Innovative Funding for Innovative State IT:

New Trends and Approaches for State IT Funding

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NASCIO

National Association of State
Chief Information Officers

About NASCIO

NASCIO represents the state chief information officers from the 50 states, six U.S. territories and the District of Columbia. Members include cabinet and senior level state officials responsible for information resource management. Other IT officials participate as associate members and private sector representatives may become corporate members.

Association Management Resources, Inc. (AMR) provides NASCIO's executive staff.

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Executive Summary

In Summer 2003, NASCIO's Corporate Leadership Council (CLC) conducted a survey to examine the states' use of innovative funding models for technology projects. Based upon the twenty-three state responses received, NASCIO identified the following innovative funding methods that one or more states are currently using:

- Bonds
- Public-Private Partnerships
- Performance-Based Contracting
- Sharing Services
- Investment Funds
- Leasing & Financing
- Certificates of Participation
- Purchasing & Procurement Strategies
- Outsourcing & Managed Services
- Benefits Funding
- Budgeting & Appropriation Strategies.

Among the survey respondents, the most popular innovative funding models were Budgeting & Appropriation Strategies, Purchasing & Procurement Strategies, Outsourcing & Managed Services, and Leasing & Financing.

Based upon the survey, one over-arching principle is apparent: **Successful innovative funding models enable states to deliver savings, improve services to citizens, and, in some cases, generate new revenue streams.**

Current Economic Trends and Innovative Funding: NASCIO identified the following trends regarding the current economic environment's relationship to IT funding innovations:

- The impetus for innovative funding models has grown out of a need to fund large, multi-year, multi-agency state IT projects
- Tight budgetary times drive innovative funding solutions
- States are increasingly turning towards innovative funding models as an alternative to financing projects through state general funds
- Many state innovative funding models involve inter-agency collaboration as a means of addressing state budgetary challenges.

NASCIO's "Business Case Basics and Beyond: A Primer on State Government IT Business Cases" and NASCIO's new online resource library, SMART (Strategic Materials and Resource Tool), are excellent resources for providing guidance on the development of successful business cases. Please see Appendix 3 for links to these and other helpful resources.

Current Trends in Implementing Successful Innovative Funding Models: The survey yielded the following state trends regarding the implementation of innovative funding models:

- Business cases are increasingly used to ensure the vitality of innovative funding models
- Stakeholder trust is a key element for the facilitation of innovative funding efforts
- An appropriate governance and oversight structure can help to foster stakeholder trust by ensuring an innovative funding model's integrity.

To foster state technology innovations that will benefit citizens in tight economic times as well as in a better economy, states must consider the use of innovative funding methods. We hope that NASCIO's "Innovative Funding for Innovative State IT: New Trends and Approaches for State IT Funding" can serve state CIOs and others as a starting point.

Introduction

"Economic growth is wavering, revenues are faltering, costs for health care ... and new homeland security continue to rise - further exacerbating fiscal problems that plagued nearly every state in fiscal 2002." [1]

Why focus on funding?

With the continued economic strain on state government budgets, the role of Information Technology (IT) must take a more prominent position as a solution that enables increased efficiencies and cost reductions through streamlining government business processes and integrating infrastructure among agencies, all the while improving the efficiency and ease with which state government serves its citizens. However, to fund these IT solutions in an era of reduced state budgets, states must be innovative not only in seeking new technological solutions but also in seeking new and creative means with which to fund IT. State CIOs are poised to champion the use of innovative funding methods for IT solutions that will save states money and improve services to constituents.

Background on the Current Economic Situation in the States: All levels of government are faced with continuing budgetary challenges.[2] As evidence of this, many states' rainy day funds are now depleted and cuts have been made in state programs that are valuable to citizens. And while state governments attempt to address their state budget crises by re-allocating costs, raising taxes and fees, and pursuing uncollected revenue, citizens' heightened expectations for better government services have not waned. Presented with these dual challenges, states are seeking ways in which they can reduce costs, while meeting increased citizen expectations.

The Role of IT in Addressing the Current Economic Situation: To cut costs and serve citizens with increased efficiency, states must recognize the prominent role that IT can play in reconciling and addressing these seemingly competing challenges. The implementation of the appropriate IT solutions and systems can streamline government processes by enabling states to analyze data more accurately and rapidly, collect much needed revenue more quickly, and eliminate redundant business processes and systems. Integrating and creating common IT infrastructure within and among state agencies can also reduce the costs associated with maintaining multiple IT systems on a continuing basis. Both the streamlining of business functions and the integration of IT infrastructure can, in turn, increase the ease and efficiency with which citizens interact with state government. Hence, all levels of government must incorporate IT solutions as part of their package of solutions to address the challenges they currently face.

Funding State IT through Innovative Funding Methods: After recognizing the increasingly important role of IT in addressing states' current budgetary challenges, states must then consider how to fund their IT initiatives. From a historical perspective, many of the current state appropriation practices, grant programs, and procurement regulations were created during the Industrial Age. However, without modernization to stay in keeping with the fast-paced characteristics of the Information Age, state funding practices and regulations may not provide the

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[1] "Budget Shortfalls: Strategies for Closing the Spending and Revenue Gaps," National Association of State Budget Officers (NASBO), December 2002.

[2] "Alternative Funding Strategies for Electronic Commerce Projects," Robert H. Smith School of Business, University of Maryland, Dr. Jonathan Palmer, Advisor, May 2000.

funding flexibility required to promote state IT innovations. Therefore, some states are now seeking non-traditional ways of funding IT initiatives, such as funding them through the monetary revenue generated by a project or the creation of investment funds that are solely dedicated for state technology projects. States can use these non-traditional funding methods while they concurrently pursue efforts to modernize more traditional means of funding, such as updating legislative appropriation processes, adding more flexible language to IT appropriation legislation, and removing restraints on the use of funds for IT projects.

The Role of the CIO in Championing Innovative Funding Models: Obtaining funding for IT projects can be a time-consuming and challenging process, particularly when the use of innovative funding methods is being considered. The research underpinning a project's justification must be solid and supportive. Key stakeholders must be convinced with persuasive, complete, and understandable business cases not only for the project itself but for the method of funding the project.

