STATE OF IOWA

State Government Reorganization Commission

Answers and Recommendations to Select Information Technology Issues

Prepared For:

The General Assmbly's
State Government Roorganization Commission

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1.0 Introduction

1.1 Executive Summary

The State Government Reorganization Commission asked the Department of Administrative Services (DAS) to provide answers to questions pertaining to process improvements, and efficiencies with the intent of reducing costs and discovering greater government efficiency. Answers presented in this document are based on several sources, including the Iowa Code, and surveys/studies pertaining to servers, data centers, and email systems. Part of the Executive Branch however, including TOS, SOS, IPERS, and State Board of Regents are not represented. The findings produced the following:

1.1.1 Information Technology (IT) within the executive branch is structured in a federated/decentralized model with a central IT entity providing marketplace services on a fee for service basis. As a result of this federated structure, there are numerous IT decision makers throughout state government. DAS is directed by stature to "provide high-quality, customer-focused information technology services and business solutions to government and to citizens", in addition to the Director's duty to serve as or designate the State's Chief Information Officer (CIO). However, the Code does not restrict directors of other agencies from creating their own IT departments or major IT systems/programs.

1.1.2 IT governance is conducted through a ten member Technology Governance Board (TGB) which includes the Director of DAS and is currently chaired by the Director of the Department of Corrections.

1.1.3 DAS and the TGB have established IT procurement processes for agencies to use.

1.1.4 There are approximately thirty-nine (39) lead IT personnel serving as IT contacts for their respective agencies. Some agencies utilize the title of Chief Information Officer and others do not. There are 779 IT full time equivalents (FTE) along with 85 IT related FTEs with non-IT job classifications.

1.1.5 ITE is a service provider and is required to price its services based on actual costs to comply with federal and state fiscal guidelines. Part of the ITE costing structure includes billing, accounting methodologies, and indirect costs. Appropriated agencies do not track specific costs by service line and do not identify nor track indirect costs associated with their services.

1.1.6 If the intent of the legislature is to have consistent technology throughout State government then clear direction needs to be given and appropriate authority needs to be delegated to those individuals with the requisite knowledge to implement this strategy across agency boundaries.

1.1.7 Through consolidation efforts, virtualization and rationalization of servers is possible, thus maximizing the use of server assets. This would require the specialized expertise of trained individuals to effectively maintain the varied and complex set of technologies to improve service reliability.

1.1.8 Summary of IT Job Classification Information:

Top ten IT Staffs (by FTE)	DHS, DOT, DAS, IWD, DNR, IDPH, IDR, DPS, DOC and ED	See Figure 3
Top three utilized IT job classifications	ITS 2, ITS 4 and ITS 5	See Figure 2
Top three largest labor expenditures based on IT job classifications	ITS 5, ITS 4 and ITS 2	See Appendix D, Figure D1
Top three highest paid IT job classifications based on the State's human resource pay plans.	ITEE, ITA 4 and ITA 3; However, the PSE 5 classification is also used for State CIO's positions and this falls between the ITA 4 and ITA 3 pay plan.	See current HRE pay plans

1.1.9 There is approximately 48,970 square feet of space being used to house the various servers and associated peripheral equipment. Currently the State has unused data center floor capacity of 37% (See Appendix F). This is unused space that costs to maintain (i.e. cool and power). Cost efficiencies can be gained by reducing the number of IT hardware and software assets. Additionally, environmental benefits are realized by reducing carbon dioxide emissions. The following is a summary of facility types:

Server closet	196
Server room	15
Localized data center	8
Mid-tier data center	2
Enterprise class data center	2
Total locations	223

1.1.10 There are 23 email systems in the Executive Branch according to a September 1st Email Study Report submitted to the Office of the Governor.

1.1.11 According to a recent email study questionnaire, there are a total of 1177 Blackberry devices owned by the state.

1.1.12 DAS-ITE uses a three-to-five year equipment refresh cycle. Upgrades to software applications are based on current technology trends and the industry systems development lifecycle.

1.2 Purpose

The State Government Reorganization Commission is charged to consider options for reorganizing state government in order to improve efficiency, modernize processes, eliminate duplication and outdated processes, reduce costs, and increase accountability. The review is to address the expanded use of the Internet and other technology as well as the incorporation of productivity improvement measures. The study is to also include a process to receive state government efficiency suggestions offered by the public and public employees.

The Department of Administrative Services (DAS) has captured information from various internal sources to address questions pertaining to the issues presented in the document scope.

1.3 Scope

The scope of the information presented in this document attempts to focus responses on enterprise-wide IT issues as well as department specific IT issues as requested by the General Assembly's Legislative Services Agency.

1.3.1 Topics:

- 1.3.1.1 How IT works today in state government
- 1.3.1.2 Role of Technology Governance Board (TGB)
- 1.3.1.3 Number of Chief Information Officers in state government
- 1.3.1.4 IT job classifications, number of, agencies assigned to (includes non-IT classifications working on IT as reported by agencies)
- 1.3.1.5 Number of data centers in state government
- 1.3.1.6 Number of e-mail systems in state government
- 1.3.1.7 Computer upgrade schedules
- 1.3.1.8 Hardware and software

2.0 State Technology Governance

This section addresses the roles and responsibilities of DAS and the Technology Governance Board (TGB). The duties of this 10 member board are to act as a governing and advisory board to ensure decision-making related to Executive Branch information technology (IT) projects, goods and services is based on business drivers in support of customer requirements. In its capacity as a governing board, the TGB works to achieve a standardization of Executive Branch information technology and ensure that expenditures on information technology projects, goods and services provide effective and efficient quality service that benefits customer departments and the citizens they serve. In summary, two key responsibilities of the TGB are to develop administrative rules governing the activities of the board and adopt enterprise level information technology standards applicable to all Executive Branch Agencies. A summary of the applicable State of Iowa Code sections is provided. (See Appendix A)

2.1 How IT Works in the State of Iowa Executive Branch

Appendix A, explains the missions, roles, and responsibilities of the department and governance process in existence today. "How does IT work in state government today?" is a broad issue that is best described at a high level covering Code authority, governance, standards and purchasing.

2.1.1 DAS is directed by statute to "provide high-quality, customer-focused information technology services and business solutions to government and to citizens" in addition to the Director's duty to serve as or designate the State's CIO. However, the Code does not restrict directors of other agencies from creating IT departments or major IT systems/programs. Information Technology initiatives typically start through a defined business need and are funded by Legislature through appropriation to the respective agency or project or, in some cases, by state or federal sources.

2.1.2 Information Technology is a critical component of support for service delivery to citizens and customers. IT within the Executive Branch is structured in a federated/decentralized model with a central IT entity providing marketplace services on a fee for service basis. Agencies have the choice to buy from ITE, build their own solutions or contract through external entities. The Information Technology Enterprise (ITE) also provides Utility services. These services are funded by the Executive Branch agencies that are required to use the services vs. a "build your own" concept. Utility services provided by ITE include an e-mail global address list referred to as Directory Services, certain Enterprise Security Services, Service Oriented Architecture, and Authentication and Authorization services.

2.1.3 The executive branch is subdivided into departments and within departments divided into divisions and bureaus. Within each tier there can be IT organizations providing basic services for information security; networking infrastructure; desktop support; electronic mail; eGovernment applications (websites); and data, storage, retrieval, backup functions (See Figure 1).

2.1.4 As a result of this federated/decentralized structure, there are numerous IT decision makers throughout state government. IT decisions are made by department directors, with technical leadership and guidance from their Chief Information Officers (CIO) in consultation with business/policy peers. Certainly a goal is for IT decisions to be made by applying the right technology to a specific business need.

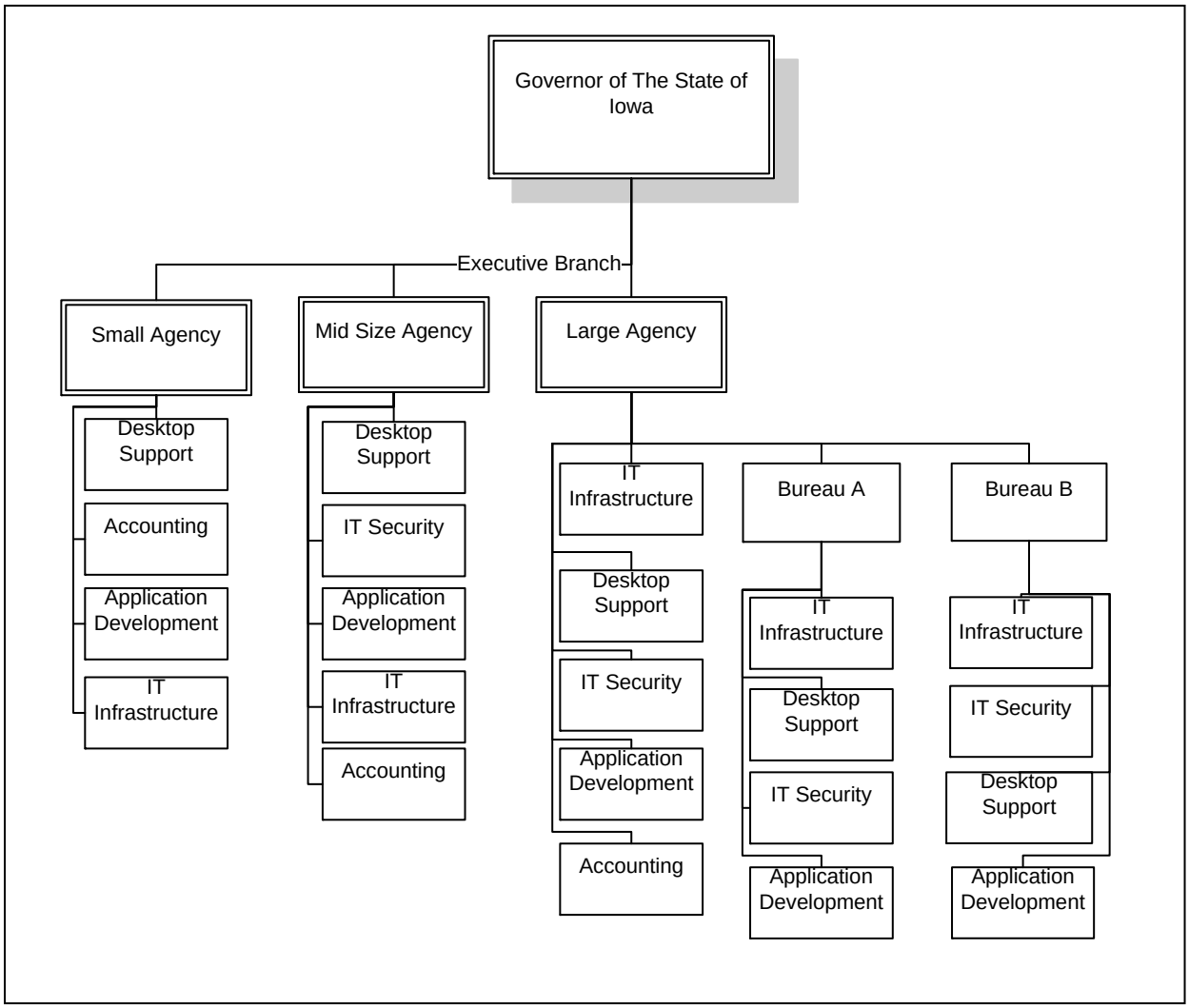


Figure 1. Examples of Federated IT environment and associated IT organizational structure.

2.1.5 Agencies are required by the Code to adhere to TGB operational standards. However, strategies to ensure such compliance are limited or rarely applied. As technology evolves and business requirements warrant, there is a process to review circumstances that fall outside of the expectations stated within approved standards. Thus, participating agencies may seek a waiver from the TGB to the applicable standards.

2.1.6 Aside from the complexity of governance and standards, purchasing is a challenge across the multiple agencies procuring IT equipment. The TGB has done a good job of recommending and assisting the DAS Director with setting procurement standards. Compliance with those standards remains at the individual agency level. As IT has evolved over the last 15 years, agencies and IT departments have developed preferences and professional relationships with vendors. Implementing standards that cause deviation from an agency's IT vendors can challenge the "more efficient resource utilization" in the short term. But, long term, resource efficiencies can be gained through economies of scale.

2.1.7 DAS and the TGB have established IT procurement processes for agencies to use. This can benefit the State with resource sharing across departmental boundaries while also

supporting agencies with oversight of their respective procurements and improved management of delivery timeframes in meeting their business needs. Due to the many varying agency internal policies and internal business requirements involved, it does create challenges in state-wide data gathering and decision-making. There is a documented process for procurements to come before the TGB, which includes procurement dollar thresholds and procurement justifications (see Appendix B). Strategically, it is difficult to balance agency autonomy, well established best practices, to result in cost savings of overall State resources. Should all agencies benefit from central State procurement entity or should we continue to allow agency choice in releasing competitive bids and acquiring contracted services?

2.1.8 From an expert IT perspective, an additional challenge includes the lack of measurement systems (metrics) and standard reporting of IT accounting information across departmental boundaries. It is difficult to know how much the State spends on IT as our current processes allows for options in defining and coding cost items. For demonstration purposes only - and using e-mail as a service example - the cost components include direct expenditures, indirect costs and general administration and overhead. ITE is a service provider and required to price its services based on actual costs to comply with federal and state fiscal guidelines. Part of the costing structure includes billing, accounting methodologies, and indirect costs. Appropriated agencies do not track specific costs by service line and do not identify nor track indirect costs associated with their services. Therefore, all costs are likely not known and thus difficult to report and use for service comparison purposes.

2.2 IT Governance System Options

Fundamentally, the governance system could have the authority to steer and direct actions pertaining only to IT matters across agency boundaries. The governance should not impact an agency's ability to conduct business. There are two key aspects to the management of IT and those are network and infrastructure and then applications. The latter residing with agencies as this defines and supports their service delivery in meeting their agency's mission. Regarding governance models, there are numerous options, such as: 1) expand the role of the current TGB to include audit and compliance responsibility; 2) a single CIO leading IT enterprise efforts (see 2.2.1 following); or 3) a small 3-5 person governance body of IT experts with a high level of education and experience in the IT field (see 2.2.2 following). All options would likely require a change in statutory authority.

2.2.1 For a single CIO to lead and manage the State's IT business, the CIO would need to be empowered to determine the best course of action for enterprise technology architecture with support from the Governor. The authority would reach across executive branch agency boundaries and require detailed risk analysis, coordination, and communication of IT activities in support of departments' business needs. The CIO would have authority over all areas of IT including IT management, services, fiscal, and operational functions.

