGuam to ensure accountability in the delivery of the service and the invoiced charges.

C. Discrepancies in the Charges

The data that was provided by the GTA contains very significant variations in pricing for what appears to be the same service. There were 205 distinct charges for the 2,300+ lines. Further, as stated earlier, the BIT and the UH was unable to obtain data that provided cross-references to the tariffs and/or contract pricing which would permit an analysis of both the tariff-based pricing and services. As a result, the UH study could not completely assess whether the charges were appropriate. Additionally, there were differences between the charges and the IFB. For example, in an IFB issued by the GSA in 2007 for Ethernet services, there are differences in the price proposed and the price charged. It may that the pricing and tariff pricing for the telecommunication services will be validated with additional information. However, the variations in pricing and tariffs and contracts warrant further review.

The GovGuam needs to examine whether the charges for the telecommunication services are accurate. The differences in the charges for the same services may mean that the service has been overcharged or not tariffed. In either case, the differences in the cost of the service should be reviewed since the charges cannot be explained and because there are some service cost implications given the Guam Telecommunications law and decisions by the Guam Public Utilities Commission regarding tariffs and services.

The examination of the charges will require both an audit of both the initial procurement and service and how the charges align with the tariffs, ICB filing, and/or contract. The audit of the service could be

undertaken by the BIT. This would include a systematic review of the types of services and circuits that are in place, and whether the service is active. A concomitant gain would be a needed inventory and map of the networks that BIT oversees.

The audit of the cost of the service could also be undertaken by the BIT. However, the audit of the charges could potentially be referred to the Office of the Public Auditor (OPA) since they are mandated and resourced to undertake the examination. This could be effective and efficient since the OPA has both the staff and the mandate to examine public expenditures and the variation in charges for the same services appears to be significant and may be at variance with the tariffs and/or contracts. OPA is also better positioned to examine the Guam procurement. The assessment of telecommunications laws and regulations should be done jointly by the BIT and OPA.

Recommendations:

The General Services Agency, as the central procurement agency for the Government of Guam, when issuing IFBs for telecommunication services, should require important information to be provided and that IFB awards be executed via contracts to ensure that the terms and conditions of the award are clear. The GSA should also monitor the payments for the service to ensure that the invoices for services match the tariff and/or contract terms and conditions.

The Bureau of Information Technology should request a review of charges for telecommunication services by the Office of the Public Auditor to ensure that the charges are consistent with tariffs and contract awards.

D. Lack of Effective Procurement

In 2007, the GSA issued an IFB for Metro Ethernet Transport Services. In the same year, the GDOE issued an IFB for like services. The GSA awarded an IFB for 5 Mbps at $800 a month. The GDOE awarded an IFB for 135 Mbps at $500 a month. The capacity/price ratio between the GSA and GDOE IFBs are orders of magnitude apart. Most recently, the GDOE, in 2011, rebid the service. The service that was awarded is more 1,000 Mbps of capacity at $775 a month. What accounts for this difference in capacity v. price? The Assessment identified several other areas where capacity/price differences are significant. Again, what accounts for the differences in capacity/price?

Recommendations:

The General Services Agency, as the central procurement agency for the Government of Guam, should exercise due diligence in procurement and encourage competition so that the GovGuam receives comparable or better pricing for telecommunication services acquired by other government agencies.

The General Services Agency, as the central procurement agency for the Government of Guam, should issue and execute an IFB for Ethernet services as soon as possible to comply with the procurement laws of GovGuam and to ensure that GovGuam promotes maximum competition and good management of its resources.

E. Promoting Competition

Attorney General Rapadas, as noted earlier, reminded all agencies in February 2011, that 5 GCA §5010 states that "It is the policy of the Government of Guam to promote maximum competition and good

management of resources." In the GDOE bid, issued in 2007, there were seven Bidders. In the GovGuam IFB issued in 2007, there were only two Bidders. The Bidder that was successful in providing the Ethernet equivalent service to GDOE in 2007 did not respond to the IFB. The Bidder that won the IFB for Ethernet equivalent services in 2011 also did not submit a bid. Both companies stated that they were unaware of the IFB.

Most recently, in the Long Distance IFB issued by the GSA in 2011, the GSA advertised the IFB in the newspaper as required by law. On the day of the Bidders Conference which followed the advertisement, major competitors did not show up. The BIT called three potential Bidders authorized by the Guam Public Utilities Commission to provide LD services. The CLECs then picked up the IFB. Fortunately, the Bidder's Conference was not a mandatory requirement. A Bidder that was unaware of the IFB was awarded the IFB.

> **Recommendation:** There are only a limited number of telecommunication service providers authorized by the GPUC to provide telecommunication services. While the procurement code (5 GCA §5211) minimally requires the advertising of an IFB in the newspapers, the GSA should attempt to promote competition by notifying all authorized telecommunication providers of any IFB for telecommunication services.