The state CIOs, many of whom are in cabinet-level positions and participate in important decisions impacting government operations, have a key role in facilitating the use of innovative funding mechanisms for state IT projects. They have the ability to champion statewide, coordinated efforts using innovative funding mechanisms to implement technology that will lead to cost-reducing efficiencies and improved citizen services.

The Role of NASCIO and this Publication in Championing Innovative Funding Models: This NASCIO publication is intended to examine the types of innovative funding methods that states can use for IT projects that will benefit state agencies as well as citizens. It is based upon a NASCIO Corporate Leadership Council (CLC) survey of the states regarding the types of innovative funding models they are currently using to fund IT projects and programs. The survey results are included herein. In addition, this publication provides detailed case studies on the innovative funding models outlined in order to provide a starting point for states seeking to implement one or more innovative funding models.

For NASCIO, this publication is an initial step in facilitating the use of innovations in funding methods to spark much-needed innovations in state technology that will benefit citizens and state government as a whole. For the state CIOs, this publication is a reflection of the leadership position they have attained and the responsibility that accompanies that position to overcome funding obstacles in order to promote greater governmental efficiency and quality citizen services.

Section I: Description of Innovative IT Funding Models

Through its survey to which twenty-three states responded, NASCIO's Corporate Leadership Council (CLC) identified eleven innovative models for funding state IT projects and programs. These models are innovative in the sense that they are a departure from the traditional funding approach of obtaining monies out of the state general fund through legislative appropriations. The following section provides a description of each funding model along with a description of the baseline requirements that are necessary in order to successfully implement each model, the benefits that each model may provide, and a listing of which states are using each funding model.

Figure 1- Alternative IT Funding Models

Funding Model	Number of Survey States Utilizing Funding Model	Names of Survey States Utilizing Funding Model
Bonds	7	CT, GA, MA, MN, NV, TN, VA
Performance-Based Contracting	7	HI, IA, MN, OH, SD, TX, UT
Investment Funds	4	SC, SD, TN, UT
Leasing & Financing	15	AK, AR, CT, HI, IA, KY, MN, NV, OH, SC, SD, TN, TX, UT, VA
Certificates of Participation	1	OH
Purchasing & Procurement Strategies*	16	AR, GA, HI, IA, KS, KY, MN, MO, OH, PA, SC, SD, TN, TX, VA, WY
Outsourcing & Managed Services*	16	AL, AK, AR, DE, HI, IA, KY, NV, OH, SC, SD, TN, TX, UT, VA, WY
Benefits Funding*	5	AR, AZ, MN, OH, TN
Budgeting & Appropriation Strategies	18	AR, CT, DC, GA, HI, IA, KS, KY, MN, NJ, NC, OH, PA, SC, SD, TX, UT, WY

**Denotes updated survey results to reflect states providing case studies for funding models.*

A Note about the Sharing Services and Public-Private Partnership Funding Models: NASCIO did not survey the states regarding their use of the sharing services or public-private partnership models, but identified those funding models during the course of research for this publication and has provided a case study on Minnesota's successful use of its sharing services model and Texas' successful use of the public-private partnership model. Note that Texas' case study also serves as an example of the performance-based contracting model.

Bonds

Model Description: With this funding method, the state bonding authority issues bonds to fund IT procurements. The state issues the bonds to investors with the promise to repay the debt. Some of the types of bonds that might be issued by the state bonding authority include:

- **General Obligation Bonds**, which are a type of municipal bond that is secured by a state's pledge of its full faith and credit and taxing authority, <http://www.trading-glossary.com/g0019.asp>.
- **Revenue Bonds**, which are a type of municipal bond in which the issuer promises the investors revenue generated by the projects that the bonds finance, <http://www.trading-glossary.com/r0253.asp>.[3]

Model Requirements:

- Legislative approval of bond issuance
- Adequate oversight of fund disbursement
- Sufficient funds to pay bondholders when bonds are due

Benefits:

Internal State Benefits:

- Bondholders, not the state, provide the initial funding
- Can be used to fund a wide-range of technology projects and leverage already-existing applications for multiple state agencies

External Constituent Benefits:

- Funds for developing novel applications that can benefit citizens, such as web services

Number of Survey States Utilizing Model: 7

Names of Survey States Utilizing Model: CT, GA, MA, MN NV, TN, VA

Public-Private Partnerships

Model Description: Under this funding approach, a state contracts with a vendor to pay for part or all of an IT project up-front. The vendor recovers its costs from revenue generated by the project. A state may share in the revenue generated by the project as well. This model is termed a partnership, because both the state and the vendor have a stake in achieving project success.

Model Requirements:

- Contracting with a third-party vendor to provide a technology solution
- Creation of a revenue stream from which a vendor may recoup its initial outlay of funds
- Strong state-vendor communications

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[3] Definitions from Highlight Investment Groups' Trading-Glossary, <http://www.trading-glossary.com/default.asp>.

- Possible legislative and regulatory changes regarding fees charged to users if the vendor will be recouping its initial investment from new fees charged to the users of the new technology solution

Benefits:
Internal State Benefits:
- Very limited initial outlay of funding by the state
- Creation of an incentive for the vendor to perform successfully by tying the vendor's profitability to the new revenue stream created by the IT project
- Possible cost efficiencies created by obtaining expertise from outside the state as opposed to the potentially higher cost of retaining expertise in-house
- Possible creation of a new revenue stream from which the vendor can recoup its initial investment and in which the state can share

External Constituent Benefits:
- Avoidance of spending taxpayer dollars to fund IT projects
- Maximization of the vendor's performance in order to produce the greatest benefits possible for constituents

Number of Survey States Utilizing Model: 1

Name of Survey State Utilizing Model: TX

Performance-Based Contracting

Model Description: A performance-based contract is a contract for which a state defines its objectives for an IT system or project. The vendor then decides on the best solution to meet those objectives. The state and the vendor also select performance measurements to gauge the solution's effectiveness, with rewards for superior performance and penalties if the vendor fails to meet the specified objectives. Often, the vendor does not receive payment until it achieves certain performance levels.