2.2.1.1 The benefits of having a single State CIO include:

2.2.1.1.1 Clear statewide direction and policy;

2.2.1.1.2 Consistent IT architecture and infrastructure;

2.2.1.1.3 Consistent statewide IT support;

2.2.1.1.4 Gain statewide purchasing economies of scale;

2.2.1.1.5 Complete visibility of statewide IT asset purchasing;

2.2.1.1.6 Leverage existing database capability to support like business requirements statewide;

2.2.1.1.7 Implementation of comprehensive enterprise data security initiatives;

2.2.1.1.8 Reduce integration or compatibility problems;

2.2.1.1.9 Facilitate consistent patching and software versioning; and

2.2.1.1.10 Promote a collaborative workspace for all to contribute.

2.2.1.2 The challenges of having a single State CIO include:

2.2.1.2.1 Agencies would be directed to use a common infrastructure instead of implementing individualized server platforms;

2.2.1.2.2 Agency IT divisions may lose administrative control but not the functionality of information systems;

2.2.1.2.3 Agency IT divisions may not be inclined to present creative solutions;

2.2.1.2.4 Agencies redirect a focus on application development to support their business requirements.

2.2.1.2.5 CIO scope of responsibility becomes large and would need support the nuances of agency business requirements.

2.2.2 A governance body of IT experts chaired by the State CIO may be comprised of members empowered to make executive business decisions and have expert knowledge about the field of IT. Agency CIOs would be required to comply with governance board decisions while allowing the continued existence of current IT organizational structure. The board should be vested with the enforcement authority that extends across agency boundaries without involving gubernatorial resources that would be required in a complex dispute process. An appropriate level of funding would be required to staff the board for enforcement and administrative purposes.

2.2.2.1 The benefits of having a governance body such as this includes:

2.2.2.1.1 Authority for IT areas including IT management, services, fiscal, and operational functions are distributed among both the State CIO, including a central state IT organization and individual state agency CIOs.

2.2.2.1.2 The governance process affords an opportunity for CIOs to provide input on controversial issues pertaining to purchasing or standards.

2.2.2.1.3 The governance process affords agencies the opportunity to participate in the standards making process.

2.2.2.1.4 The governance process would ensure enforcement of IT standards.

2.2.2.1.5 The governance body would have more authority to oversee IT budget expenditures and focus spending on IT projects based on priority, feasibility, and risk.

2.2.2.1.6 The governance body would be responsible for enterprise technology contracts providing products and services to all state agencies.

2.2.2.1.7 The governance body would advise agencies about planning and preparing technology related procurements.

2.2.2.1.8 The governance body should facilitate healthy discussion on issues thus promoting debate on the pros and cons of technology issues.

2.2.2.2 The challenges in having a governance body such as this could possibly include:

2.2.2.2.1 Policy development and implementation are vast and complex. The State's policy development process takes pride on being all inclusive. With that comes the challenge of working with 35 plus entities with a goal of achieving consensus. In addition, because of the layers for review and input, the process is extremely time consuming and can take up to year or longer (from start to finish) before just one IT standard/policy is finalized and published.

2.2.2.2.2 Managing disagreements could detract from reaching consensus on key decisions.

3.0 Personnel

3.1 Number of CIOs in State Government

Based on the e-mail Directory distribution list for IT contacts, there are approximately thirty-nine (39) lead IT personnel serving as IT contacts for their respective agencies. Some agencies utilize the title of Chief Information Officer and others do not. Regardless, each agency does have a primary IT point person. The job classifications for agency IT points of contact/CIO vary due to the nature of the organizational structure within that agency and the business and IT needs of the agency. For example, there are several Public Service Executives (PSE), Management Analysts (MA) and Executive Officers (EO) in addition to the Information Technology Administrator (ITA) classification. (See Appendix C)

3.2 IT job classifications Assigned to Each Agency

According to the Human Resource Information System (HRIS) there are 779 IT FTEs based on a search of IT-related job classifications. There are also 85 IT related FTEs with non-IT job classifications (See Appendix I). Several graphs were created to depict total number of IT FTEs, total FTEs per job class, cost of labor per job class, and agency breakdown per job class. IT job classifications mentioned above do not solely represent all of IT- related work conducted within State government. In addition due to the nature of project work and business requirements,

vendor supplied contracted staff can be used to augment State IT resources. Information pertaining to the hiring of IT contractors is not captured in the State's personnel system (i.e. HRIS - Human Resource Information System). Further breakdown of IT job classification utilization by agency can be found in Appendix D, Figures D2-D7).

Summary:

Top ten IT Staffs (by FTE)	DHS, DOT, DAS, IWD, DNR, IDPH, IDR, DPS, DOC and ED	See Figure 3
Top three utilized IT job classifications	ITS 2, ITS 4 and ITS 5	See Figure 2
Top three largest labor expenditures based on IT job classifications	ITS 5, ITS 4 and ITS 2	See Appendix D, Figure D1
Top three highest paid IT job classifications based on the State's human resource pay plans.	ITEE, ITA 4 and ITA 3; However, the PSE 5 classification is also used for State CIO's positions and this falls between the ITA 4 and ITA 3 pay plan.	See current HRE pay plans

Table 1. Shows the top agency personnel numbers and top job class expenditures.

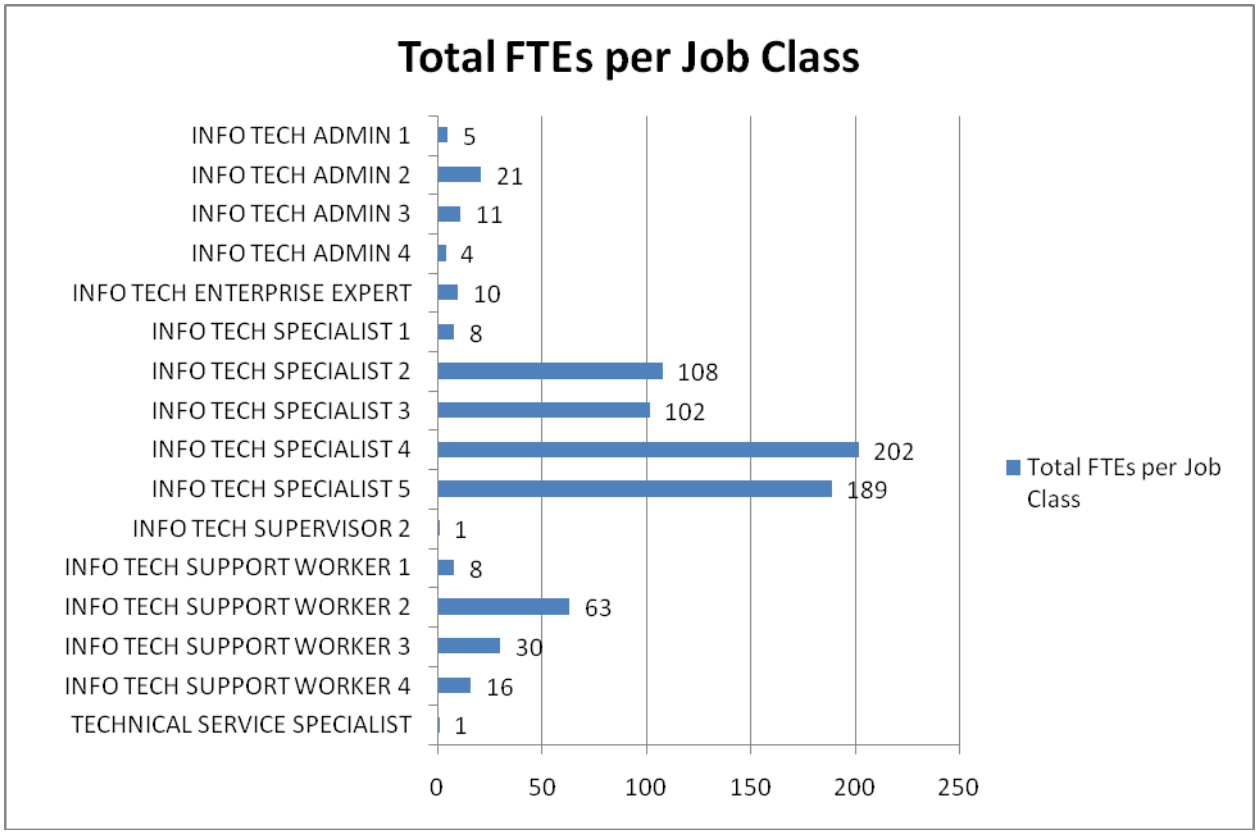


Figure 2. Shows the number of FTEs for each IT job classification.

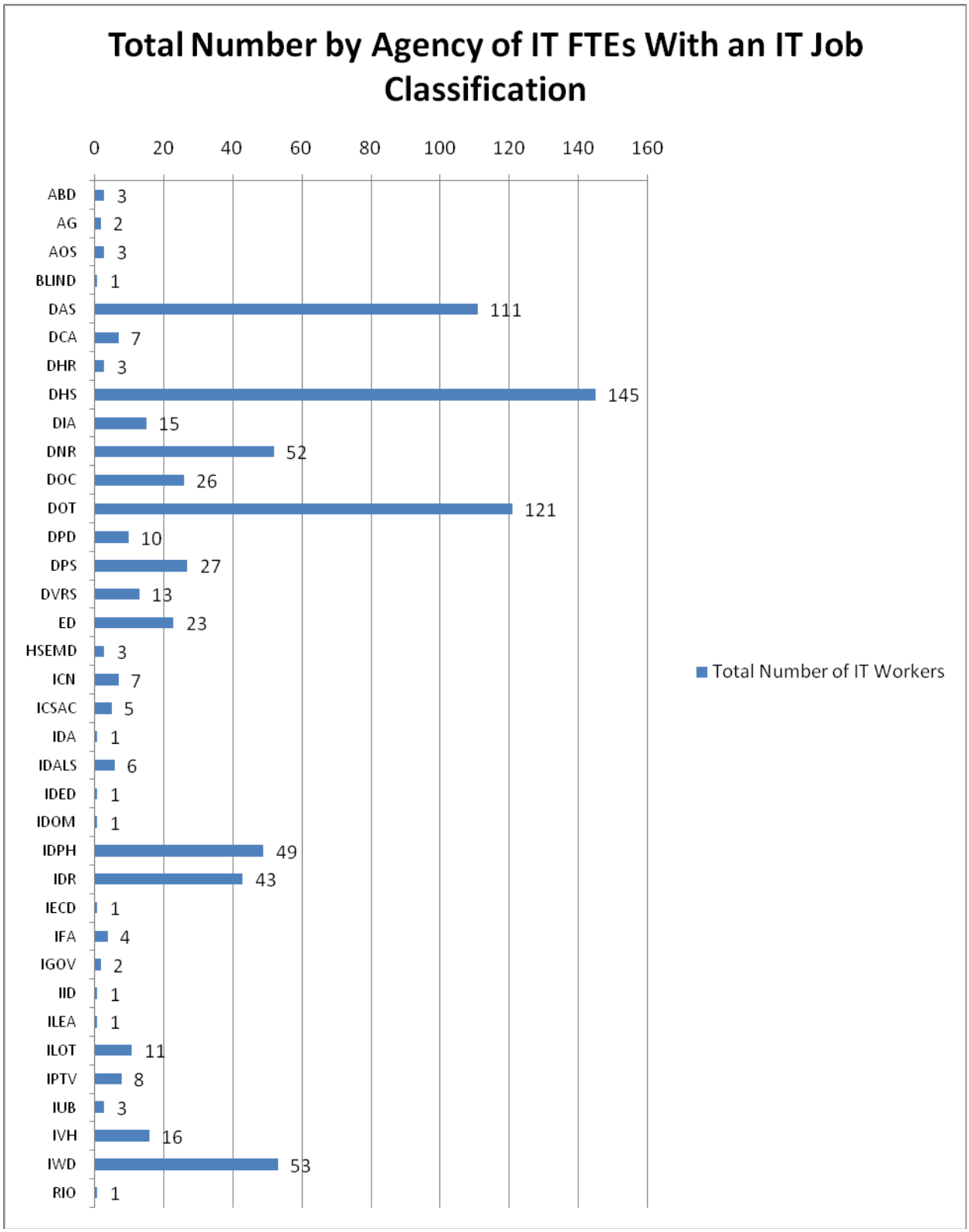


Figure 3. Shows IT job classifications related to information technology FTEs.

4.0 IT Facilities and Assets

4.1 Number of State Data Centers

The term "data center" is defined as a room/facility specifically purposed to provide any or all of the following: physical security, conditioned air, conditioned power, backup power, and fire suppression for IT equipment such as servers, network switching and routing. Appendix E further classifies such facilities by the size of the space and the purpose for which it used.

Data Center Type	Data Center Totals
Server closet	196
Server room	15
Localized data center	8
Mid-tier data center	2
Enterprise class data center	2
Total locations	223

Table 2. Shows the number and type of facilities for data center survey State agency respondents. In addition to data center survey data, DAS has collected server information from the preponderance of state government agencies (See Appendices F and H).

4.2 Number of State Email Systems

Not including Regents, there are 23 email systems in the Executive Branch. Data source is information gathered within the Executive Branch Electronic Mail Study.

Table 3. Shows the number agencies supported by DAS email. (Total Mailboxes - 3,838)

Agency	Mail Accounts	Agency	Mail Accounts
Administrative Services	546	Ethics & Campaign Disclosure	7
Board of Medicine	28	Governor's Office	65
Board of Nursing	22	Human Rights	73
Board of Pharmacy	17	Inspections and Appeals	361
Civil Rights	45	Iowa Agricultural Development Authority	8
College Student Aid Commission	76	Iowa Communications Network	157
Commerce – Alcoholic Beverages	39	Iowa Dental Board	10
Commerce – Professional Licensing	17	Iowa Law Enforcement Academy	28
Consumer Advocate, Office of	21	Management	39
Cultural Affairs	91	Natural Resources	1,437
Drug Control Policy, Office of	9	Parole Board	19
Economic Development	193	Public Employment Relations Board	13
Education – Vocational Rehabilitation	381	Rebuild Iowa Office	44
Elder Affairs	48	Treasurer of State	32
Energy Independence, Office of	12		

Table 4. Shows the agencies operating email platforms. (Total Mailboxes - 21,679)

Agency	Mail Accounts	Agency	Mail Accounts
Blind	141	Iowa Lottery Authority	127
Commerce – Banking	80	Iowa Public Employees Retirement	161
Commerce – Credit Union	27	Public Defense	75
Commerce – Insurance	128	Public Health	458
Commerce – Utilities	93	Public Safety	1245
Corrections	4,801	Racing/Gaming Commission	66
Education – Public Television	153	Revenue	519
Education – State Library	30	State Public Defender	216
Education	458	Transportation	2,983
Human Services	6,933	Veterans Affairs – Iowa Veterans Home	1,145
Iowa Finance Authority	159	Workforce Development	1,681

4.3 Options for Data Centers and Email Systems - Potential Cost Savings

4.3.1 Cost efficiencies can be gained by reducing the number of IT hardware and software assets. Additionally, environmental benefits are realized by reducing carbon dioxide emissions.