F. Telephone Bid Specifications

The specifications that were prepared by the GSA in the IFB issued in 2010 and in the attempted bid rejected by the newly appointed BIT in 2011 are proprietary. First, the IFB specifications were based only on the current telephone features of the GTA. The DOA data processing contract employee who prepared the specifications stated that he was directed by the CPO to only prepare specifications for the current system, despite being an advocate for advanced Voice Over Internet Protocol (VOIP) technology. So, the specifications were taken only from the GTA features which use the DMS-100 telephone switch. The specifications did not include modern features such as integrated messaging (voice messages to email). Second, the IFB prepared by the GSA did not include telephones. This is an important issue since the current Centrex services are provided by a legacy DMS telephone switch and the DMS digital feature phones use a proprietary signaling method. If the GSA required no phones in the IFB, then, no other Bidder could have provided a telephone service based on the use of the existing telephones unless a company was to procure a DMS telephone switch. Any other bidder would have to be disqualified or the IFB would have had to be cancelled and reissued, providing the incumbent with two opportunities to provide an IFB response. There is a common denominator among the Local Exchange Carrier companies. All GPUC authorized providers of telephone services have a telephone switch from Metaswitch Networks.

> **Recommendation:** The General Services Agency, as the central procurement agency for the Government of Guam, should issue IFBs which enables more than a single company to offer telephone services. All of the carriers in Guam (GTA, IT&E, MCV, and PDS) use telephone switches from Metaswitch Networks. An IFB based on the Metaswitch Networks would enable all Bidders to meet the switch and feature specifications for the telephone services.

G. Mobile Phones

The Legislature of Guam routinely restricts the use of local government funds for mobile telephone services through the GovGuam general appropriations bill. For example, the appropriations law in 2010 states that "No government of Guam funds, regardless of source and including funds expended by autonomous agencies, shall be expended for the use of cellular telephones, cellular telephone services and other wireless telephone services, unless the government of Guam will be reimbursed from Federal funds or other grants." The appropriations law contains specific exceptions to the restriction in the use of mobile phones. In 2010, there were 87 GSM mobile phone services paid for by the GovGuam. Most of the mobile services were for agencies specifically excepted under the appropriations law or those that receive significant federal funding (e.g. Homeland Security, Public Health, and the like). However, there are a significant number of mobile phones which are listed under the Department of Administration and the Department of Revenues and Taxation which are not part of the exception list and may not have been reimbursed by federal grants. For example, it is not certain whether the telephones listed under the DOA account are reimbursed under federal funds. As Attorney General Rapadas reminded all agencies, there is personal liability as provided for in 5 GCA §7103 for "expending money without proper authorization, without proper authority, illegally, or contrary to law."

> **Recommendation:** The Bureau of Information Technology should request the Office of the Public Auditor and the Department of the Attorney General to conduct a preliminary review of the use of mobile phones. A preliminary review would help to determine whether the mobile telephones are authorized by the Guam appropriations laws and whether the GovGuam was in fact reimbursed from federal funds or other grants.

H. Individual Case Basis (ICB) Tariffs

The Bureau of Information Technology requested a complete set of tariffs from the Guam Public Utilities Commission to determine whether the GovGuam, as a large customer, should receive any discounts for telecommunication services. The ICB information provided by the GPUC indicates that tariffs may not have been filed for certain telecommunication services. The Guam Telecommunications Act of 2004 and the decisions and orders of the GPUC require a telecommunications carrier to file tariffs or Individual Case Basis (ICB) tariffs before billing a telecommunication service. Specifically, 12 G.C.A. §12106 (c) states that:

> (c) Unless otherwise ordered by the Commission or provided by or under authority of this Article, no telecommunications company shall provide or resell any telecommunications service unless tariffs relating to that telecommunications service have been filed and the notice period has expired. Unless otherwise ordered by the Commission or provided by or under authority of this Article, no telecommunications company shall (1) charge, demand, collect or receive a greater or less or different compensation for such service than the charges specified in its tariffs, (2) refund or remit by any means or device any portion of the charges so specified, or (3) extend to any person any privileges or facilities or employ or enforce any classifications, terms and conditions, except as specified in such tariffs.

Recommendations:

The Bureau of Information Technology, on behalf of the Government of Guam, should petition the GPUC to determine whether tariffs were filed in accordance with 12 G.C.A

and the GPUC rules, regulations, decisions, and orders. If required tariffs were not filed, then, the BIT should request that the GPUC determine whether the contract charges of GTA for Metro Ethernet Services were appropriate under the law and whether a refund is due under the GPUC rules, regulations, decisions, and orders. The Department of Attorney General should be copied on the request.

The BIT should request the Office of the Public Auditor to assist with a full review of all tariff and contract services to determine whether the charges and service have been appropriately applied and provided in accordance with the tariffs and Invitation for Bids.