Model Requirements:
- Selection of performance measures with which to gauge the vendor's performance
- Selection of mechanisms to create incentives for reaching or exceeding important performance measures or penalties for failing to reach such performance measures
- Monitoring of the vendor's ability to meet performance measures

Benefits:
Internal State Benefits:
- Creation of incentives for a vendor in order to maximize its performance by holding it to mutually agreed-upon performance measures
- Maximization of the value the state receives from the vendor

External Constituent Benefits:

- Maximization of the vendor's performance in order to produce the greatest benefits possible for constituents

Number of Survey States Utilizing Model: 7

Names of Survey States Utilizing Model: HI, IA, MN, OH, SD, TX, UT

Sharing Services

Model Description: The goal of this model is to increase savings and efficiencies by encouraging increased agency collaboration. Stakeholders can be brought together through a summit or other means in order to identify areas of potential inter-agency collaboration on IT projects. For example, multiple state agencies may be seeking an improved electronic grants management system. Once areas of potential collaboration have been identified, the agencies and other stakeholders are brought together to coordinate their efforts. This allows costs to be spread among the participating agencies.

Model Requirements:

- Coordination among agencies to identify and leverage areas of potential collaboration
- Management of inter-agency collaborative efforts
- Identification of savings from inter-agency collaborative efforts

Benefits:

Internal State Benefits:

- Identification of areas of potential collaboration and redundancy among agencies
- Creation of cost savings and efficiencies through inter-agency collaboration
- Reduction of redundant systems or processes among agencies
- Possibility of facilitating cost savings through increased aggregated purchasing
- Improved ability to ensure that staff members with the right skills participate on collaborative projects
- Improved ability to standardize IT infrastructure across agencies

External Constituent Benefits:

- Ability to bring improved services to citizens by allowing agencies to coordinate their efforts
- Creation of cost savings that can be devoted to other projects that will benefit citizens

Number of Survey States Utilizing Model: 1

Name of Survey State Utilizing Model: MN

Investment Funds

Model Description: Investment funds are pools of money that a state can establish for a variety of purposes, including funding pilot programs, trying new technologies or supporting projects with short pay-back periods. The state legislature may provide initial seed money to establish such investment funds. Savings generated by funded projects can be used to replenish the investment funds. The monies from the investment funds can either be provided to other agencies as grants for their IT projects or may be doled out in the form of loans to other agencies that must be repaid.

Model Requirements:

- Initial seed money
- Oversight of the allocation of funds
- Oversight of the funded projects

Benefits:

Internal State Benefits:

- Existence of a pool of money dedicated for state technology projects
- Protection of a pool of funds from the volatility of appropriations from the state general fund

External Constituent Benefits:

- Ability to ensure that the state can consistently fund IT projects in order to continually improve its citizen services

Number of Survey States Utilizing Model: 4

Names of Survey States Utilizing Model: SC, SD, TN, UT

Leasing & Financing

Model Description: This model involves the purchase of hardware, software or IT-related services using a lease-purchase agreement or a financing agreement. Under either type of agreement, this funding method allows states to spread the costs of purchases over a period of time as opposed to paying for them in a lump sum up-front.

- With a **Lease-Purchase Agreement**, the state leases the equipment from a lessor and the state's lease payments are applied to the purchase price of the equipment. Once the lease payments total the amount of the purchase price plus interest, the state effectively has purchased the equipment.
- Under a **Financing Agreement**, another entity loans the state money to purchase equipment. The state then makes payments to the financing entity until the loan plus interest is paid in full. Under this agreement, the state may own the title to the equipment. The financing entity may retain rights in the equipment as collateral on the loan.

Model Requirements:

- For a lease agreement, a vendor or third-party who is willing to act as the lessor to whom the state will make payments
- For a financing agreement, a third-party who will loan the state money for an IT solution
- Plan for funding the lease or finance payments over a period of time

Benefits:

Internal State Benefits:

- Ability to pay for an IT solution or equipment over a period of time
- Ability to pay the vendor up-front for its IT solution or equipment

External Constituent Benefits:

- Ability to provide citizens with services that the state otherwise might not be able to pay for in a lump sum up-front

Number of Survey States Utilizing Model: 15

Names of Survey States Utilizing Model: AK, AR, CT, HI, IA, KY, MN, NV, OH, SC, SD, TN, TX, UT, VA

Certificates of Participation

Model Description: With this non-traditional form of borrowing, investors provide funds up-front for a state IT system and, in return, receive Certificates of Participation representing a share of the payments the state makes to the lessor to lease-purchase the IT system. Typically, the state's lease payments are applied to the purchase price of the system plus interest. Hence, once the state's lease payments total the system's purchase price, the state has effectively purchased the system. Certificates of Participation, often referred to as "Municipal Leases," generally do not count against a state's debt ceiling, but have a higher interest rate than general obligation bonds.

Model Requirements:

- Potential need for legislative approval of the use of Certificates of Participation
- Securing of key stakeholders, including a trustee and investors
- Securing insurance to ensure investors are paid in-full and on-time
- Repaying investors on their Certificates of Participation at a higher interest rate than general obligation bonds

Benefits:

Internal State Benefits:

- The vendor receives payment up-front, while the state can pay for the IT project over a period of time
- Improved access to capital investment markets
- Certificates of Participation typically do not count against the state debt ceiling

External Constituent Benefits:

- Initial funding provided by investors, not by taxpayer dollars
- Ability to improve citizen services via a mechanism that is not solely dependent upon the state general fund

Number of Survey States Utilizing Model: 1

Name of Survey State Utilizing Model: OH

Purchasing & Procurement Strategies

Model Description: The goal of this funding model is to leverage the buying power of the state as an enterprise in order to generate savings on IT procurements. Such strategies may include:

- Garnering volume discounts on the purchase of hardware and software for the state enterprise as a whole (as opposed to allowing each agency to purchase technology independently)
- Streamlining the procurement process to make the purchase of technology quicker and more efficient by implementing a bid-within-a-bid process to allow vendors to bid smaller, more easily defined portions of a larger project
- Encouraging the use of innovative funding models, such as performance-based contracting and benefits funding.