4.3.2 Currently the State has excess data center floor capacity of 37%. This is unused space that costs to maintain (i.e. cool and power).

4.3.3 According to the data center survey, there is approximately 48,970 square feet of space being used to house the various servers and associated peripheral equipment. With fewer data centers, utility power expenses (i.e. power generation and cooling) can result in savings on time/distance, labor, and facility costs. According to Jones Lang LaSalle[1], several of the following efficiencies can be realized:

4.3.3.1 1 watt saved at the server component (equipment) level ultimately can save up to 2.8 Watts when the power conversion equipment, power distribution, uninterruptible power systems, cooling and switchgear are taken into consideration.

4.3.3.2 Typically, data centers use 1.07 watt of cooling for every 1 watt of equipment.

4.3.3.3 30% of the energy efficiency opportunities are generally found in hardware choices, 11% in best operating practices, and 11% in cooling efficiencies. Some specific areas include matching cooling to the heat load and increasing the overall temperature while eliminating hot spots, minimizing outside air, and controlling lights.

4.3.3.4 The average computer room has 3 times more cooling than the actual heat load underutilizing the cooling capability and costing more to operate.

Note[1]: Jones Lang LaSalle, (2009).WebCast: How to reduce costs by greening your data centers [Email]. Retrieved August 25, 2009 from: www.us.joneslanglasalle.com

4.3.4 Moving forward over time, as consolidation efforts mature and agency technology requirements are refined; virtualization and rationalization of servers are possible thus maximizing the use of server assets. Severs can be virtualized to reduce energy and greenhouse gas emissions.

4.3.5 Effective resource management with the use of already limited staff resources to share across all agencies. This results in specialized expertise of trained individuals to effectively maintain the varied and complex set of technologies to improve service reliability.

4.4 State Owned Blackberries

According to a recent email study questionnaire, there are a total of 1177 Blackberry devices owned by the state. An agency breakdown of Blackberry ownership is shown in Appendix G.

4.4.1 Reimbursement of personal cell phone use is not a practice of ITE.

4.4.2 The Verizon one year plan supports the Blackberry service for $29.99 per month. For certain Blackberry models, the Verison plan includes free network use as part of the purchase. DAS is currently standardizing on the free model. US Cellular offers free or one cent phones for 18 month contracts. Western States Contracting Alliance (WSCA) pricing is available when using Verizon. A discount off of consumer pricing for devices is available with US Cellular.

4.4.3 All personnel requiring cell phones for work related activities such as “on call” or “on standby” have been issued a state owned phone.

4.4.4 We get a discounted rate from Verizon for having all of the Blackberries on one share plan. With US Cellular they have a good voice only plan that we only pay if we use it.

4.4.5 The current standard for cell phone carrier plans is Verizon Wireless. There are a few cases where deviations are necessary to the standard. In cases where technology compatibility and coverage are an issue vendors such as US Cellular, AT&T, and Nextel are used.

4.5 Technology Refresh Cycles

DAS-ITE uses a three-to-five year equipment refresh cycle. Upgrades to software applications are based on current technology trends and the industry systems development lifecycle. Technology deployment is based on agency business requirements.

Appendix A. Iowa Code Requirements - State Technology Roles

A1. Department of Administrative Services - State Technology Role

According to IAC 8A.203, "The Director of Administrative Services shall do all of the following as it relates to information technology services:

A1.1 Prescribe and adopt information technology standards and rules.

A1.2 Develop and recommend legislative proposals deemed necessary for the continued efficiency of the department in performing information technology functions, and review legislative proposals generated outside of the department which are related to matters within the department's purview.

A1.3 Provide advice to the governor on issues related to information technology.

A1.4 Consult with agencies and other governmental entities on issues relating to information technology.

A1.5 Work with all governmental entities in an effort to achieve the information technology goals established by the department."

A2. DAS Information Technology Services - State Technology Role

IAC 8A.202 defines DAS IT Service "mission - powers and duties – responsibilities:

A2.1 Mission. The mission of the department as it relates to information technology services is to provide high-quality, customer-focused information technology services and business solutions to government and to citizens.

A2.2 Powers and duties of the department. The powers and duties of the department as it relates to information technology services shall include, but are not limited to, all of the following:

A2.2.1 Providing information technology to agencies and other governmental entities.

A2.2.2 Implementing the strategic information technology plan.

A2.2.3 Developing and implementing a business continuity plan, as the director determines is appropriate, to be used if a disruption occurs in the provision of information technology to participating agencies and other governmental entities.

A2.2.4 Prescribing standards and adopting rules relating to information technology and procurement, including but not limited to system design and systems integration and interoperability, which shall apply to all participating agencies except as otherwise provided in this chapter. The department shall implement information technology standards as established pursuant to this chapter which are applicable to information technology procurements for participating agencies.

A2.2.5 Developing and maintaining security policies and systems to ensure the integrity of the state's information resources and to prevent the disclosure of confidential records.

A2.2.6 Developing and implementing effective and efficient strategies for the use and provision of information technology for participating agencies and other governmental entities.

A2.2.7 Coordinating the acquisition of information technology by participating agencies in furtherance of the purposes of this chapter. The department shall institute procedures to ensure effective and efficient compliance with the applicable standards established pursuant to this subchapter. This subchapter shall not be construed to prohibit or limit a participating agency from entering into an agreement or contract for information technology with a qualified private entity.

A2.2.8 Entering into contracts, leases, licensing agreements, royalty agreements, marketing agreements, memorandums of understanding, or other agreements as necessary and appropriate to administer this subchapter.

A2.2.9 Requesting that a participating agency provide such information as is necessary to establish and maintain an inventory of information technology used by participating agencies, and such participating agency shall provide such information to the department in a timely manner. The form and content of the information to be provided shall be determined by the department.

A2.2.10 Charging reasonable fees, costs, expenses, charges, or other amounts to an agency, governmental entity, public official, or person or entity related to the provision, sale, use, or utilization of, or cost sharing with respect to, information technology and any intellectual property interests related thereto; research and development; proprietary hardware, software, and applications; and information technology architecture and design. The department may enter into nondisclosure agreements and take any other legal action reasonably necessary to secure a right to an interest in information technology development by or on behalf of the state of Iowa and to protect the state of Iowa's proprietary information technology and intellectual property interests. The provisions of chapter 23A relating to noncompetition by state agencies and political subdivisions with private enterprise shall not apply to department activities authorized under this paragraph.

A2.2.11 Charging reasonable fees, costs, expenses, charges, or other amounts to an agency, governmental entity, public official, or other person or entity to or for whom information technology or other services have been provided by or on behalf of, or otherwise made available through, the department.

A2.2.12 Providing, selling, leasing, licensing, transferring, or otherwise conveying or disposing of information technology, or any intellectual property or other rights with respect thereto, to agencies, governmental entities, public officials, or other persons or entities.

A2.2.13 Entering into partnerships, contracts, leases, or other agreements with public and private entities for the evaluation and development of information technology pilot projects.

A2.2.14 Initiating and supporting the development of electronic commerce, electronic government, and internet applications across participating agencies and in cooperation with other governmental entities. The department shall foster joint development of electronic commerce and electronic government involving the public and private sectors, develop customer surveys and citizen outreach and education programs and material, and provide for citizen input regarding the state's electronic commerce and electronic government applications.

A2.3 Responsibilities. The responsibilities of the department as it relates to information technology services include the following:

A2.3.1 Coordinate the activities of the department in promoting, integrating, and supporting information technology in all business aspects of state government.

A2.3.2 Provide for server systems, including mainframe and other server operations, desktop support, and applications integration.

A2.3.3 Provide applications development, support, and training, and advice and assistance in developing and supporting business applications throughout state government.

A2.3.4 Information technology charges. The department shall render a statement to an agency, governmental entity, public official, or other person or entity to or for whom information technology, value-added services, or other items or services have been provided by or on behalf of, or otherwise made available through, the department. Such an agency, governmental entity, public official, or other person or entity shall pay an amount indicated on such statement in a manner determined by the department.

A2.3.5 Dispute resolution. If a dispute arises between the department and an agency for which the department provides or refuses to provide information technology, the dispute shall be resolved as provided in section 679A.19."

A3. The Technology Governance Board (TGB) - State Technology Role

The According to IAC 11-20.1(1), IAC 11-20.1(2), and IAC 11-20.8(1-7) the TGB mission, powers, and duties are:

A3.1 "Establishment. The technology governance board is established within the department of administrative services by 2005 Iowa Acts, chapter 90.

A3.2 Mission. The mission of the technology governance board is to set priorities for statewide technology investments and initiatives and to assist the department of management and the state's chief information officer in developing a statewide information technology budget. The budget shall reflect the total information technology spending of the executive branch, resulting in better decision making and financial investment performance reporting.

A3.3 Spending and savings report. On an annual basis, the board shall prepare a report to the governor, the department of management, and the general assembly regarding the

total spending on technology for the previous fiscal year, the total amount appropriated for the current fiscal year, and an estimate of the amount to be requested for the succeeding fiscal year for all agencies. The report shall include a five-year projection of technology cost savings, an accounting of the level of technology cost savings for the current fiscal year, and a comparison of the level of technology cost savings for the current fiscal year with that of the previous fiscal year. This report shall be filed as soon as possible after the close of a fiscal year, and by no later than the second Monday of January of each year.

A3.4 Budget and accounts. The board shall work with the department of management and the state accounting enterprise of the department, pursuant to Iowa Code section 8A.502, to maintain the relevancy of the central budget and proprietary control accounts of the general fund of the state and special funds to information technology, as those terms are defined in Iowa Code section 8.2.

A3.5 Rules. The board shall develop and approve administrative rules governing the activities of the board to be adopted under the department's name.

A3.6 Standards. In conjunction with the department, the board shall develop and adopt standards with respect to procurement of information technology that shall be applicable to all agencies.

A3.7 Service and initiative recommendations. The board shall make recommendations to the department regarding all of the following:

A3.7.1 Technology utility services to be implemented by the department or other agencies.

A3.7.2 Improvements to information technology service levels and modifications to the business continuity plan for information technology operations developed by the department pursuant to Iowa Code section 8A.202 for agencies, and to maximize the value of information technology investments by the state.

A3.7.3 Information technology initiatives for the executive branch.

A3.8 Fees for electronic access. The board shall review fee proposals for value-added services from state agencies and other governmental entities that have been recommended to the board by the IowAccess advisory council and shall submit decisions regarding such fees approved by the board to the department of management. In establishing the fees for value-added services, the board shall consider the reasonable cost of creating and organizing government information into a gateway for one-stop electronic access to government information and transactions, whether federal, state, or local.

A3.9 Advisory groups. The board shall designate advisory groups as appropriate to assist the board in all of the following:

A3.9.1 Development and adoption of an executive branch strategic technology plan.

A3.9.2 Annual review of technology operating expenses and capital investment budgets of agencies by October 1 for the following fiscal year, and development of technology costs savings projections, accountings, and comparison.

A3.9.3 Quarterly review of requested modifications to information technology budgets of agencies due to funding changes.

A3.9.4 Review and approval of all requests for proposals having an information technology component prior to issuance for all information technology devices, hardware acquisitions, information technology services, software development projects, and information technology outsourcing for agencies that exceed the greater of a total cost of $50,000 or a total involvement of 750 agency staff hours.

A3.9.5 Development of a plan and process to improve service levels and continuity of business operations, and to maximize the value of information technology investments.

A3.9.6 Formation of internal teams to address cost-savings initiatives, including consolidation of information technology and related functions among agencies, as enacted by the technology governance board.

A3.9.7 Development of information technology standards.

A3.9.8 Development of rules, processes, and procedures for implementation of aggregate purchasing among agencies."

A4. Information Technology Standards - State Technology Role

According to IAC 11-25.5(8A)(5)," Goals for information technology standards.

The underlying purpose of operational standards involving information technology shall be one or more of the following:

A4.1 To promote consistency in the automation of systems;

A4.2 To eliminate duplicative development efforts;

A4.3 To ensure continuity of ongoing state operations;

A4.4 To promote administrative efficiencies relating to development and maintenance of systems;

A4.5 To enable the state to realize its full purchasing power from the use of a statewide, enterprise approach to the selection of technology solutions; and

A4.6 To enhance security of systems and protection of personal information."

A5. Agencies Exempt from DAS IT & TGB Administrative Rules and Standards

According to IAC 8A.201(4),"' Participating agency' means any agency other than any of the following:

A5.1 The state board of regents and institutions operated under the authority of the state board of regents.

A5.2 The public broadcasting division of the department of education.

A5.3 The state department of transportation mobile radio network.

A5.4 The department of public safety law enforcement communications systems and capitol complex security systems in use for the legislative branch.

A5.5 The telecommunications and technology commission established in section 8D.3, with respect to information technology that is unique to the Iowa communications network.