I. Internet Access

Guam has some of the best Internet Access services in the Pacific Islands due to its location as a hub for submarine fiber optics cabling systems. The assessment revealed that the GovGuam only has about 12 Mbps of services and could significantly lessen it costs and/or improve the Internet services with the savings should GovGuam obtain the same pricing as the GDOE. The assessment also revealed that Internet Access for the GovGuam users was located in the category of high-capacity services.

Recommendations: The General Services Agency, as the central procurement agency for the Government of Guam, should issue a bid the Internet Access services with a tiered pricing structure, QoS/SLA requirements, and other specifications to ensure that the GovGuam receives a service and pricing equal to or better than the GDOE has received under the 2011 GDOE IFB.

The GovGuam should improve the capacity of Internet Access by applying some of the projected savings to increasing the Internet Access capacity for GovGuam.

The Bureau of Information Technology should assert management control over Internet Access and implement technologies and internal control processes to ensure security and prioritization of Internet traffic.

J. Bureau of Information Technology

The Bureau of Information Technology should undertake an analysis, redesign, and reprogramming of the GovGuam networks based on a higher capacity (1 Gbps) data communications capability and a virtualized server environment. A virtualized server environment is the most efficient way to manage server hardware and services, but such an environment absolutely requires a robust and secure network. Data congestion, especially over slower or congested telecommunication links, could lead to poor response times at the user sites. It is imperative that the network be documented and a Service Level Agreement (SLA) be executed.

The redesign should lead to the termination of certain "High Capacity" links, if indeed they are high-capacity links. The links should be converted to higher capacity ETS services. The routers and switches should also need to be upgraded and reprogrammed based on the higher capacity available. While this is a significant effort, the results will lead to much better services and network management for all GovGuam agencies. It would also establish the inventory for billing purposes. As part of this effort, the BIT should procure network management tools and establish a network management system. This would help to ensure that GovGuam services are better monitored, managed, protected, and supported.

Recommendations: The Bureau of Information Technology, on behalf of the Government of Guam, should request that savings from the telecommunications IFB for the first year be applied to ensuring that the infrastructure is upgraded to meet the needs.

The Bureau of Information Technology should conduct a detailed audit of telecommunication services and develop/implement a network plan.

The Government of Guam should consolidate the information technology staff responsible for systems and networks directly under the Bureau of Information Technology, although applications analysts/programmers and end-user technicians for non-government-wide applications should remain in the agencies.

Highlights of the Assessment

The Government of Guam is a large user of telecommunication services. Guam has an extensive telecommunications infrastructure with several competitors. Despite, the competition on Guam, the GovGuam has not executed competitive bids for telephone and other services on a GovGuam-wide basis and other IFBs expired in 2010. The GovGuam needs to comprehensively compete these services.

There are three important reasons for the GovGuam to issue and execute a comprehensive and competitive procurement of telecommunication services as proposed by the Bureau of Information Technology. *First*, by issuing an IFB for telecommunication services, *the GovGuam will comply with the requirements of Guam procurement laws*. *Second*, the competitive procurement of telecommunication services *will save the Government of Guam an estimated $900,000 a year*. These estimates were derived from a comparative analysis with the past and recent competitive procurements of the Guam Department of Education (GDOE) in 2011 and are documented in the Assessment. *Third*, Government of Guam will benefit from *improvements in telecommunication services*. If the GovGuam were to bid services and receive pricing similar to the GDOE, there will be significant improvements in the data communication links among the GovGuam agencies and increased capacity for Internet Access. There should also be the introduction of new services which would permit, for example, voice mail to be sent to email and/or to mobile phone devices.

Appendices

The Appendices are in a separate document.

Appendix A	Data Provided by the GTA for Month of November 2010
Appendix B	Centrex Services (from highest to lowest cost)
Appendix C	Government Telephone Services (from highest to lowest cost)
Appendix D	Managed PBX
Appendix E	ISDN Services
Appendix F	Metro Ethernet Services
Appendix G	High Capacity Services
Appendix H	Spyder Services
Appendix I	Mobile Phone Services
Appendix J	Television Services
Appendix K	DID Services
Appendix L	MCV, PDS, and Docomo Services
Appendix M	Example of Detailed Listing of Line Costs for Public Health
Appendix N	GSA BID NO. GSA-032-07
Appendix O	Request for Proposals Prepared by the Bureau of Information Technology – September 30, 2009
Appendix P	Request for Proposals Prepared and Issued by the General Services Administration – March 18, 2010
Appendix Q	Memorandum to All Agencies by the Department of Attorney General reminding the agencies of the need to competitively procure telecommunication services
Appendix R	GTA Centrex Price Proposal to the Guam Department of Education
Appendix S	Taxpayer Lawsuit by PDS
Appendix T	State of Hawaii Telecom Price List
Appendix U	Frequency Distribution of MRCs for Centrex and Telephone Services

Note: The data in Appendices B through J are in different order and are not necessarily listed in by the agency. Nevertheless, the segregated data should be most helpful to the Bidders that are tendering offers for the various services.