Model Requirements:

- Legislative and regulatory environments that do not have restrictions barring the implementation of a Project Assessment Quotation (PAQ), which bids out smaller and more easily defined portions of a larger bid, or other procurement strategies, such as aggregated state technology purchases
- A good working relationship between the IT and Purchasing Divisions within a state
- A government purchasing office willing to implement updated procurement processes that can accommodate rapidly changing legal and technological environments
- A good project management program that is practiced among agencies to ensure that the updated procurement processes are followed
- A method of publicizing the availability of the new procurement processes
- Training for agency staff in the use of the new procurement processes

Benefits:

Internal State Benefits:

- Fostering a better relationship between the state and its IT contractors by minimizing risk for contractors and increasing flexibility for the state
- Increasing competition among vendors and thereby lowering the cost of IT purchases
- Formalizing previously open-ended IT contracts by establishing specific contractor tasks and pricing
- Allowing agencies to retain their savings from the updated procurement processes in order to reinvest them in other much needed IT projects

External Constituent Benefits:

- Quicker implementation of state programs that provide citizens with improved services and access to government
- Increased savings that can be reinvested in additional IT projects that will provide citizens with more benefits

Number of Survey States Utilizing Model: 16

Names of Survey States Utilizing Model: AR, GA, HI, IA, KS, KY, MN, MO, OH, PA, SC, SD, TN, TX, VA, WY

Outsourcing & Managed Services

Model Description: Through an outsourced or managed contract, a state enters into an agreement with a private sector entity under which that entity provides technology solutions for the state. States typically use outsourcing to acquire expertise or services that are otherwise hard to find and retain in-house for a reasonable price. This funding model can assist states in stabilizing and lowering IT costs. Under these types of contracts, a state often pays for the vendor's services as it uses them as opposed to paying for them in advance.

Model Requirements:

- Having a solid business case to support a decision to outsource
- Obtaining sufficient funds to pay the vendor
- A situation in which a substantial amount of limited state financial and human resources would have to be expended in order to acquire the in-house expertise needed to implement the project (particularly if the project does not involve functions that are unique to state government)
- Having a sufficient pool of vendors from which to choose
- Ability to identify a vendor that appears to have an understanding of any project requirements that are specific to state government
- Securing the user agencies' buy-in regarding the decision to outsource and the selection of the vendor

Benefits:

Internal State Benefits:

- Avoidance of devoting substantial state time and resources to obtaining the expertise in a given area in which a vendor is already an expert
- In some cases, creation of an IT solution that can be deployed to multiple agencies, thereby reducing the cost of creating the same system multiple times and creating another avenue through which the state can enforce its architecture and guide the statewide strategic direction of IT

External State Benefits:

- Using vendor expertise to complete a project that will benefit citizens more quickly and possibly at a lower cost

- Deploying the state resources saved by outsourcing to other projects which will benefit the citizenry

Number of Survey States Utilizing Model: 16

Names of Survey States Utilizing Model: AL, AK, AR, DE, HI, IA, KY, NV, OH, SC, SD, TN, TX, UT, VA, WY

Benefits Funding

Model Description: With the benefits funding model, a state pays for a technology project or improvement with the financial benefits that are actually realized from the project or improvement's implementation. Usually, the benefits are in the form of additional revenue collected as a result of the project or improvement. However, the benefits could be in the form of savings created by the project. States often use this model to fund tax or other revenue-generating systems. When the model is used in that context, states can easily measure the additional amount of revenue generated after a project or improvement's implementation.

Model Requirements:

- Strong sponsorship of the project and funding model by the state governor and agency director
- Clear, unambiguous legislative and executive authority to enter into public-private partnerships
- Strong legislative support by legislative leaders and key legislative staff
- Some knowledge of funding model mechanics by the governor's staff, the state's executive and legislative budget officers, chief state procurement official, and state procurement legal counsel
- Technology project under consideration must be core and/or mission critical to the operation of state government
- Independent assistance from technology vendor representatives in educating legislators and other stakeholders on the financial benefits to the state and improvements in service delivery from public-private partnerships
- Multi-agency participation in the vendor evaluation process
- A comprehensive communications plan to maintain open and continuous communications with state officials, consultants, vendors and stakeholders

Benefits:

Internal State Benefits:

- The vendor "front funds" the project using their working capital
- New sources of revenue are developed by capturing tax dollars that "leaked" through the obsolete technology
- The state's project risk is shifted. Risk is now shared by the business partners.
- There is a built-in incentive for the vendor to perform. If the project does not perform as planned, the vendor does not receive progress payments.
- Existing technology used on comparable projects in other public jurisdictions can be "transferred in," thus lowering total system development costs

- The vendor has the option to use channels of distribution to source IT equipment that may be unavailable to the public sector, thereby lowering the cost of the project
- The vendor has access to system development methodologies and technology skill sets unavailable to the state government, thus ensuring quality deliverables

External Constituent Benefits:
- Providing improved citizen services via benefits funding when sufficient legislative appropriations for such projects are unavailable

Number of Survey States Utilizing Model: 5

Names of Survey States Utilizing Model: AR, AZ, MN, OH, TN

Budgeting & Appropriation Strategies

Model Description: The goal of budgeting and appropriation strategies is to either gain additional funding for IT projects or increase flexibility in the use of existing IT funds. Such strategies include:
- Retaining technology funds that are unspent at the end of the budget year (as opposed to allowing them to revert back to the state general fund)
- Using uncommitted year-end funds for technology projects
- Reallocating savings realized from previously implemented technology projects to fund other technology projects
- Increasing in-house expertise to reduce the amount of budget dollars spent on outside consultants and optimize the return on IT funding

Model Requirements:
- Securing buy-in from necessary stakeholders, which could include the state legislature and executive branch officials, to retain technology funds at the end of the year or reinvest funds saved on other technology-related projects
- Process for documenting the success of technology projects funded by such strategies
- To build in-house expertise, the ability to provide training and mentoring to permanent state IT staff
- To obtain more qualified employees, the ability to fund one or two positions that pay above a civil service salary but below the rate that would be paid to a consultant

Benefits:
Internal State Benefits:
- Having an additional source of funding to apply to new or existing projects
- Bolstering the argument for the savings that technology projects produce by demonstrating how those savings can be reinvented in other beneficial technology projects
- Building up the expertise of existing state IT staff by providing training and mentoring opportunities
- Improving the quality of in-house staff by funding one or two positions that pay above civil service salaries

External State Benefits:

- Reinvesting end-of-year funds or retained savings in order to provide services to citizens that, absent that avenue of funding, might not be possible
- Increasing the state IT staff's expertise in providing improved citizen services through IT

Number of Survey States Utilizing Model: 18

Names of Survey States Utilizing Model: AR, CT, DC, GA, HI, IA, KS, KY, MN, NJ, NC, OH, PA, SC, SD, TX, UT, WY

Section II: Trends in Innovative Funding Models

Background on the Case Studies

In an effort to better understand the challenges and opportunities associated with innovative funding models, this publication includes case studies that illustrate them. Each case study details the state need that gave rise to the implementation of an innovative funding method as well as the steps taken to create the model, the obstacles the state faced during implementation of the model, the internal and external benefits the state received from using the model, and the key factors that should be considered by other states seeking to implement the model.