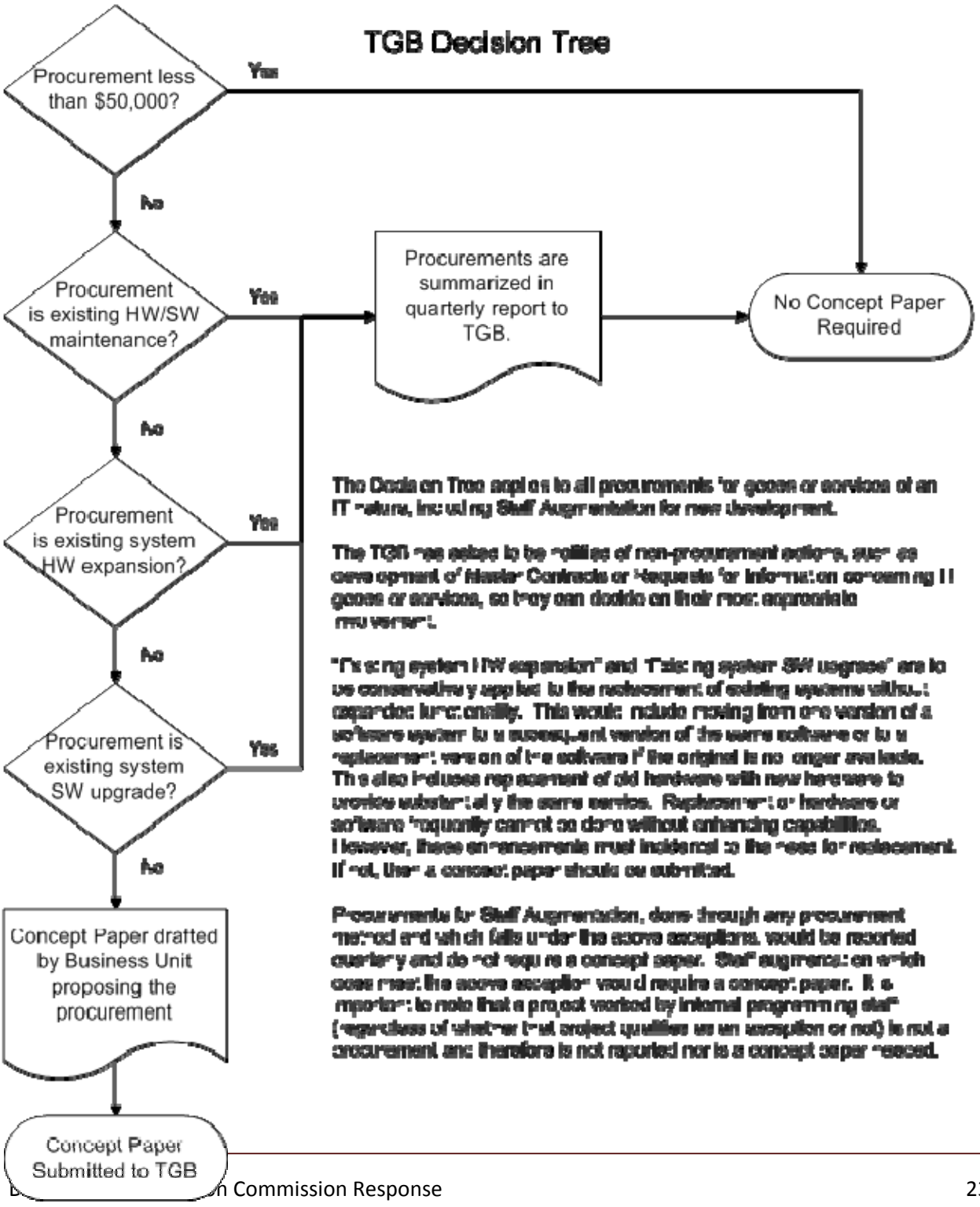
A5.6 The Iowa lottery authority.

A5.7 A judicial district department of correctional services established pursuant to section 905.2.

A5.8 The Iowa finance authority, including the title guaranty division."

A5.9 According to IAC 97B.4(2d) IPERS is exempt: "In administering this chapter, the system shall not be a participating agency for purposes of chapter 8A, subchapter II."

Appendix B. Technology Governance Board Decision Tree



Appendix C. Iowa CIO's/Agency IT Contacts

Count	Agency	CIO Name[1]	Job Classification	Salary[2]
1.	ABD	Bruce Ireland	ITS SPEC 5	91,556.17
2.	AG	John Boccella	ITS SPEC 5	83,534.00
3.	AOS	Erwin Erickson	PUB SER EX 4	99,260.40
4.	BLIND	Curtis Chong	PUB SER EX 3	81,379.73
5.	ICN/DAS	John Gillispie	EXC DIR/ITTC	164,542.06
6.	DCA	Walter Ladd	ITS SPEC 3	66,034.38
7.	DHR	Laura Roeder-Grubb	ITS SPEC 5	75,918.70
8.	DHS	Thomas Huisman	PUB SER EX 5	109,924.40
9.	DIA	Timothy McLaughlin	ITS SPEC 5	86,992.00
10.	DNR	Rick Hindman	IT ADMIN 3	106,004.00
11.	DOC	Kevin VandeWall	ITS SPEC 5	87,019.60
12.	DOT	Steven Gast	Transportation Division Director	125,528.00
13.	DPD	Lesa Quinn	IT ADMIN 2	94,706.80
14.	DPS	Leon Frederick	IT ADMIN 3	106,404.80
15.	DVRS	Steven Nicoll	IT ADMIN 2	94,697.20
16.	IBOP	Clarence Key	PUB SER EX 3	85,516.80
17.	ICRC	Ralph Rosenberg	DIR CIVL RT	94,615.80
18.	ICSAC	Dan Powers	IT ADMIN 1	72,636.40
19.	IDALS	Ron Hein	ITS SPEC 5	87,010.00
20.	IDCU	Brad Huyser	CRED UN EX SR	93,834.35
21.	IDED	Don Dursky	EX OFF 3	79,438.40
22.	IDOB	Kay Anderson	PUB SER EX 4	84,465.20
23.	IDOM	Verne Logan	ITS SPEC 5	86,774.40
24.	IDPH	Dale Anthony	IT ADMIN 3	106,821.20
25.	IDR	Rich Jacobs	PUB SER EX 5	114,247.20
26.	IECD	Karen Hudson	EX SECRETARY	55,827.20
27.	IFA	Kerry Carman	IT ADMIN 2	93,266.40
28.	IID	Alan Harder	ASST CH INSU	98,081.76
29.	ILEA	Peter Paeth	ITS SPEC 2	57,008.40
30.	ILOT	Evelyn Halterman	IT ADMIN 3	109,084.40
31.	IPTV	Bill Hayes	PUB SER EX 4	99,236.40
32.	IRGC	Karyl Jones	PUB SER EX 3	87,010.00
33.	IUB	Margaret Munson	UTL ADM 1	104,080.40
34.	IVH	Rob Buchwald	IT ADMIN 2	92,605.60
35.	IWD	Robert Hellstern	IT ADMIN 3	103,043.20
36.	LIB	Marie Harms	LIB CONSLT	66,980.00
37.	ODCP	Dennis Wiggins	MGT ANLST 4	73,198.80
38.	PERB	Susan Bolte	AD LAW JDG 2	98,462.80
39.	SPD	Sara Rapp	MGT ANLST 4	79,096.80

[1]Note: Names obtained from the IA Chief Information Officers Distribution List 8-24-09.
[2]Note: Salaries obtained from the 2008 LSA

Appendix D. IT Job Classification Graphs

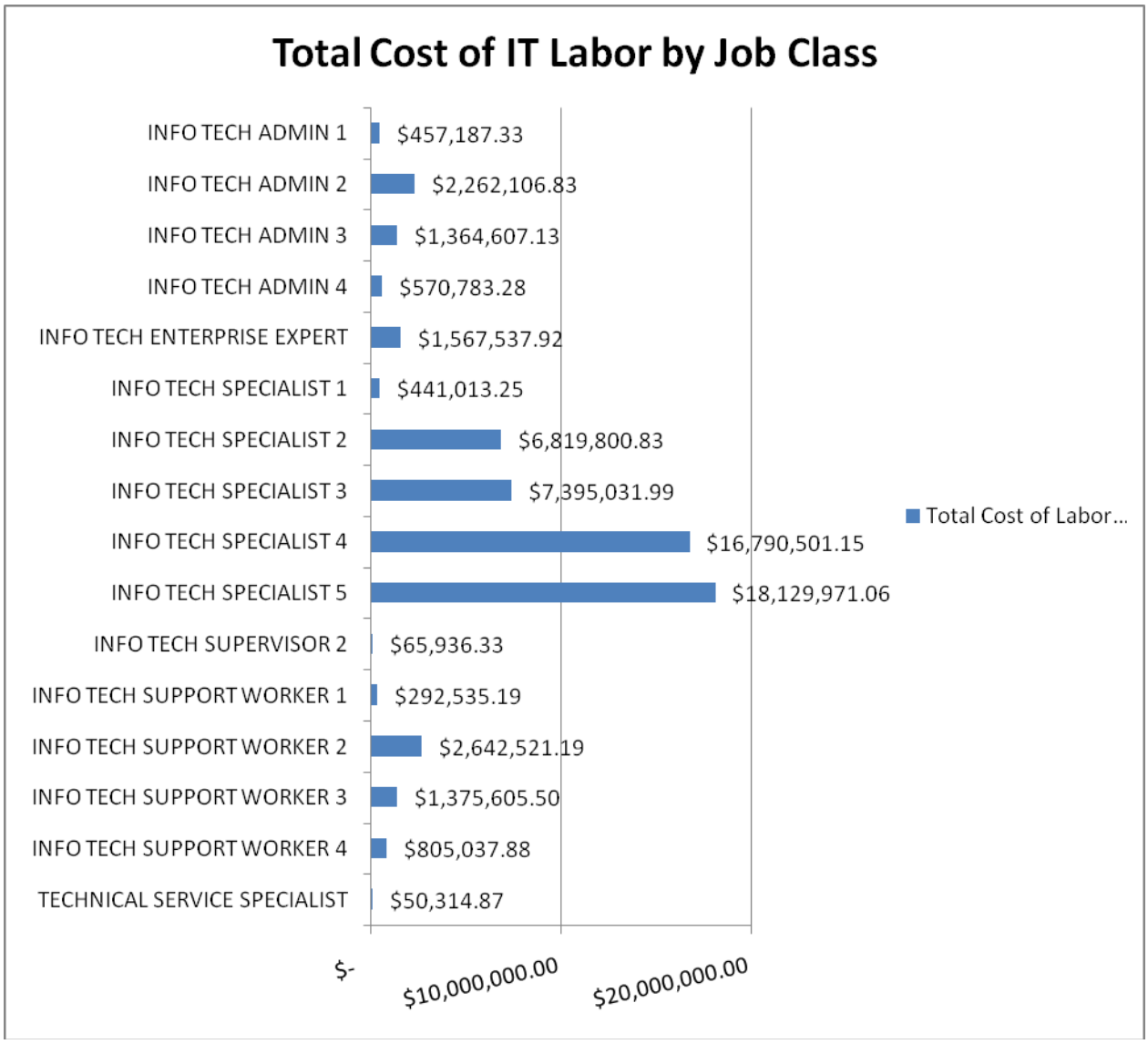


Figure D1. Shows the loaded labor rate for IT job classifications using median HR salary plans X 1.29 single person benefits factor. Source: DAS HRE, HRIS Database Query, August 2009.

Appendix D. IT Job Classification Graphs Cont'd

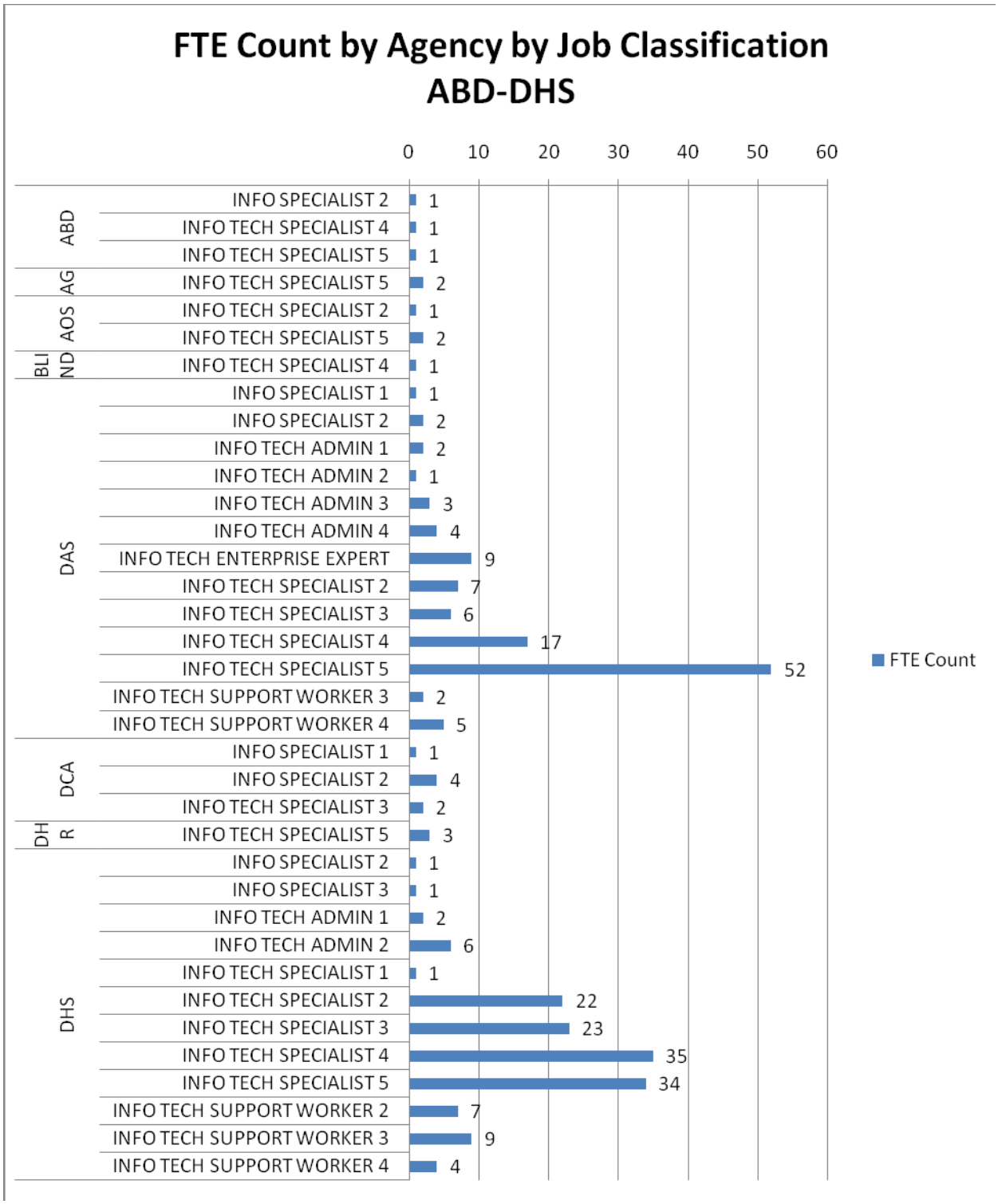


Figure D2. Shows the breakdown of Job Class by Agency for ABD through DHS. Source: HRIS Database.

