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MEMORANDUM

Date: May 23, 2003

To: Assemblyman David Parks, Chairman
Assembly Taxation Committee

cc: Ted Zuend, Deputy Fiscal Analyst
Legislative counsel Bureau

From: Chuck Chinnock

Subject: Information Technology Cost Estimate- Department of Taxation

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-Enclosed for your review is the Cost Estimate Report for development and implementation of a new Unified Tax System. This estimate was accomplished after an exhaustive study leading to issuance of a formal Request for Information replied to by many vendors. This estimate will be followed by a thorough Roadmap outlining details and timelines for implementation. The overall purpose of this is to lead to provision and appropriation for a new IT system. I have also included a draft copy of a project timeline leading to an RFP award.

-Please realize that the individual and overall costs selected, were based upon many factors as described in the report. In reviewing the submissions to the RFI there were both high and low proposals. The numbers selected represent a reasonable midpoint that will allow through an RFP, a competitive offering and resulting bid. No doubt, it will be the goal of the Department to obtain an optimum and successful program, at a fair price and at reduced risk.

- Should you have questions please call me at, 687-4839.

ASSEMBLY COMMITTEE ON TAXATION
DATE: 05/27/03 ROOM: 3142 EXHIBIT C
SUBMITTED BY: Chuck Chinnock

State of Nevada

Department of Information Technology (DoIT)

Budget Estimate for

System Acquisition/Development

Prepared for
Department of Taxation
May 22, 2003
Version 1.0

C 2 of 18

Document History

Version	Date	Description
1.0	5/22/03	Delivered to Department of Taxation

Preface

This document contains information technology (IT) cost estimates for a new revenue management system for the Department of Taxation.

The estimates within this document are based on information gathered and supported from a number of sources available to the Department of Information Technology (DoIT) and the Department of Taxation.

The document is not to be construed as a commitment to any party or to the expenditure of funds for a predisposed solution.

Table of Contents

Executive Summary

The Department of Taxation requires a new revenue management system. This budget estimate provides a focused estimate of the cost to acquire a system that would automate collection of new and existing taxes, provide online registration and payment for taxpayers and replace the existing revenue system, ACES and other desktop systems.

Cost information used in this estimate is based on 17 vendor responses to a Request for Information (RFI) plus state technical resources.

Two possible approaches to acquiring new technology were initially considered, purchasing and modifying a Commercial Off-the-Shelf (COTS) system and custom development. Based on information from the RFI and Taxation's evaluation criteria, a modified COTS solution would provide the greatest functionality in the shortest timeframe, with the least risk.

The following budget estimate is for a modified Commercial Off-the-Shelf (COTS) solution implemented over three years.

- Functional Requirements - $250,000
- Project Cost - $23.7M
- Ongoing yearly maintenance cost – $1.5M

Alternative Funding Options

Any alternatives to funding the system through the General Fund must be analyzed with reference to the actual cost to implement and operate the revenue system. This budget estimate focuses only on direct costs, which may then be used as a basis for considering alternative funding options. Alternative funding options are often available as an adjunct to any proposal for specific technology and likely can be negotiated separately from the technical requirements.

Next Steps

To go forward with this project the Department of Taxation, should:

- Conduct a Functional Requirements Definition
- Undertake detailed project planning
- Contract with a vendor using the state's Request for Proposal process
- Direct, oversee and complete the project

Background

The Department of Taxation is analyzing alternative system acquisition/development options to determine how to deliver best value to the state and to taxpayers, at a reduced cost and risk. This budget estimate is based on vendor responses to the Request for Information (RFI) number 03-01, plus information from other state technical resources.

Business Drivers

A flexible, unified revenue processing and management system is necessary to meet the Nevada Department of Taxation's immediate need for increased operational efficiency, and to facilitate future changes to the tax code and to effectively serve the taxpayers of Nevada.

This new system would eventually replace the current sales and use tax system, ACES, plus the numerous standalone spreadsheets and databases currently used to collect excise taxes and, would facilitate the accounting, control and distribution of revenue. It would also be capable of supporting new tax types.

In addition, it is envisioned that the new technology would:

- Increase revenue through improved taxpayer compliance discovery process using comprehensive, automated analysis and reporting tools.
- Improve DOT's customer service by allowing multiple ways for taxpayers to interact with the system, including self-service through the web. This would include electronic filing and payment of taxes, plus automated access to taxpayer-specific information or educational materials.
- Increase efficiency in collection and processing of returns by eliminating paper-based processes.
- Enhance voluntary compliance through a program of education and information and with an audit compliance program that focuses on indicators of non-compliance.

Functionality Required

A unified taxation system must support:

- **Core taxation functions** - taxpayer registration, revenue collection and accounting, revenue distribution,

communicating with taxpayers (issuing invoices, accepting payments, issuing correspondence etc.) and providing reports.