Note that some of the funding models inherently involve the use of outside contractors (for example, Outsourcing & Managed Contracts and Public-Private Partnerships) or investors (for example, Certificates of Participation and General Obligation Bonds), while other of the funding models do not require the involvement of those outside of state government (for example, Sharing Services & Investment Funds).

The case studies contained in this publication are listed below:

- General Obligation Bonds (Commonwealth of Massachusetts)
- Public-Private Partnerships & Performance-Based Contracting (State of Texas)
- Sharing Services (State of Minnesota)
- Investment Funds & Leasing (State of Tennessee)
- Certificates of Participation (State of Ohio)
- Purchasing & Procurement Strategies (State of Missouri)
- Outsourcing & Managed Services (State of Delaware)
- Benefits Funding (State of Arizona)
- Budgeting Strategies (State of Hawaii).

The Trends

In reviewing the innovative funding case studies, a number of common trends became apparent regarding the current economic environment and innovations in state IT funding. The survey results and accompanying case studies also revealed the following over-arching trend: ***The implementation of successful innovative funding models enables states to deliver savings, improve services to citizens, and, in some cases, generate new revenue streams.*** The following discussion details the economic trends that have given rise to the increased use of innovative funding models for state IT projects and the trends that have emerged regarding the successful implementation of those models.

Economic Trends

The impetus for innovative funding models has grown out of a need to fund large, multi-year, multi-agency state IT projects: For each case study, the implementation of an innovative funding model grew out of a state's need to pursue a large IT project that could not be adequately funded through state general fund appropriations. For example, over fifteen years ago, Tennessee identified a need for short-term funding for IT projects that would serve as the

infrastructure for providing services to citizens. To address this need, the state created an investment fund from which short-term loans could be made to state agencies to finance large IT projects. The increased inter-agency coordination required for many state technology initiatives has also necessitated the need for new funding mechanisms that provide increased funding flexibility. Minnesota's sharing services model exemplifies how increased inter-agency coordination requires flexibility in funding to ensure that each agency has the resources it needs for a successful project. Increased instances of public-private partnerships in connection with large IT projects, such as Texas' contract for its Internet portal, TexasOnline, and Arizona's new tax system have also created the need for funding mechanisms outside of traditional general fund appropriations in order to provide vendors with the incentives and performance measures that facilitate project success.

Tight budget times drive innovative funding solutions: During times when budgetary resources are limited, states look to fund technology through less traditional methods. This publication contains many examples of funding methods that arose out of tight fiscal times. For instance, during the recession of the early 1990's, Massachusetts initiated legislation to issue general obligation bonds as a means to move technology forward in difficult economic times. Massachusetts is again using this model to address the budgetary challenges of the last several years. Another example of tight budgets driving funding innovations is Ohio's consideration of using Certificates of Participation as a possible funding method for its proposed ERP (Enterprise Resource Planning) implementation. Finally, Tennessee began to purchase hardware through its investment fund and allow other state agencies to lease the equipment. Through that arrangement, the state assisted agencies that could not afford to pay for IT equipment up-front.

States are increasingly turning towards innovative funding models as an alternative to financing projects through state general funds: NASCIO's *"*Transition Handbook", published in 2002, pointed out the increasing need for states to identify alternatives to simply supporting IT initiatives with general fund dollars. By focusing more on these alternative funding methods, CIOs will be able to take IT projects out of the highly competitive quest for state general fund appropriations, while ensuring the vitality of multi-year IT projects and, in some cases, creating new revenue streams (for example, Arizona's tax revenue system). All of the case studies contained herein rely little, if at all, on appropriations from state general funds. Moreover, states such as Hawaii are also taking steps to obtain a better return on their budgeted IT dollars by improving the expertise of state IT staff members.

Many state innovative funding models involve inter-agency collaboration as a means of addressing state budgetary challenges: In the face of the many state budgetary crises, agencies are pursuing inter-agency collaborative efforts as never before. Minnesota's sharing services model is just one example of this trend. Moreover, Delaware outsourced the creation of an e-payments platform due to the increasing number of agencies seeking the ability to accept credit card payments online. Through involving the interested agencies in the vendor selection process, the state ensured the agencies' satisfaction with the common IT e-payments solution. The adoption of an enterprise perspective with respect to state technology and increased inter-agency collaboration has and will continue to facilitate the creation of funding innovations.

Trends in the Successful Implementation of Innovative Funding Models

Business cases are increasingly used to ensure the vitality of innovative funding models: While many of the funding models outlined in the case studies do not require a formal business case before implementation, many of the funding models use business cases to ensure that funds are distributed to projects that will benefit the state and citizens. For example, Tennessee requires that each agency that applies for a loan from its investment fund perform a cost benefit analysis and detailed project risk assessment. Moreover, Massachusetts is requiring the calculation of the "Total Cost of Ownership" of projects funded through its issuance of general obligation bonds. For Texas, its business case decisions for proposed Internet portal-related projects can be quite complex, since such decisions may impact the profitability of Texas' Internet portal vendor. In directing the vendor to undertake or forgo projects, Texas has had to maintain strong and open communications with its vendor to ensure profitability.

As states increase their reliance on innovative funding models in order to continue technological progress, business cases will be critical in order to document results and demonstrate the value of IT investment decisions. However, just because a project can obtain funding via an innovative funding model, does not necessarily mean that funding *should* be devoted to it. State CIOs are tasked with the continuing responsibility to ensure that each project initiated through innovative funding solutions links back to enterprise cost savings and/or efficiencies as well as the state's strategic direction. The better the business case a state can formulate and document regarding the success of innovative funding models in delivering efficiency, the greater the stakeholder trust will be in the state IT leadership.