Appendix D. IT Job Classification Graphs Cont'd

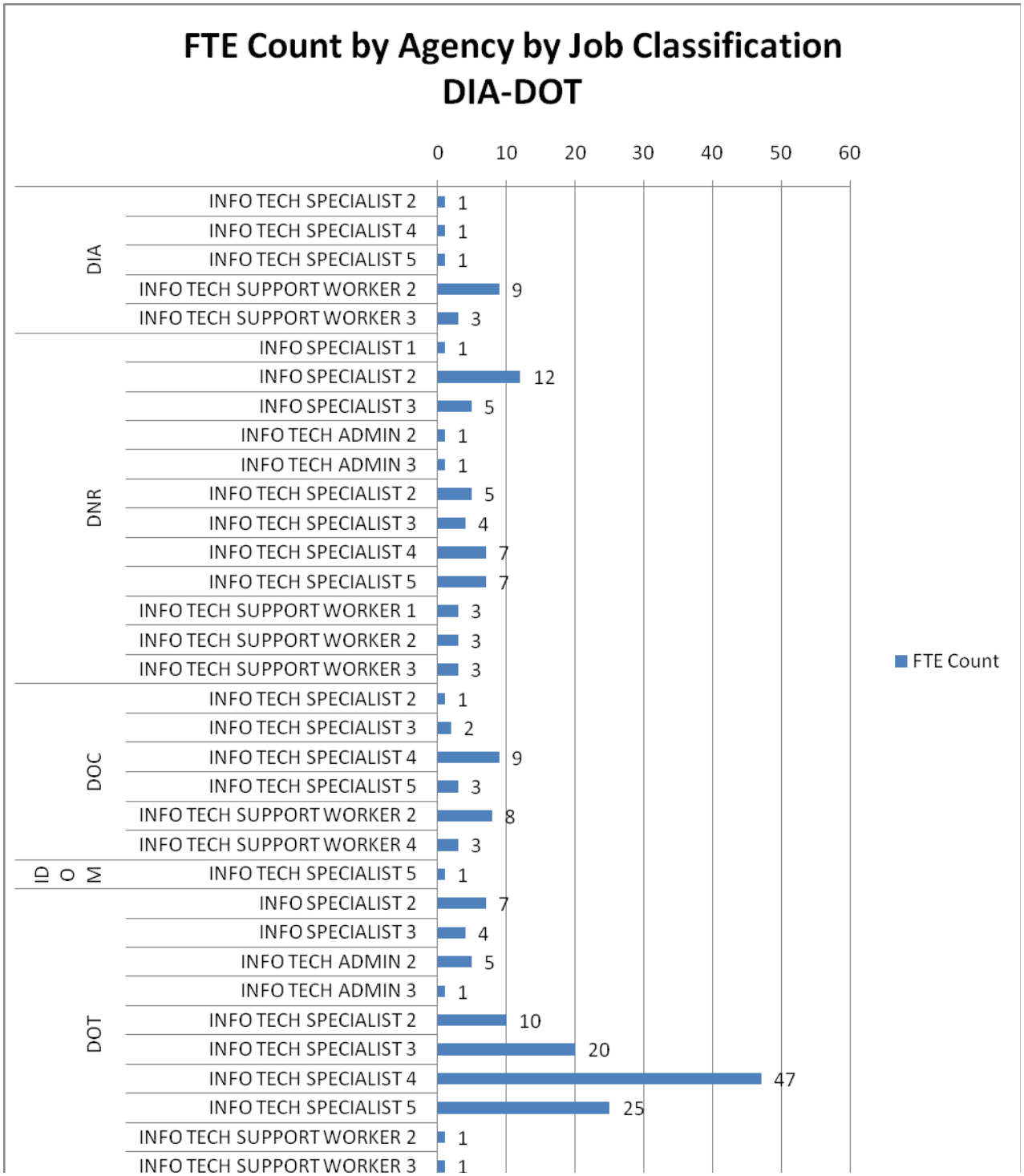


Figure D3. Shows the breakdown of Job Class by Agency for DIA through DOT. Source: HRIS Database.

Appendix D. IT Job Classification Graphs Cont'd

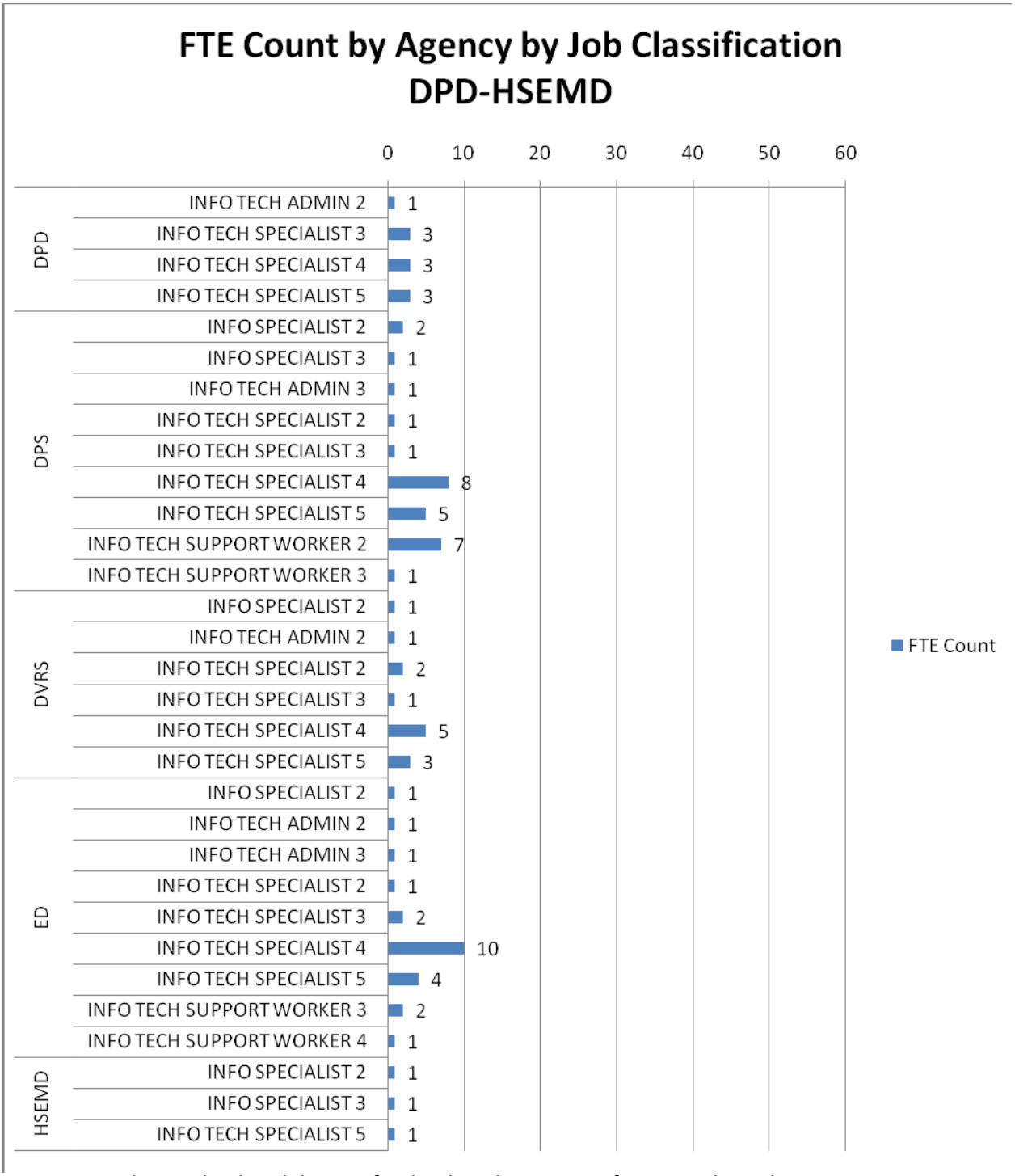


Figure D4. Shows the breakdown of Job Class by Agency for DPD through HSEMD. Source: HRIS Database.

Appendix D. IT Job Classification Graphs Cont'd

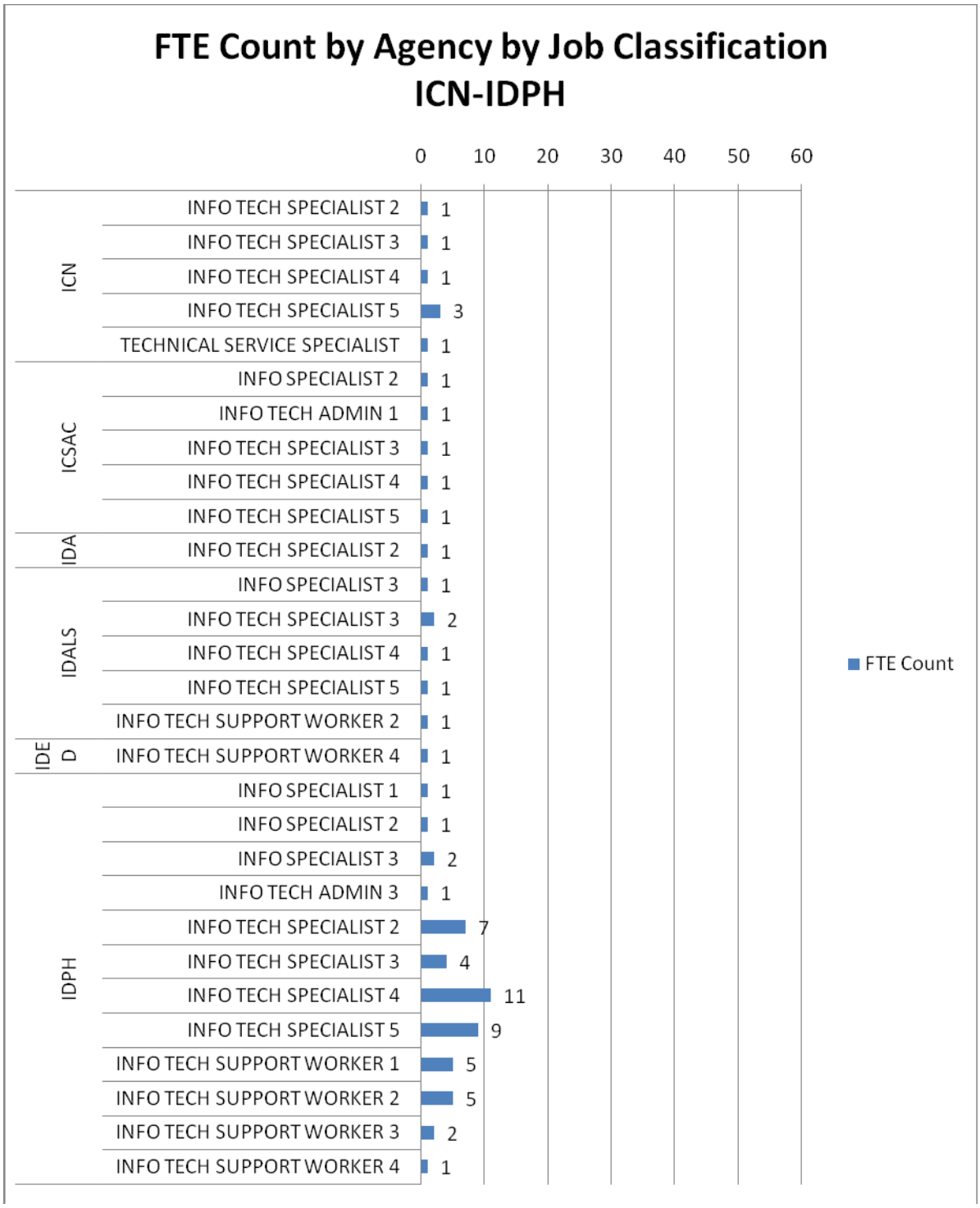


Figure D5. Shows the breakdown of Job Class by Agency for ICN through IDPH. Source: HRIS Database.

Appendix D. IT Job Classification Graphs Cont'd

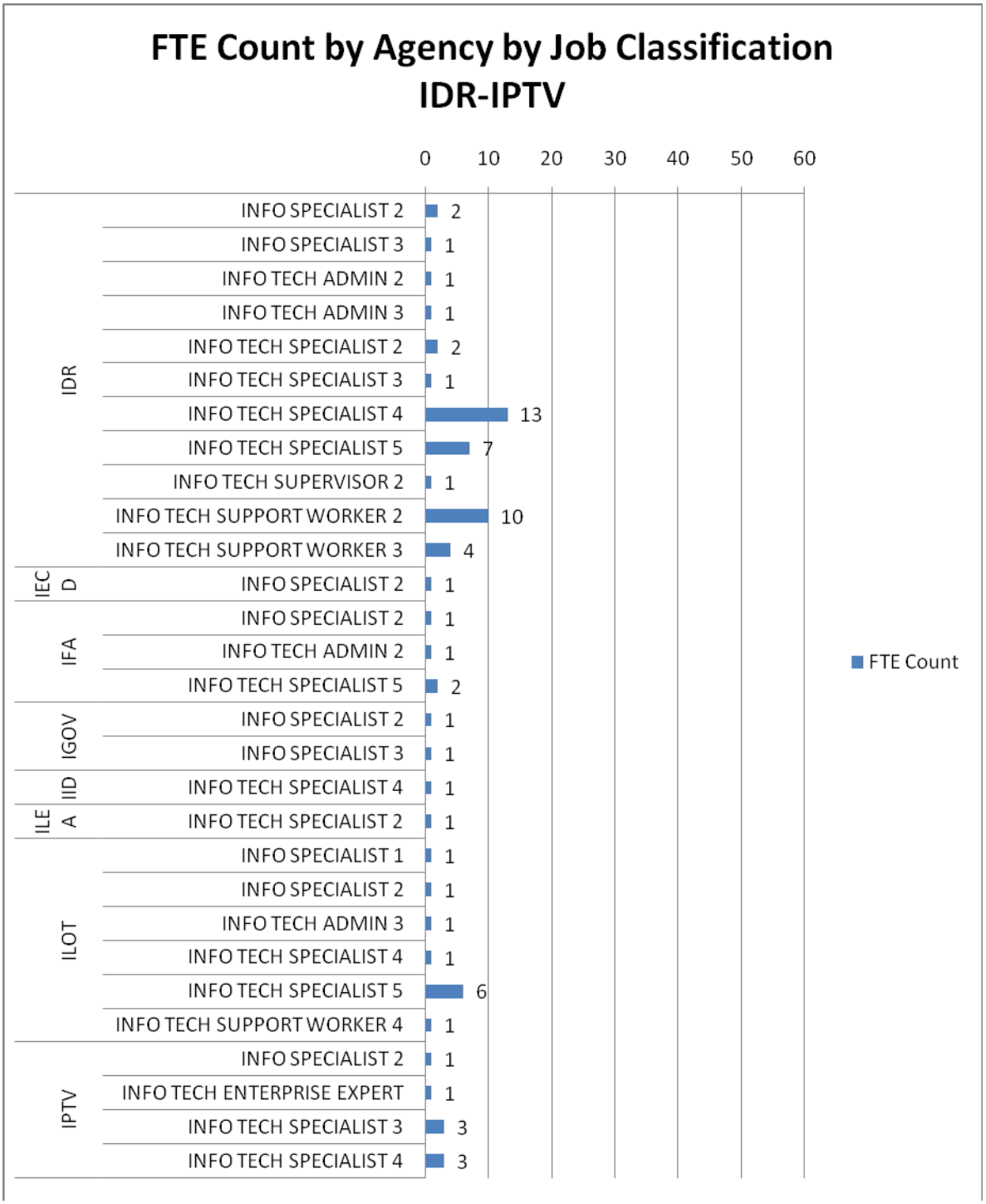


Figure D6. Shows the breakdown of Job Class by Agency for IDR through IPTV. Source: HRIS Database.