- **Compliance** – discovery, audit and enforcement.
- **Online access** - taxpayer registration, filing and payment over the web.

Solution Alternatives

Several possible approaches to acquiring new technology were considered leading to two primary alternatives:

- Purchasing and modifying a Commercial Off-the-Shelf (COTS) system
- Custom development

Either approach would allow for other variations of processing to include the possibility of outsourced hosting and operation of the new system.

Commercial Off-the-Shelf (COTS)

Several Commercial Off-the-Shelf (COTS) systems are currently in operation within the 50 states that meet the functional and technical criteria defined by the Department of Taxation. COTS systems deliver core functionality which may then be customized to accommodate unique requirements of a specific jurisdiction.

Responses to the RFI reveal that there are several viable COTS solutions. They vary between systems developed entirely by one vendor to systems that integrate functionality from multiple vendors.

Custom Development

A custom developed application could be built specifically for Taxation to satisfy defined functional and technical requirements.

Generally speaking, custom solutions should be considered if COTS/modified COTS systems are not available to meet essential business and technical requirements. Because the system would be built from scratch, a comprehensive requirements definition would be required to ensure that the system would meet Taxation's business needs.

Few vendors offering custom solutions responded to the RFI. This does not mean however that vendors would not respond to a formal Request for Proposal.

Comparing the Alternatives

Key criteria for evaluating solution alternatives include:

- Degree of fit with Taxation's business requirements
- Implementation timeframe
- Risk vs Benefit
- Cost

Degree of Fit

Several COTS systems identified through the RFI process are able to support Taxation's high level requirements. All would require some customization and/or partnering with other vendors to provide the required functionality. As a general rule, more customization equates to longer development, more cost and greater risk.

Custom development, on the other hand, could result in an application that most closely fits Taxation's functional and system requirements.

Implementation Timeframe

The Department of Taxation is under shortened time pressure to implement core taxation functionality, possibly by July 1, 2004. A COTS solution that is a good fit for the Department's requirements, thus needing little modification, would be faster to deploy than a custom developed application. How much quicker would depend on the project scope, degree of multiple vendor integration, and resources provided by the COTS vendor and by the state. A prerequisite to success is strong project management and oversight.

Custom development would take more to develop, because all parts of the application must be fully defined, designed, built, tested and integrated, whereas with a COTS solution much of the functionality would have been already developed and tested.

Risk vs Benefit

COTS solutions are typically less risky to implement than a custom solution. However, while some degree of customization is anticipated, a high degree of customization will increase the risk of a COTS solution.

Risks and benefits are summarized below:

Benefits

COTS	Custom Development
▪ Faster to implement –begin collecting new taxes sooner ▪ Much required functionality already built & proven in other jurisdictions ▪ Vendor provides in-depth knowledge from other states ▪ Lower project costs if minimal customization is necessary ▪ Vendor commitment to ongoing product improvements	▪ System designed specifically to taxation requirements ▪ State owns and maintains source code

Risks

COTS	Custom Development
▪ No vendor provides exact solution without some modification. More customization equates to longer development, more cost and greater risk ▪ Possible integration of multiple vendor's products increases project complexity ▪ Changes to business processes require staff training, acceptance and adaptation ▪ State may or may not own source code ▪ Ongoing application license costs	▪ Longer to implement - additional time required for requirements definition, design, development, and verification ▪ More complex project – doesn't build on existing functionality ▪ Greater cost to the state and time for detailed requirements definition, project management, and testing ▪ State lacks experience and skills in managing and developing highly complex Information Technology projects
	▪ Changes to business processes require staff training, acceptance and adaptation ▪ Difficult to assure maintenance and upgrades regarding cost and timeliness ▪ Would still require RFP for system development vendor. ▪ Depending upon strategy, could require additional state staff beyond those required for COTS solution.

Cost

Due to the limited response from software developers, an accurate differentiation between modified COTS and custom development is not available. However, industry experience suggests that custom development is rarely less expensive. In the case of Taxation, if a custom solution were selected the Functional Requirements Definition would have to be much

more comprehensive, along the lines of the $1.3M study originally requested by Taxation in 2001. For reference, the recent Medicaid Management Information System (MMIS) Functional Requirements Definition cost $1.6 million.

Recommendation

Based on information from the RFI for complete solutions, along with DoIT analysis and other technical information plus Taxation's evaluation criteria, a modified COTS solution would provide the greatest functionality in the shortest timeframe, with the least risk. If timeframe becomes less of a constraint, a custom development solution could also be considered.

Cost

The following budget estimate is for a modified Commercial Off The Shelf (COTS) solution implemented over three years. The estimate is based on vendors responses to the RFI along with other sources. See *Appendix 1 – Cost Worksheets* for details.