Stakeholder trust is a key element for the facilitation of innovative funding efforts: In order to successfully implement most innovative funding models, states must forge strong, trusting relationships with stakeholders. Maintaining a high level of trust among stakeholders is a challenging effort, particularly since some innovative funding models provide increased flexibility with respect to the distribution of funds. The Commonwealth of Massachusetts' executive branch was successful during its first bond issuance in securing the trust of the legislative branch, which authorized the bond issuance. As a result of delivering the anticipated value from the first bond issuance, the legislature provided the executive branch with additional funding flexibility in its subsequent IT bonding authorizations. With Texas' public-private partnership with its vendor, the state had to trust in the vendor's ability to deliver results, while the vendor had to trust in the state's ability to balance agencies' Internet portal needs with the vendor's desire to obtain its anticipated profit level. The key to maintaining trust on both sides of this state-vendor relationship has been the establishment of a good governance process to ensure adequate communication, coordination and oversight. Another example of a successful state-vendor relationship is included in Delaware's case study on its outsourced e-payments processing system.

An appropriate governance and oversight structure can help to foster stakeholder trust by ensuring an innovative funding model's integrity: The nature of the oversight authority for each of the case studies varied. For example, Texas established a separate oversight authority called the TexasOnline Authority. In contrast, Massachusetts' state Information Technology Division (ITD) provided oversight of the state's IT bond issuances. Moreover, for the governance of its investment fund, Tennessee turned to its Information Systems Council, which has representatives from all three branches of government, while Missouri's Division of Purchasing oversees the state's updated IT procurement processes. However, no matter which funding model a state decides to implement, it must establish a governance process to ensure communication takes place, results are documented, and the anticipated value is delivered to the end user.

The Over-Arching Trend for Innovative Funding Models

The implementation of successful innovative funding models enables states to deliver savings, improve services to citizens, and, in some cases, generate new revenue streams: All of the case studies demonstrate how states can create savings and efficiencies in order to benefit the state and ultimately its citizenry. For example, Missouri created a "bid-within-a-bid" procurement process to lower contractor costs and increase the state's procurement flexibility, which ultimately allows it to embark upon projects that will help its citizens. Additionally, some innovative funding models can not only deliver savings to states, but also can provide a new source of revenue, such as in the case of Texas' Internet portal and Arizona's tax system.

Section III: The Case Studies

This section contains case studies from nine states that exemplify the funding models that are part of this publication. Note that the case studies from Texas and Tennessee demonstrate the concurrent use of two funding models. The case studies and the funding models they exemplify are as follows:

- Case Study 1: Massachusetts' General Obligation Bond Model
- Case Study 2: Texas' Public-Private Partnership & Performance-Based Contracting Models
- Case Study 3: Minnesota's Sharing Services Model
- Case Study 4: Tennessee's Investment Fund & Leasing Models
- Case Study 5: Ohio's Certificates of Participation Model
- Case Study 6: Missouri's Purchasing & Procurement Strategies Model
- Case Study 7: Delaware's Outsourcing Model
- Case Study 8: Arizona's Benefits Funding Model
- Case Study 9: Hawaii's Budgeting Strategies Funding Model.

NASCIO anticipates publishing subsequent versions of "Innovative Funding for Innovative State IT." We expect those versions to include updates on the case studies contained herein as well as additional case studies.

In order to provide a holistic picture of the innovative funding models, each case study examines the following aspects of the funding models:

- Background on State IT Funding Needs
- Implementation of the Funding Model
  - Description of the Funding Model
  - Governance/Oversight of the Funding Model
  - Legislative and Regulatory Changes in Implementing the Funding Model
  - Business Case for Implementation of the Funding Model

- Major Hurdles and Benefits of the Funding Model
  - Major Hurdles
  - Benefits of the Funding Model (Internal and External)

- Keys to the Transferability of the Funding Model to Other States
- State Contact Person.

Case Study 1: Massachusetts' General Obligation Bonds Model

The Commonwealth of Massachusetts has used the issuance of general obligation bonds to create a pool of funds for information technology initiatives. The case study below details the way in which Massachusetts has implemented this funding model.

Background on State IT Funding Needs

In the early 1990's, a recession of the U.S. economy negatively impacted many state budgets and resulted in a shrinking of discretionary funds in state operating budgets for new technology initiatives as well as for large, complex multi-million dollar initiatives. At that time, Massachusetts' IT budget was no exception to the downward economic trend, causing the state to either fund small IT initiatives out of individual agencies' operating budgets or simply not pursue them. For larger IT initiatives, individual agencies typically petitioned the state legislature for the additional funds, which, in some cases, were not available.

Implementation of General Obligation Bonds to Address State IT Needs

Description of the Funding Model

To address the need for funds for both small and large IT initiatives during the economic recession of the early 1990's, Massachusetts implemented the use of bond financing to create a source of funding for IT initiatives. In 1992, the state legislature authorized its first bond issuance to fund state IT projects, which is commonly referred to as "IT Bond I."[4] IT Bond I provided just over $92,000,000 for several different IT initiatives scattered throughout various state agencies.

Based on the successful outcomes of IT Bond I, in 1996 the state legislature enacted "IT Bond II."[5] That second bond authorization totaled $314,487,000. IT Bond II was similar in most respects to IT Bond I. Again, based upon the success of the two previous bond issuances, the state legislature in 2002 enacted a third bond issuance, IT Bond III, in the amount of $300,000,000.[6] Projects funded by IT Bond III included initiatives to start or continue specified major departmental IT projects; evolve the Commonwealth's website into a fully integrated, task-based enterprise portal; implement a centralized state e-mail system; create a second data center, and implement a statewide wireless communications network. In total, as a result of its three bond issuances, Massachusetts has provided more than $700,000,000 for state IT projects since 1992.

Each bond issuance bill generally bestowed upon the Governor the authority to specify the amount of the bonds and the duration of the bonds (although the legislation placed a ceiling on the bonds' maximum term of years as well as a date certain upon which the bonds would become payable). The legislation also generally provided that, unless otherwise specified, interest and other payments made on account of the principal of the bonds would be payable from the state general fund.