Appendix D. IT Job Classification Graphs Cont'd

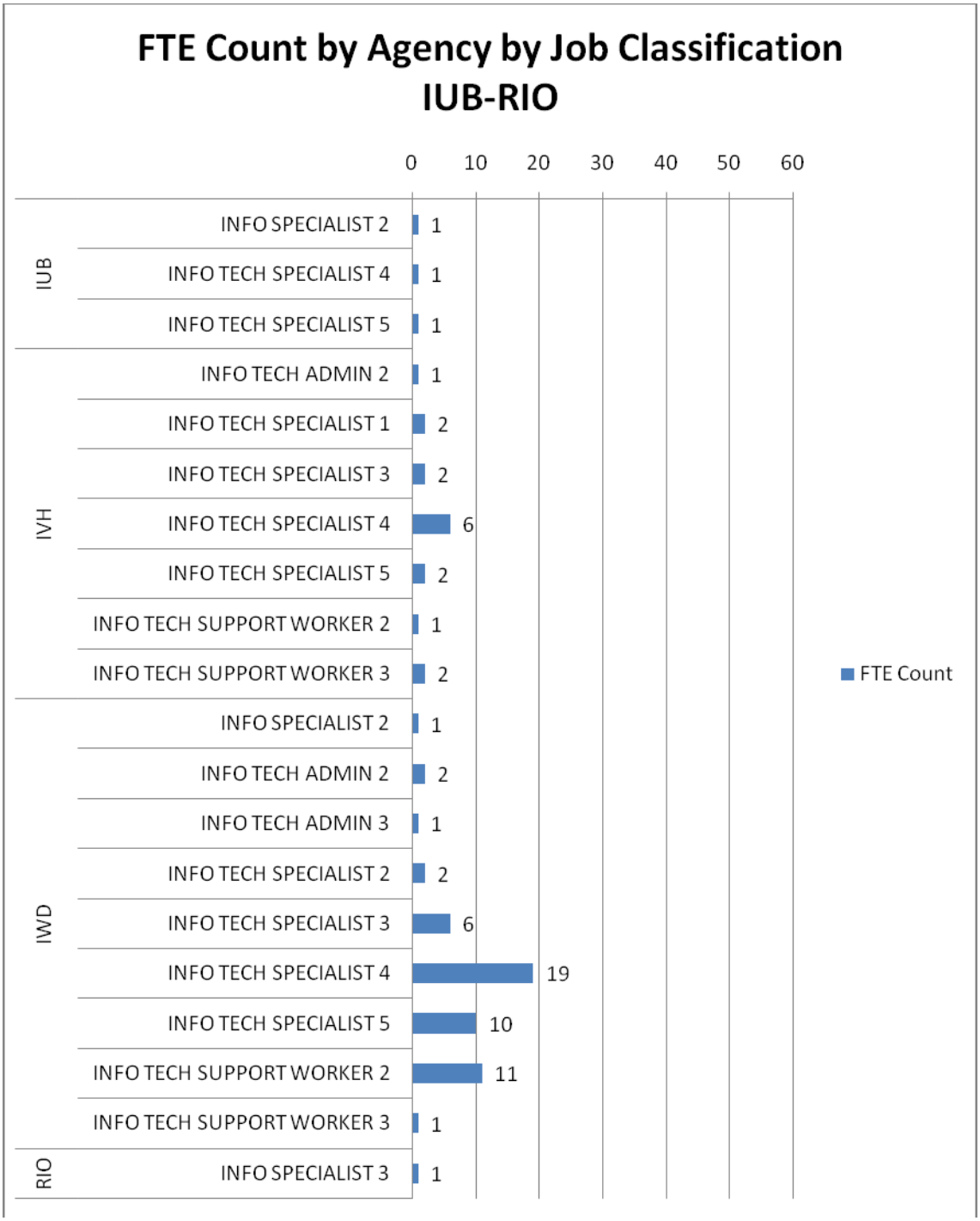


Figure D7. Shows the breakdown of Job Class by Agency for IDR through IPTV. Source: HRIS Database.

Appendix E. Typical IT Equipment and Site Infrastructure System Characteristics, by Space Type

Space Type	Typical Size	Typical IT Equipment Characteristics	Typical Site Infrastructure System Characteristics
Server closet	*<200 ft2*	*1-2 servers* *No External Storage*	*Typically conditioned through an office HVAC system. To support VOIP and wireless applications, UPS and DC power systems are sometimes included in server closets. Environmental conditions are not as tightly maintained as for other data center types. HVAC energy efficiency associated with server closets is probably similar to the efficiency of office HVAC.*
Server room	*<500 ft2*	*A few to dozens of servers* *No External Storage*	*Typically conditioned through an office HVAC system, with additional cooling capacity, probably in the form of a split system specifically designed to condition the room. The cooling system and UPS equipment are typically of average or low efficiency because there is no economy of scale to make efficient systems more cost competitive.*
Localized data center	*<1,000 ft2*	*Dozens to hundreds of servers* *Moderate External Storage*	*Typically use under-floor or overhead air distribution systems and a few in-room computer room air conditioner (CRAC) units. CRAC units in localized data centers are more likely to be air cooled and have constant-speed fans and are thus relatively low efficiency. Operational staff is likely to be minimal, which makes it likely that equipment orientation and airflow management are not optimized. Air temperature and humidity are tightly monitored. However, power and cooling redundancy reduce overall system efficiency.*
Mid-tier data center	*<5,000 ft2*	*Hundreds of servers* *Extensive External Storage*	*Typically use under-floor air distribution and in-room CRAC units. The larger size of the center relative to those listed above increases the probability that efficient cooling, e.g., a central chilled water plant and external storage central air handling units with variable speed fans, is used. Staff at this size data center may be aware of equipment orientation and airflow management best practices. However, power and cooling redundancy may reduce overall system efficiency.*
Enterprise-class data	*5,000+ ft2*	*Hundreds to thousands of servers* *Extensive External Storage*	*The most efficient equipment is expected to be found in these large data centers. Along with efficient center cooling, these data centers may have energy management systems. Equipment orientation and extensive airflow management best practices are most likely external storage implemented. However, enterprise-class data centers are designed with maximum redundancy, which can reduce the benefits gained from the operational and technological efficiency measures.*

Source: (U.S. Environmental Protection Agency, 2007)

Appendix F. Server Locations and Type by Agency

Agency	Location	Sqft Available	Sqft Used	Site Type	Count
ABD	1918 SE Hulsizer Ave., Ankeny	500	250	Localized data center	1
BLIND	524 4th St Des Moines	320	320	Server room	1
DAS	1305 East Walnut - Des Moines	9,175	5,818	Enterprise class data center	1
DAS	7700 NW Beaver Drive, Johnston	3,600	2,576	Mid-tier data center	1
DCA	Historical Building, 600 E. Locust St., Des Moines	126	126	Server closet	1
DHS	3211 Edgington Avenue	96	96	Server closet	9
DHS	Various Locations	6,976	3,270	Server closet	109
DHS	601 SW 9th, Suite M, Des Moines	100	60	Server closet	1
DHS	100 Army Post Road, Des Moines	100	70	Server closet	1
DIA	321 E 12th Des Moines	115	115	Server Room	1
DNR	University of Iowa, Trowbridge Hall	168	90	Server closet	1
DNR	2390 Old Farmstead Rd	120	40	Server closet	1
DNR	7900 Hickman STE1, Windsor Heights	480	165	Server room	1
DNR	Wallace Building	374	126	Server room	1
DOC	Multiple sites	527	450	Localized data center	3
DOC	510 East 12th Street, Des Moines	215	112	Server room	1
DOC	Medical and Classification Center	319	202	Server room	1
DOT	800 Lincoln Way, Ames, IA	3,600	2,240	Localized data center	1
DOT	Scale Sites (14)	150	150	Server closet	14
DOT	Drivers License Stations	1	1	Server closet	18
DOT	6310 SE Convenience BLVD, Ankeny, IA	880	880	Server room	1
DPD	Camp Dodge	100	100	Server closet	1
DPD	Camp Dodge	105	56	Server closet	1
DPD	Camp Dodge	900	900	Server room	1
DPS	217 E 7th, Des Moines	2,700	250	Localized data center	1
DPS	3100 Fire Service Rd	8	8	Server closet	1
DPS	2240 S. Ankeny BLVD	120	12	Server closet	1
DPS	56911 White Pole Rd	8	8	Server closet	1
DPS	1510 West 1st Street	24	8	Server closet	1
DPS	5400 - 16th Avenue S.W. Cedar Rapids	28	8	Server closet	1
DPS	Public-Safety - DNE	8	8	Server closet	1
DPS	2098 150th St, Des Moines	8	8	Server closet	1
DPS	30 N.E. 48th Place, Des Moines	24	8	Server closet	1
DPS	Post 1 Statewide	24	24	Server closet	1
DPS	Post 2-15 Statewide	8	8	Server closet	14
DPS	502. East 9th, Des Moines	80	16	Server closet	1
DPS	7700 Beaver Rd, Des Moines	225	16	Server room	1
ED	Grimes 2nd floor, Des Moines	220	100	Server room	1
ICN	6100 NW 78th Avenue Johnston	6,165	6,000	Enterprise class data center	1
ICN	Lucas, 321 E 12th Street Des Moines	2,561	2,561	Mid-tier data center	1
IDCU	200 E Grand Ave, DSM	80	40	Server closet	1
IDED	200 E. Grand Ave	280	100	Server room	1
IDPH	321 E 12th Street	1,194	1,194	Localized data center	1
IDPH	Ankeny Laboratories	300	300	Server Room	1
IDR	Cedar Falls	80	24	Server closet	1
IDR	Cedar Rapids	80	24	Server closet	1

Agency	Location	Sqft Available	Sqft Used	Site Type	Count
IDR	Council Bluffs	80	24	Server closet	1
IDR	Davenport	80	24	Server closet	1
IDR	Des Moines	80	24	Server closet	1
IDR	Fort Dodge	80	24	Server closet	1
IDR	Sioux City	80	24	Server closet	1
IECD	Jessie Parker Bldg / 510 E 12th St, Ste 1A	92	38	Server closet	1
IFA	2015 Grand, Des Moines	80	40	Server closet	1
IID	330 Maple St, Des Moines	80	40	Server closet	1
ILEA	7105 NW &0th Ave LE 12 Burma Road	30	9	Server closet	2
ILOT	2323 GRAND AVE, Des Moines	80	40	Server closet	1
IRCG	717 E. Court DSM	80	40	Server closet	1
IUB	350 Maple, Des Moines	480	420	Server room	1
IVH	1301 Summit Street Marshalltown	480	240	Server room	1
IWD	1000 East Grand	3,630	300	Localized data center	1
LIB	Miller Building: 1112 E Grand Ave, Des Moines	266	180	Server room	1
SPD	Lucas Bldg, 4th Floor, Des Moines	80	40	Server closet	1
	Totals	48,970	30,421		223

Table F1. Shows the breakdown by agency for type and number of data center locations. Source: DAS Data Center and Sever Location Survey Results, August 2009.