Total Cost Per Year			
	Year 1	Year 2	Year 3
Functional Requirements	$250,000		
Project Costs	$13,959,817	$5,522,817	$4,239,317
Ongoing Costs	$144,000	$1,494,000	$1,494,000
Total	$14,353,817	$7,016,817	$5,733,317

Functional and System Requirements

While a COTS solution does not require the degree of detail in Functional Requirements necessary for custom development, a requirements analysis is necessary to ensure that all aspects of Taxation's business needs, as well as the general system requirements, are documented prior to release of a Request for Proposal. This will allow the evaluation team to assess the differences between various vendors proposals and determine the best fit with Taxation's business requirements.

This analysis would build upon the work already undertaken in preparation for the RFI. Continued use of Use Case modeling, an important part of the industry standard Unified Modeling Language (UML) will ensure continuity of requirements management throughout the project.

Project Cost

This estimate assumes a three year project that is rolled out in phases. The specific content and timing of each phase will be determined between Taxation and the chosen vendor during contract negotiations.

The cost of the project includes COTS software, modification and customization, hardware and additional software for the production environment as well as a development environment and testing/training environment, vendor professional services and state personnel, including project management and quality assurance.

Yearly Ongoing

Yearly ongoing support cost will begin when Phase 1 goes live. This means that during the three year development period the Department of Taxation will incur project costs as well as ongoing costs in each year. Ongoing costs include software licensing and computer facility charges to host the production system. It is assumed that some of the state technical personnel on the project development team will be concurrently responsible for ongoing system administration and support. Costs for these resources are allocated to the project and not to ongoing cost.

Next Steps

Given the anticipated short timeline to go live with the first phase of the new system, careful upfront planning, clearly defined and well understood roles and responsibilities, experienced IT project management and the ability to manage multiple tasks simultaneously are prerequisites for success.

Detailed project planning should begin immediately. The next deliverable in the Service Level Agreement between Taxation and DoIT is an implementation roadmap which will document a high level strategy for the overall project. It is being developed jointly by Taxation and DoIT and will include recommendations for a governance structure, project roles and responsibilities (state and vendor), deliverables, and schedule.

With completion of the roadmap, the next major activity will be to conduct a Functional Requirements Definition. In order to fast track vendor selection, a procurement document will be developed and be ready to issue as soon as funding is available. In addition, the original *Technology Study Request*

submitted to DoIT during the budgeting process will be updated.

To further expedite the project, a draft Request for Proposal for the actual system will be developed while Functional Requirements Definition is in progress. Final information from the Requirements Definition will be folded into the RFP. A Technology Investment Request (TIR) document will also be produced during this activity.

Appendix 1 – Cost Worksheets

The following worksheets identify costs for the project and for ongoing support. Vendors submitted their cost using their own defined categories. For consistency, this estimate uses cost categories as defined in the Technology Investment Request (TIR) document. Some degree of judgment has been applied while consolidating/splitting cost categories.

Project Cost Detail				
	Year 1	Year 2	Year 3	Total
Functional & System Requirements	$250,000			$250,000
New Agency Staff	335,650	335,650	335,650	$1,006,950
Application Design	1,560,000	780,000	260,000	$2,600,000
Customization Charges	2,250,000	1,350,000	900,000	$4,500,000
Testing & Verification	1,100,000	1,100,000	1,100,000	$3,300,000
Integration, Application Deployment & Legacy Data Conversion	733,333	733,333	733,333	$2,200,000
Training & Documentation	317,500	190,500	127,000	$635,000
Application Software License	4,000,000			$4,000,000
Other Software Licenses	1,100,000			$1,100,000
Development Software Tools	250,000			$250,000
Development Hardware	280,000			$280,000
Production System Hardware	1,250,000	250,000		$1,500,000
Vendor Project Management	183,333	183,333	183,333	$550,000
Department Project Management	300,000	300,000	300,000	$900,000
Quality Assurance	300,000	300,000	300,000	$900,000
Total	**$14,209,817**	**$5,522,817**	**$4,239,317**	**$23,971,950**

Yearly Ongoing Cost Detail			
Ongoing Costs	**Year 1**	**Year 2**	**Year 3**
Software Licensing, Software and Hardware Maintenance & Upgrades		1,350,000	1,350,000
DoIT Facility Hosting	144,000	144,000	144,000
Total Ongoing Costs	**$144,000**	**$1,494,000**	**$1,494,000**