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4 Massachusetts Acts of 1992, Chapter 194.

5 Massachusetts Acts of 1996, Chapter 294.

6 Massachusetts Acts of 2002, Chapter 142, <http://www.state.ma.uslegis/laws/seslaw02/sl020142.htm>.

Although the legislation for each bond issuance only varied slightly, one significant change contained in IT Bond III's legislative authorization was the deletion of a "not to exceed" amount for the bond issuance. During the first two bond issuances, that language created concerns for agencies that needed funds over and above the "not to exceed" amount.

Governance/Oversight of Funding Model
The Commonwealth's Information Technology Division (ITD), in conjunction with the state legislature, played an oversight and coordination role for projects funded by the bond issuance in order to ensure that all investments were in keeping with the state's strategic IT direction. For each bond issuance, ITD generally had to report on expenditures and scheduling timelines for the projects funded to the state Secretary of Finance and Administration as well as to specified state house and senate committees.

Of note regarding the third bond issuance, the IT Bond III legislation required the state CIO within one year after the legislation's effective date to prepare a report to address the use of IT governance strategy in the implementation of the state's IT infrastructure, as well as other issues, such as whether the state's planning and development procedures "enable the coherence of functionality, security and interoperability across state government and work to build mission critical applications that encourage agencies to work effectively with one another." Finally, the IT Bond III legislation also created an IT Commission to recommend an enterprise-wide strategy, including all three branches of state government, for the state's IT infrastructure, systems development and governance.

In order to document and ensure the benefits of bond funded projects, state agencies receiving the bond funds had to submit an "Investment Brief" detailing each funded project, its risks, benefits and integration with the state's IT strategy. As a result of ITD's recent revision of the Investment Brief's requirements, agencies now must estimate a project's Total Cost of Ownership. ITD considers each project from an enterprise perspective and examines where it fits into the portfolio of current and emerging applications.

Legislative and Regulatory Changes in Implementing Funding Model
As described above, the state legislature had to pass legislation to authorize each bond issuance. However, no other legislative or regulatory changes were required to implement this funding model.

Business Case for Implementation of the Funding Model
No formal business case was prepared to persuade the necessary stakeholders to implement this funding model. However, the key objective of the bond issuance model was to promote "One IT Community" and to use the bond funding as a surrogate for legislative appropriations.

Major Hurdles and Benefits of Bond Funding

Major Hurdles
Major hurdles for Massachusetts regarding IT Bonds I and II included restrictive language and the earmarking of funds in the authorizing legislation. For instance, the first two bond issuances provided a "not to exceed" amount for funded projects. That language created a problem for agencies that needed funds in excess of the "not to exceed" amount to complete a project. Agencies in that position would have to request additional funding from the legislature or find

funding from another source. During the IT Bonds I and II, ITD's participation in the development of the funding estimates and understanding of each project's scope, schedule and budget helped to mitigate these concerns. To correct this problem for the third bond issuance, the IT Bond III authorization did not contain the "not to exceed" language, which allowed for the flexibility to make improvements during the funded projects.

Benefits of Funding Model

One of the major benefits that the Commonwealth has identified regarding each IT Bond issuance is the ability to leverage already-implemented agency IT projects. For example, through funding made possible by the IT Bonds, ITD could redeploy code for applications previously developed by one agency so that other agencies could then use the code to build similar applications. Another benefit has been the Commonwealth's ability to use the IT Bond funds to develop novel applications for use by multiple agencies, such as enterprise e-mail, centralized e-payment services, and web services, which benefit the state IT enterprise as a whole.

Additionally, this model assists the legislature in two ways by:

- Avoiding individual state agencies soliciting unique authorizations on a project-by-project basis (thus freeing up legislative resources)
- Ensuring that ITD is well-versed and supportive of all state agencies projects seeking authorization.

Keys to Transferability of the Funding Model to Other States

- Cooperation from the state legislature to enact the appropriate legislation
- Legislative language with enough spending flexibility to allow for mid-project improvements
- Communication and trust between the executive and legislative branches of government
- Oversight by the state CIO or equivalent office to ensure the funded projects' consistency with the state's overall IT direction

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Case Study 2: Texas' Public-Private Partnership & Performance-Based Contracting Models

To fund the development and operation of its state portal, TexasOnline, the State of Texas used the approach of creating a partnership with a private sector vendor through a performance-based contract. This case study provides information on how Texas combined the public-private partnership and performance-based contracting models to successfully fund and implement its state portal.

Background on State IT Funding Needs

In 1999, the biennial state legislature enacted a law that created a taskforce to examine potential e-government initiatives for the state and create a project to demonstrate the value of e-government. Once the taskforce had chosen the TexasOnline portal as its project, it embarked on choosing a funding model for it, because the e-government legislation did not provide project funding.

As an initial step, the Texas Department of Information Resources (DIR) surveyed all then-existing state e-government portals and examined the types of funding models they utilized. DIR found that there were four basic funding models for state portals: (1) a cost-sharing model with a vendor under which the vendor is permitted to sell data to fund the portal (2) the use of subscription or convenience fees to fund the state portal (3) the sale of data and (4) a tax-funded model. The State of Texas chose a hybrid between the first two models-a public-private partnership, under which it was agreed that the vendor would pay for the creation of the state portal and recoup its investment through revenue generated by subscription and convenience fees charged for certain services connected with the state portal. DIR found this approach to be consistent with the sentiment of citizens and businesses at the time, since a DIR survey of those two constituent groups revealed that they supported funding the portal through user fees or other means that did not involve the expenditure of taxpayer dollars.

Implementation of a Public-Private Partnership & Performance-Based Contracting to Address State IT Needs

Description of Funding Models

The Public-Private Partnership Aspect of Texas' Funding Approach: Under the public-private partnership approach, the vendor with whom Texas contracted had responsibility for all costs associated with the development and operation of the portal, regardless of the portal's profitability. The contract initially provided the vendor with the ability to retain 90% of the revenue generated by TexasOnline to offset its upfront outlay to develop and operate the portal.