Appendix F. Server Locations and Type By Agency Continued

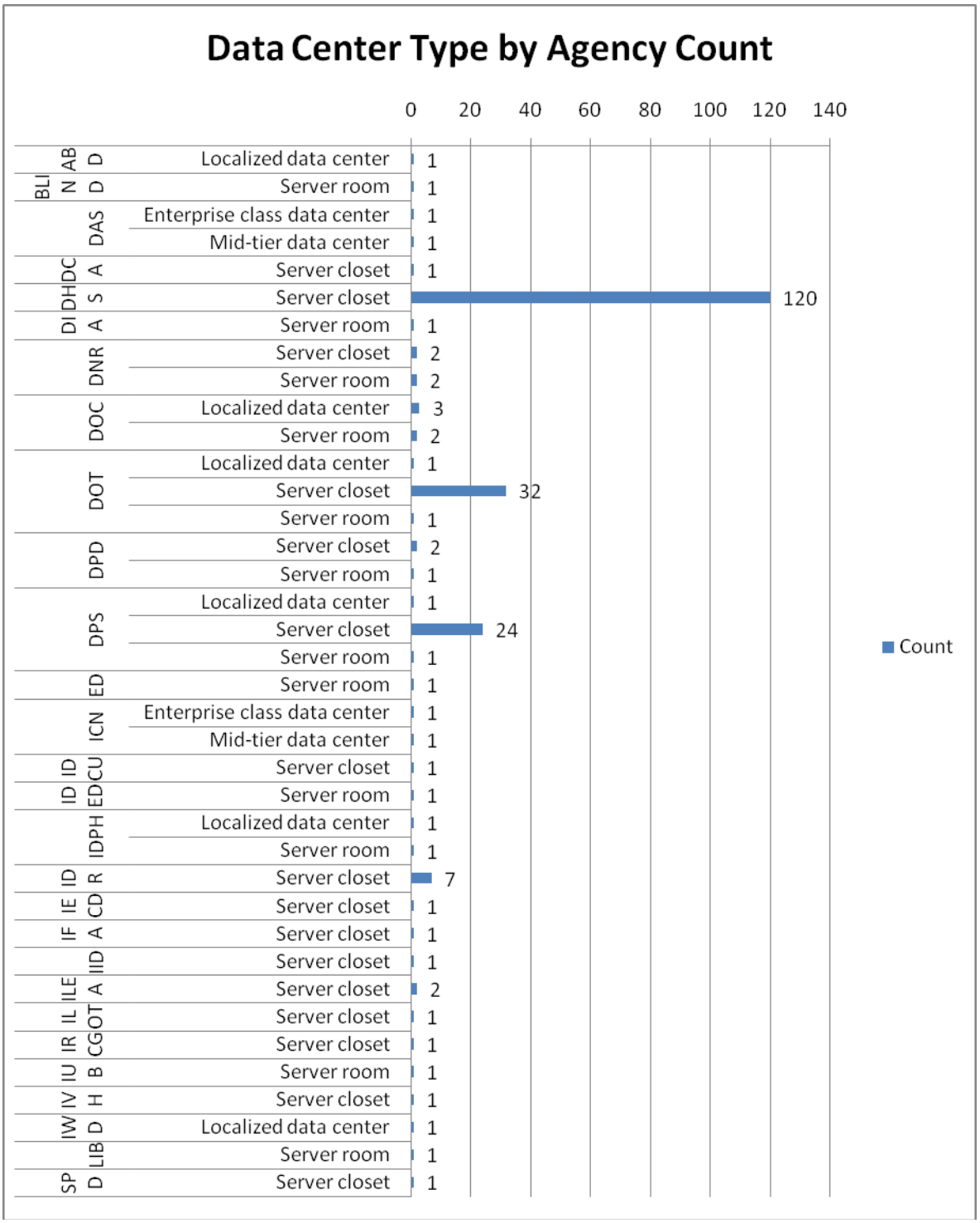
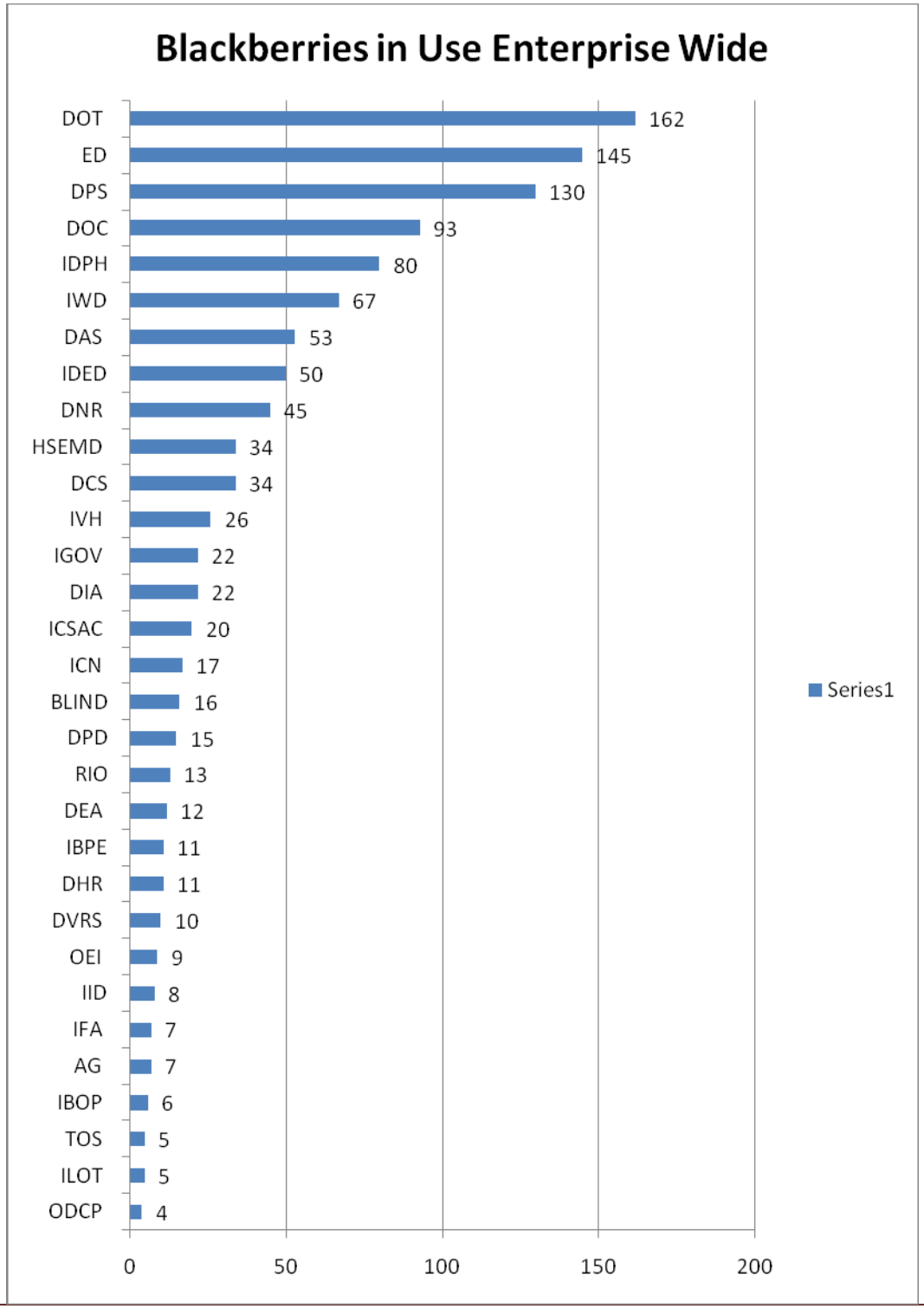


Figure F1. Shows the breakdown by agency for type and number of data center locations. Source: DAS Data Center Survey Results, August 2009.

Appendix G. Blackberry Ownership by Agency



Appendix G. Continued

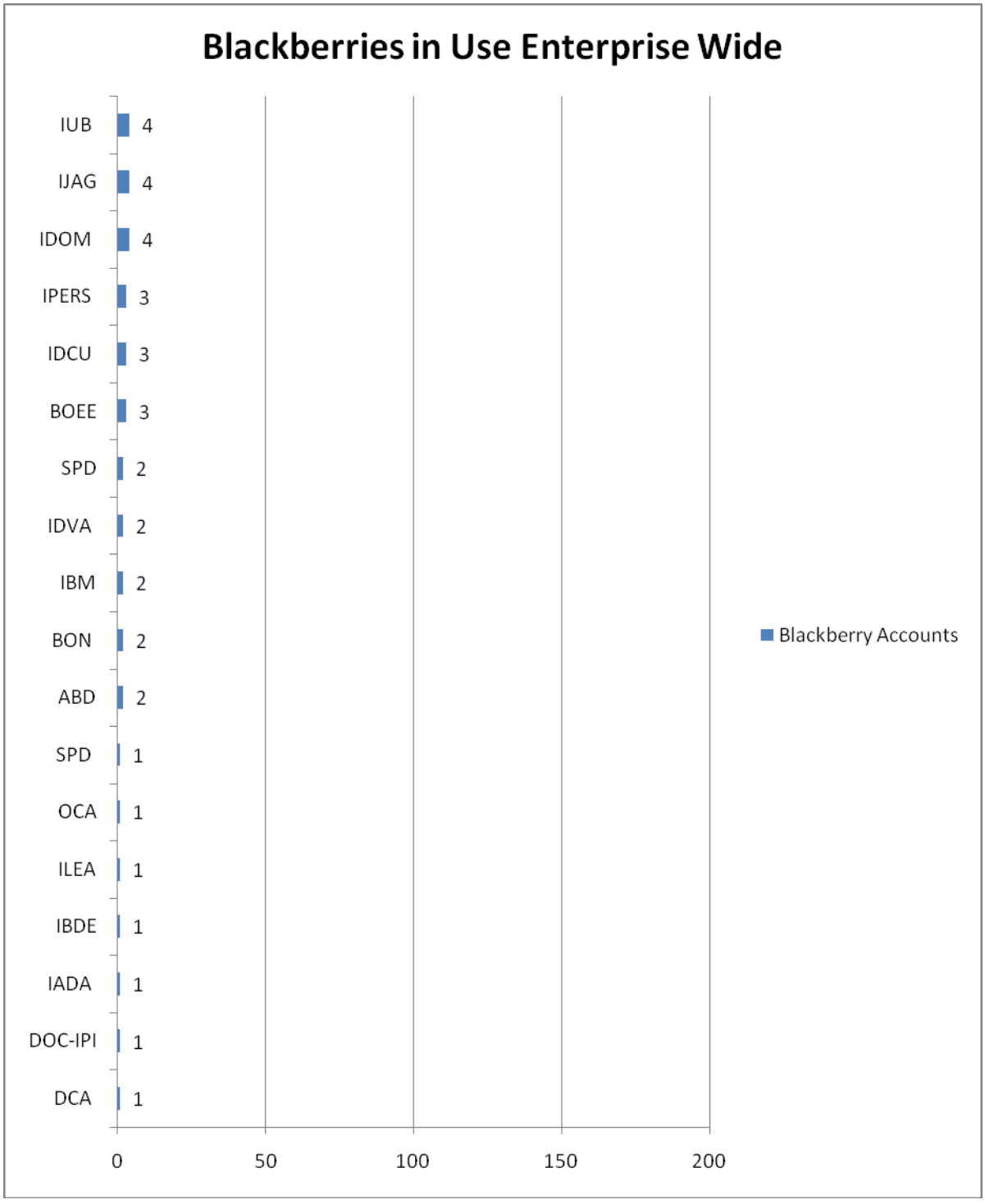
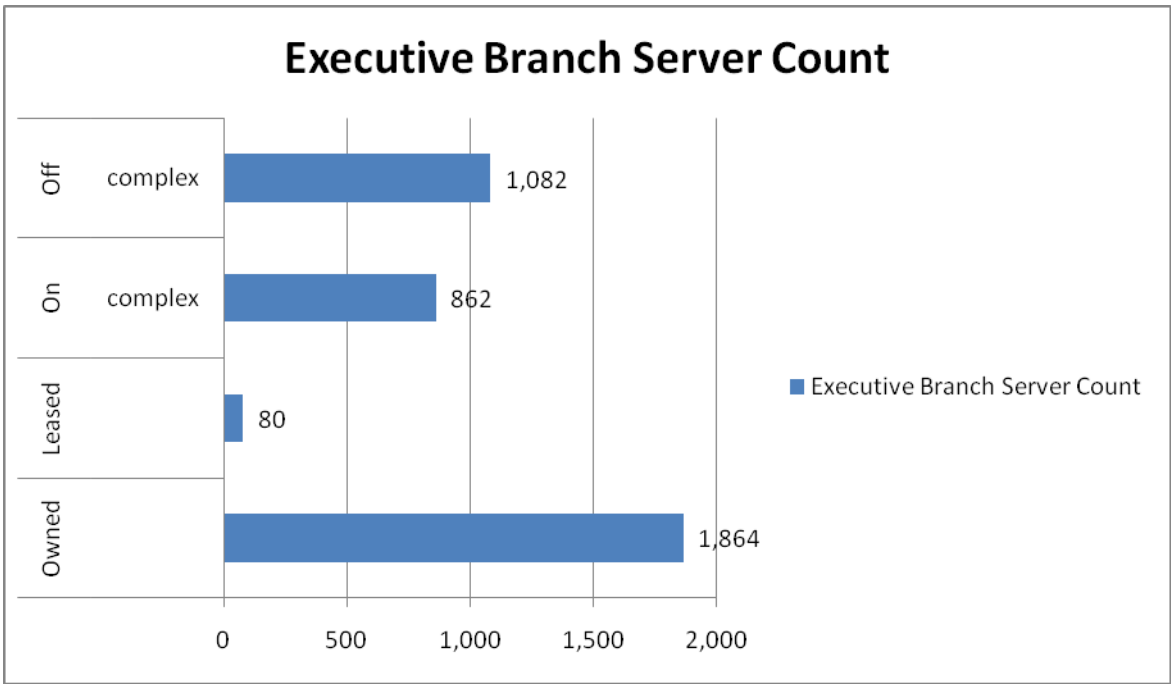


Figure G1. Shows the number of Blackberry Devices Owned by Agency. Source: Governor's Email Study Data, August 2009.



Appendix H. State Server Ownership

Figure H1. Shows the number of executive branch owned and leased servers by location. Source: DAS Server Survey, June 2009.

Organization	Owned	Leased	On complex	Off complex	Total
Administrative Services	116	79	138	57	195
Agriculture and Land Stewardship	7		2	5	7
Attorney General	10		10		10
Auditor of the State	13		10	3	13
Blind, Department for the	27			27	27
College Student Aid Commission	8		4	4	8
Commerce - Alcoholic Beverages	8			8	8
Commerce - Banking	17			17	17
Commerce - Credit Union	16			16	16
Commerce - Insurance	16			16	16
Commerce - Utilities	8			8	8
Corrections	235		16	219	235
Cultural Affairs	3		3		3
Economic Development	6			6	6
Education	33		33		33
Education - Library Services	2		2		2
Education - Vocational Rehabilitation	9		8	1	9

Organization	Owned	Leased	On complex	Off complex	Total
Elder Affairs	3		3		3
Ethics & Campaign Disclosure	1		1		1
Human Rights	12		12		12
Human Services	363		176	187	363
Inspections & Appeals	11		11		11
Iowa Communications Network	108		82	26	108
Iowa Finance Authority	12		2	10	12
Iowa Law Enforcement Academy	6			6	6
Iowa Lottery	10		10		10
Management		1	1		1
Natural Resources	79		32	47	79
Parole Board	2		2		2
Public Defense	26			26	26
Public Health	112		92	20	112
Public Health - Medicine, Board of	3			3	3
Public Health - Nursing, Board of	3			3	3
Public Safety	101		73	28	101
Revenue	35		28	7	35
Transportation	290			290	290
Veterans Affairs - Iowa Veterans Home	24			24	24
Workforce Development	129		111	18	129
TOTALS	**1,864**	**80**	**862**	**1,082**	**1,944**

Table H1. Shows the number of executive branch servers leased and owned by state agencies.