Notes and Assumptions

Project Costs		
	Category	**Description**
$250,000	**Functional and System Requirements**	This study is to ensure that all aspects of Taxation's business needs, as well as the general system requirements, are documented prior to release of a Request for Proposal. Cost was derived from other state projects of similar size and complexity.
$1,006,950	**New Agency Staff**	The project will require 10 staff full time. **The cost for 5 of these staff are identified in fiscal notes for various tax proposals.** The cost for 5 staff is identified here. In addition, 5-10 extended team members will be needed part time as Subject Matter Experts.
$2,600,000	**Application Design**	Vendor tasks up to and including the Proof of Concept are included. This includes cost to conduct a gap analysis for requirements and to create the overall system architecture and design documentation tailored by results from the Proof of Concept.
$4,500.000	**Customization Charges**	Vendor tasks for customization and development includes all work required to tailor the application software plus work that is not directly associated with it. Examples include developing interfaces to other systems and integrating other software packages into the overall solution. It would also include developing interfaces to IFS, credit card processing and other entities.
$3,300,000	**Testing & Verification**	This includes vendor /developer costs for testing the deliverable plus the State costs for people and testing materials. This will take place several times since the system will be rolled out in phases.
$2,200,000	**Integration, Application Deployment and Legacy Data Conversion**	This project will require substantial coordination and integration with ACES. Vendor and state staff will both be involved in this task. This line item refers to vendor costs. Cost for State data conversion efforts will be performed by Taxation staff, and is not included as a separate expense from the cost of staff. Application deployment includes all costs associated with the rollout of each phase of the system, such as fixing problems identified by users, fine tuning performance, etc.
$635,000	**Training & Documentation**	Training may include end users, system administrators and other technical support people who will be using/supporting the new system. Documentation includes system, and end user.
$4,000,000	**Application Software License**	The license fee for the software for the application system.

Project Costs		
	Category	Description
$1,100,000	**Other Software Licenses**	This would include operating system, database software, report writers, middleware etc. Depending upon the specific solution it may also include software from other application vendors that is integrated into the system. Third party software costs are based on system vendor estimates. The State may be able to purchase these components at a lower cost.
$250,000	**Development Software Tools**	Any software tools that the state would purchase for use during the development and testing of the solution.
$280,000	**Development Hardware**	Any hardware required for the development effort. Operating system, database and other infrastructure software is included in the "Other Software Licenses" category.
$1,500,000	**Production System Hardware**	Desktop, servers, web, and other supporting equipment. Also includes the testing/training environment which is separate from production. System hardware costs are based on system vendor estimates. The State may be able to purchase these components at a lower cost.
$550,000	**Vendor Project Mgt**	Contractor project management cost category includes quotes from vendors labeled as 'Project Planning'.
$900,000	**Department Project Management**	This cost category includes the one full time department project manager, one half time project manager and a half time assistant handling project coordination and clerical tasks. The estimate for Project Management assumes a project duration of 36 months.
$900,000	**Quality Assurance**	The quality assurance cost figure assumes three full-time positions for 36 months.

Ongoing Costs

	Category	Description
$1,350,000	**Software Licensing, Software and Hardware Maintenance & Upgrades**	This includes the application software and third party software including operating system, database, report writer, middleware, etc. Third party software costs are based on system vendor estimates. The State may be able to purchase these components at a lower cost.
0	**DoIT Technical Support**	None anticipated
0	**Vendor Technical Support**	Included in development
$144,000	**System Hosting**	This cost assumes that the production system would be hosted at the state computing facility in Carson City and at a southern location managed by the same unit. The number of servers is based on vendor estimates for Windows/Intel server platform. For reference, the Department of Taxation paid **$687,968** to support ACES in 2002. According to one vendor estimate, hosting services delivered by an outside service would be $580K per year.
0	**DoIT WAN Charges**	**No incremental cost**

Draft Schedule – Tax Requirements Definition and System RFP

ID	Task Name	Duration	Start	Finish	5/18	5/25
1	**Functional Requirements**	45 days	Mon 5/19/03	Fri 7/18/03		
2	Develop & issue request to vendors (MSA only?)	10 days	Mon 5/19/03	Fri 5/30/03		
3	Vendor response	20 days	Mon 6/2/03	Fri 6/27/03		
4	Evaluate responses & intent to award contract	5 days	Mon 6/30/03	Fri 7/4/03		
5	Contract negotiationsl	10 days	Mon 7/7/03	Fri 7/18/03		
6	**Conduct Requirements Project**	60 days	Mon 7/21/03	Fri 10/10/03		
7	**Main System RFP**	81 days	Wed 9/17/03	Wed 1/7/04		
8	Develop RFP	21 days	Wed 9/17/03	Wed 10/15/03		
9	Issue RFP	1 day	Thu 10/16/03	Thu 10/16/03		
10	Vendor response	30 days	Fri 10/17/03	Thu 11/27/03		
11	Evaluate responses & intent to award contract	15 days	Fri 11/28/03	Thu 12/18/03		
12	Contract negotiateions	10 days	Fri 12/19/03	Thu 1/1/04		
13	BOE approval	4 days	Fri 1/2/04	Wed 1/7/04		
14	**Start Project**	1 day	Thu 1/8/04	Thu 1/8/04		