Appendix I. Non-IT Job Classes Performing IT Work

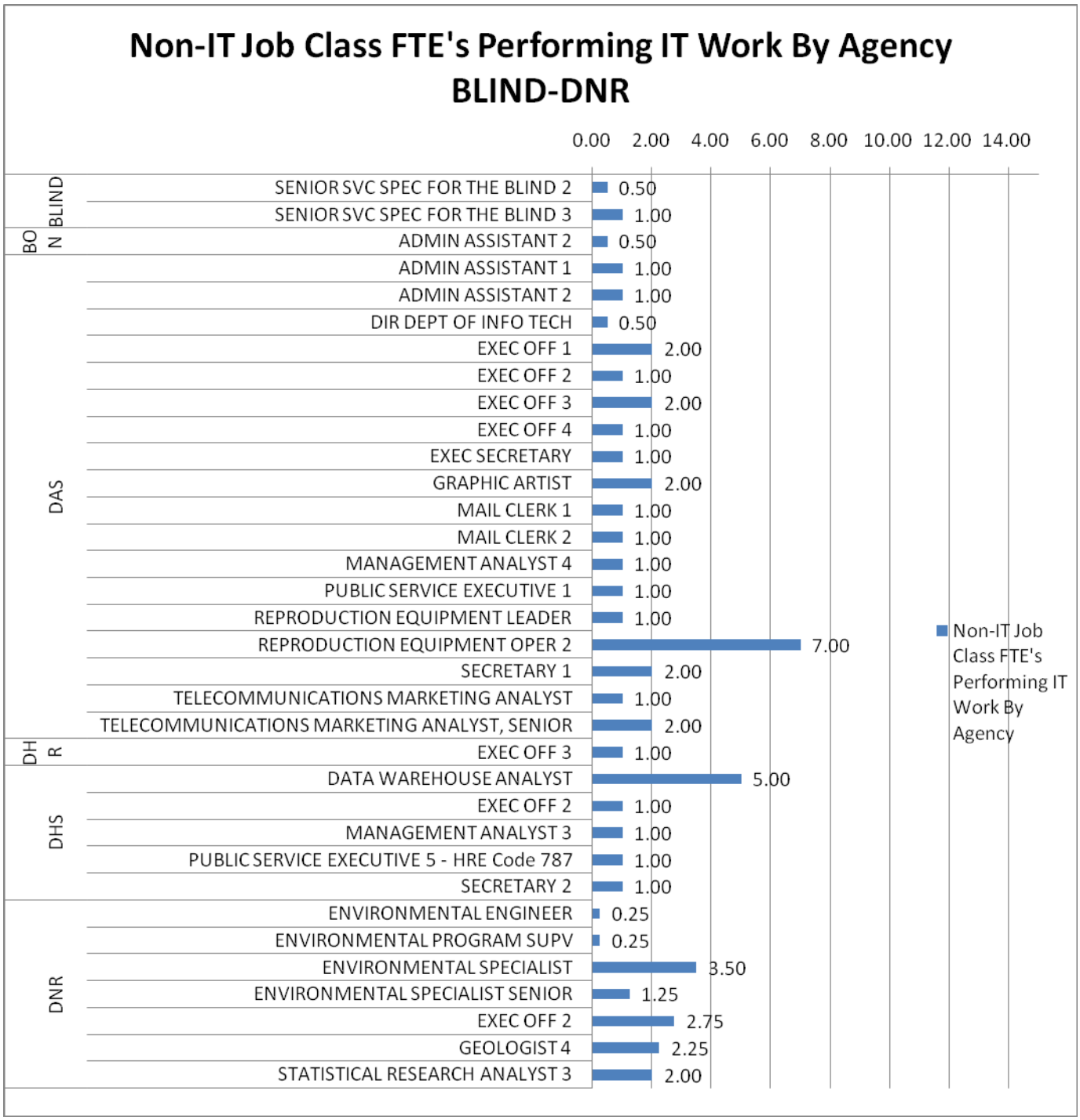


Figure I1. Shows by agency, non-IT job classification assignments. Source: TGB Annual Report, 2009.

Appendix I. Continued

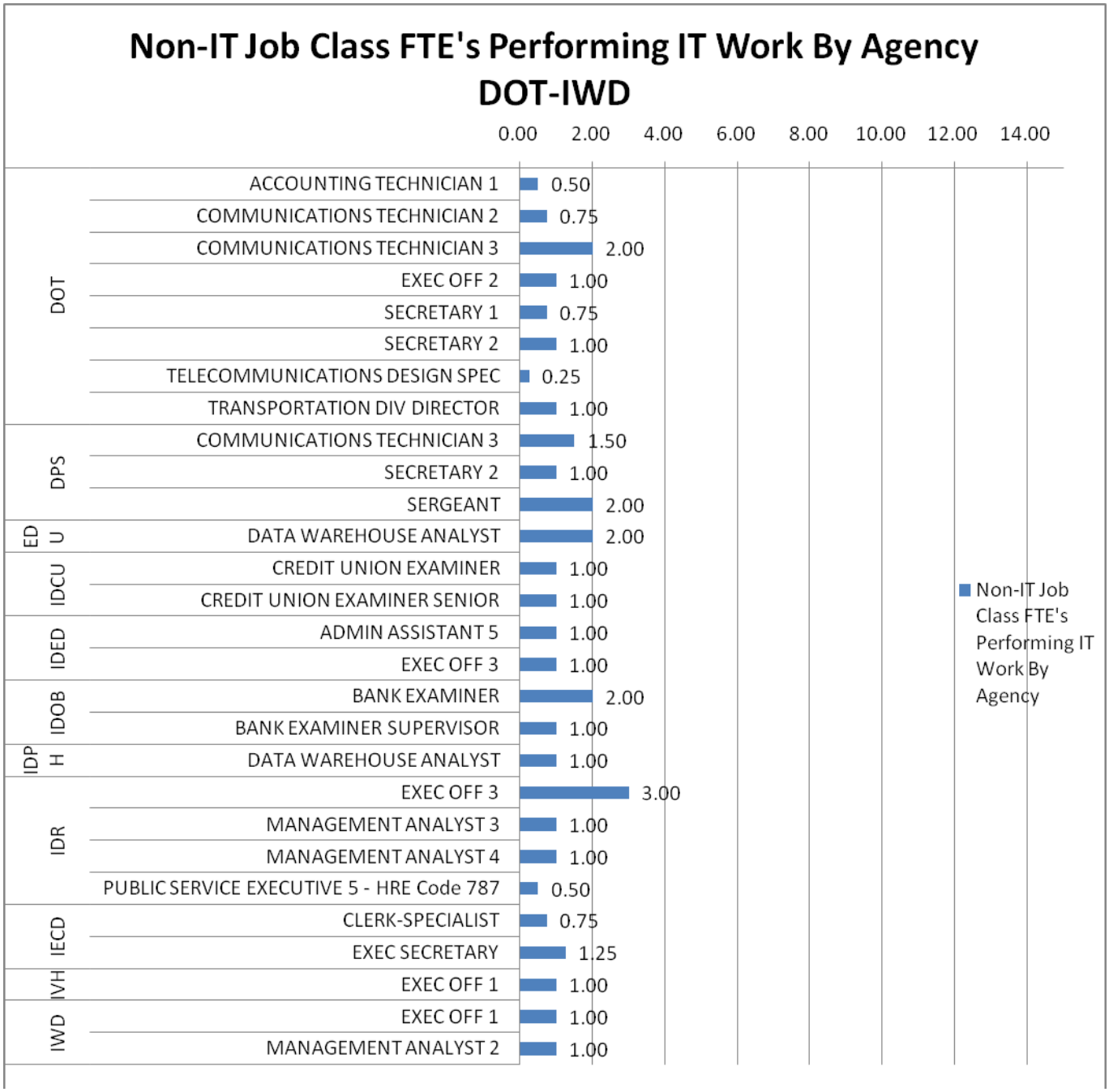


Figure I2. Shows by agency, non-IT job classification assignments. Source: TGB Annual Report, 2009.

Appendix I. Continued

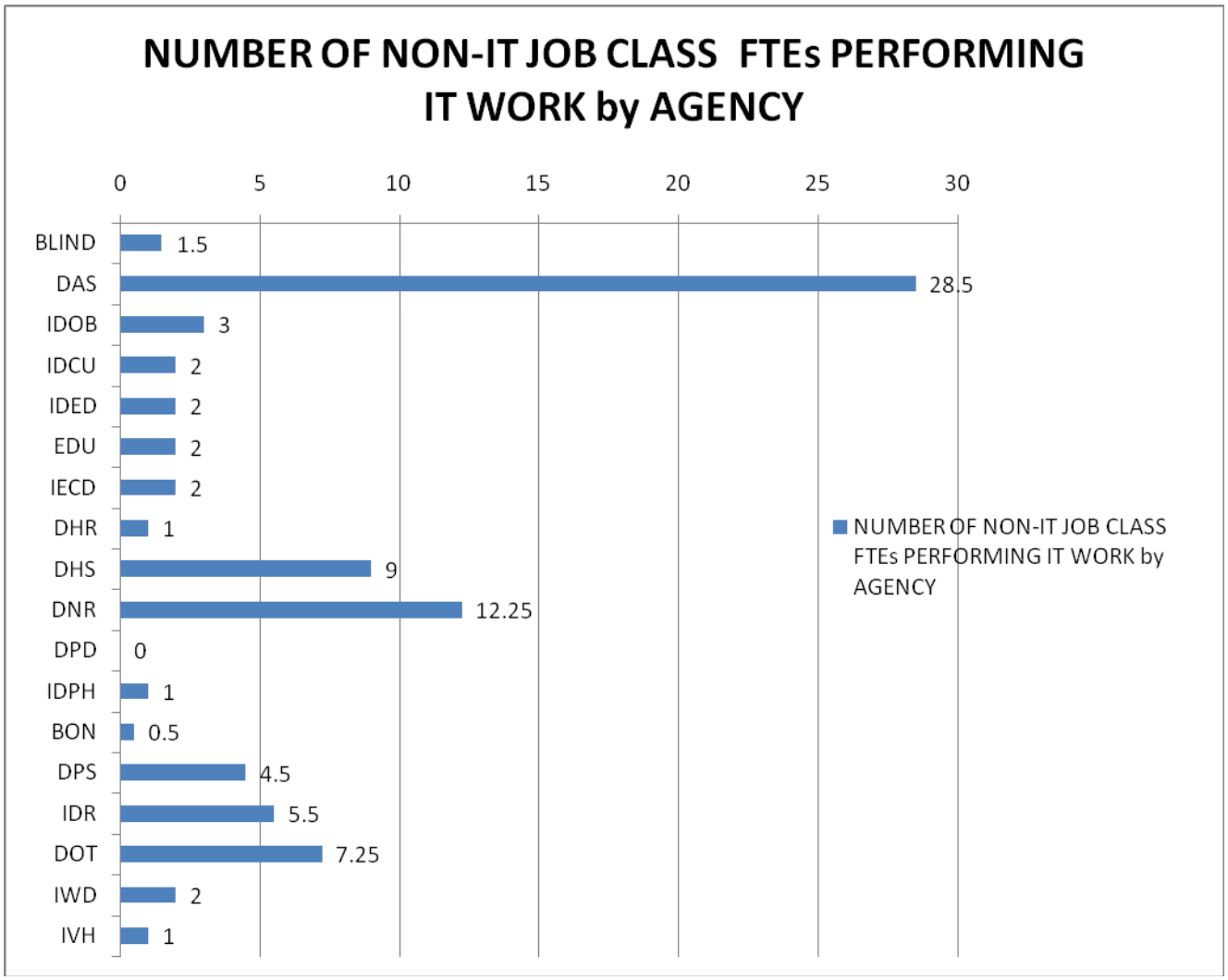


Figure I3. Shows by agency, non-IT job classification assignments. Source: TGB Annual Report, 2009.

Appendix I. Continued

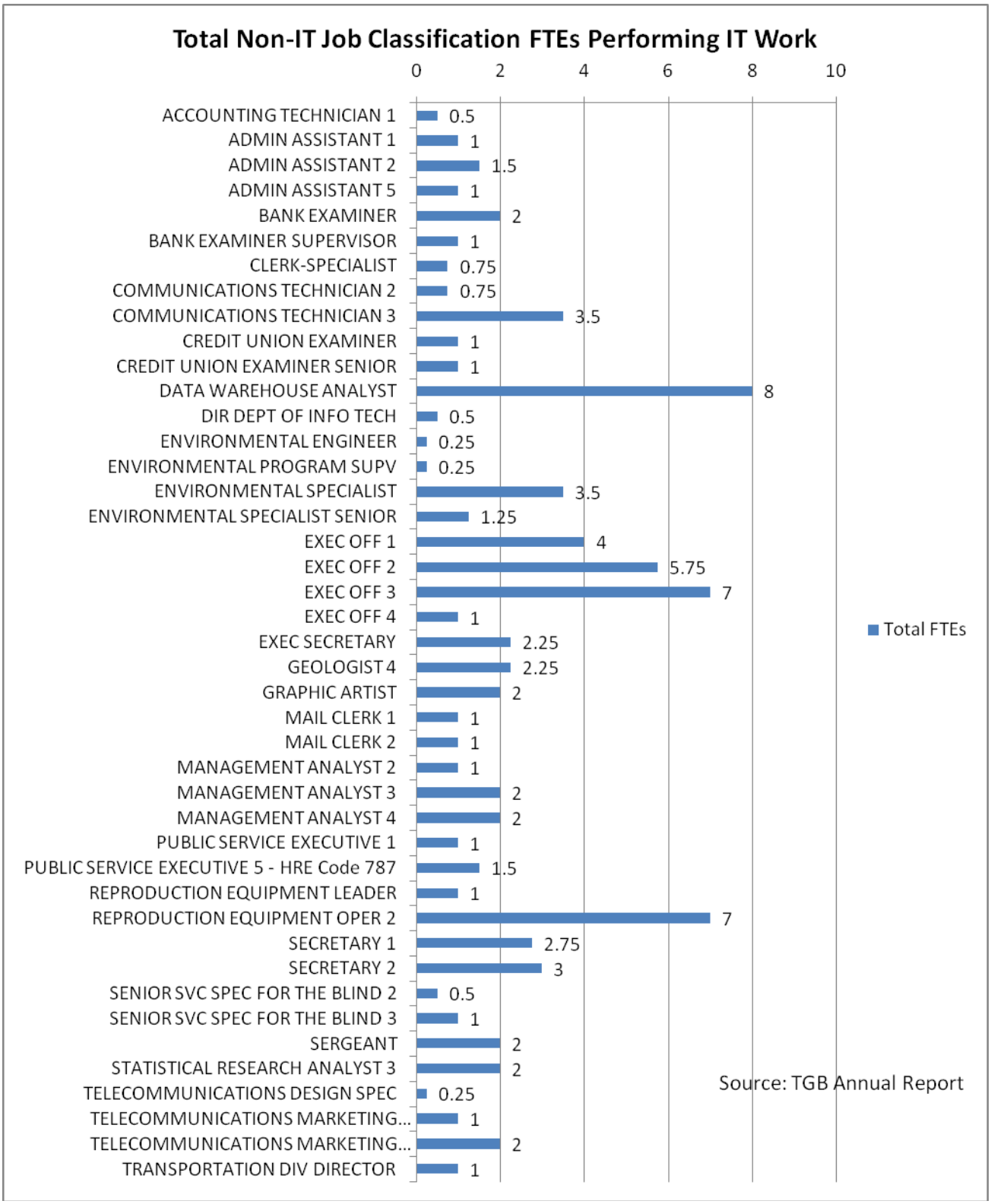


Figure I4. Shows the number of non-IT job classification full time equivalents.