The TexasOnline portal currently generates revenue from fees charged to citizens. Convenience fees charged to users of certain services provided through the portal, such as driver license renewal fees, constitute approximately 95% of the portal's revenue. Other types of fees that generate revenue for the portal are:

- **Subscription Fees**, which are charged to an entire population for a government service

regardless of whether the user obtains the service online or by other means. An example is the charging of a fee for the renewal of professional licenses, regardless of whether the license is renewed online or via another method, such as in person or by mail.

- **Service Revenue**, which is derived from fees charged to government entities that request that TexasOnline develop applications for them in instances where the government entities do not wish to charge a fee to citizens for use of the application.

To ensure that the vendor would reap profits from the portal, the contract required that the vendor perform marketing and outreach at its own expense. As with its other expenses and capital investment, the contract provided that the vendor would recoup its marketing expenses from the portal revenue. The marketing efforts included public service announcements, press releases, posters, and radio and print ads. Texas found the most effective and low-cost marketing method to be direct mail and the inclusion of inserts about TexasOnline with renewal notices. DIR and other government agencies as well as private entities also performed additional marketing efforts. The marketing efforts for TexasOnline have been integral to its success, because Texas state agencies generally are not required to use TexasOnline. However, thirty-three state licensing agencies are required to use TexasOnline in connection with their online licensing efforts.

While the vendor provided the funds to create the portal, Texas provided the following additional resources. First, DIR initially provided staff resources to develop the project and assist in supporting the TexasOnline Authority, an initially 15-member oversight body for the TexasOnline portal. DIR absorbed the cost of providing those resources during the project's first year. However, approximately $900,000 has been provided to DIR's TexasOnline Division annually so that it can provide staff support. This funding is provided from the state general revenue fund (approximately 70%) and from the portal's revenue (approximately 30%). Those funds are dedicated to DIR's staff to manage the TexasOnline contract and provide support to the TexasOnline Authority. Note that Texas' contract with the vendor does not obligate it to provide this funding for the portal.

In addition to the relatively small amount of funds that Texas has expended in implementing its public-private partnership, Texas' use of this funding model also created a new revenue stream for the state from the fee-based services provided in connection with the portal. The contract provides that Texas share in the portal revenue and that its share in the revenue will increase after the project reaches its "break-even point." The contract defines the break-even point as follows:

All Portal Revenue Generated = Vendor's Capital Investment + All Operating Costs.

Prior to the break-even point, the contract provides Texas with 10% of the gross revenue generated by TexasOnline. After the break-even point, Texas' share of the revenue will increase by an additional 50% of the net revenue from the portal. Texas also will acquire title to all equipment and software supporting TexasOnline after the vendor reaches its break-even point. The TexasOnline portal became profitable regarding its operational costs in 2003 and is expected to reach its financial break-even point in 2005.

The Performance-Based Contracting Aspect of Texas' Funding Approach: Since the contract provides that the vendor will recoup its initial investment of funds from the revenue generated by the portal, TexasOnline includes aspects of a performance-based funding model to help ensure the quality of the vendor's performance. The contract provides certain service level metrics that the vendor must attain, such as 99.5% uptime. For each critical metric, the vendor

is given a credit for achieving the metric or charged a monetary penalty for failing to achieve the metric. The contract, however, permits the vendor to use any service level credits it has earned to offset any penalties incurred.

Even though the contract provides for performance measures as a way to ensure vendor performance and the generation of the anticipated revenue stream, TexasOnline's approach to performance-based contracting constitutes a departure from the traditional approach to that funding model. Normally, performance-based contracting focuses on the vendor's ability to achieve agreed-upon metrics or performance measures. However, TexasOnline's approach adds an additional incentive for the vendor to achieve or exceed the anticipated performance levels, because the vendor's profitability is directly tied to its performance. Under Texas' approach, the vendor must perform and persuade agencies, citizens, and other constituents to use TexasOnline in order to generate revenue sufficient to recover its investment.

Governance/Oversight of Funding Models

The TexasOnline Authority, a statutorily created governing body, is tasked with implementing the TexasOnline portal project and currently consists of 18 members, including individuals representing state agencies, local governments, higher education, regulated businesses, and the general public. Note that the TexasOnline Authority originally had 15 members, but, during the last legislative session, three additional members were added. The TexasOnline Authority provides operational oversight for TexasOnline, including:

- Developing operational policies
- Considering applications to use with TexasOnline
- Operating and promoting TexasOnline
- Complying with financial requirements
- Overseeing vendor performance
- Overseeing money generated for the operation and expansion of the project
- Developing project pricing policies
- Evaluating participation in the project to determine if performance efficiencies or other benefits and opportunities are gained through project implementation
- Advising DIR regarding the project, and
- Coordinating with DIR to receive periodic security audits of TexasOnline's operational facilities.

Other important aspects of the legislation that created the TexasOnline Authority are that it provides for mandatory training for each member of the Authority and requires the Authority to report every other year on the status, progress, benefits and efficiencies gained from TexasOnline to the Governor, the presiding officer of each house of the legislature, the chair of each committee in the legislature that has primary jurisdiction over DIR, and each state agency or local government participating in TexasOnline.[7]

In contrast with the TexasOnline Authority's policymaking role, which it performs via monthly meetings, DIR plays a management role with respect to the TexasOnline contract and the portal's day-to-day operations. DIR also provides staff support to the TexasOnline Authority.

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[7] Senate Bill 187 (77th Legislature), <http://www.capitol.state.tx.us/tlo/77r/billtext/SB00187I.HTM>.

Legislative and Regulatory Changes
The legislative changes required to facilitate TexasOnline involved the fees charged for certain portal-related services. First, it was unclear whether agencies could legally charge users for providing credit cards as payment of the user fees. Second, convenience and other fees charged to users by agencies generally are set by the legislature, and it was unclear whether agencies could add convenience fees for services rendered via the state portal. Hence, legislation was required to allow state agencies to charge both fees for the payment via credit card of user and convenience fees for citizens' use of certain portal-related services. Legislative changes also were required to allow state agencies using TexasOnline to charge a subscription fee (after approval by the TexasOnline Authority) to specified user populations, such as citizens holding professional licenses, in order to cover the costs of the portal.

From the regulatory perspective, agencies participating in the TexasOnline portal project had to modify their rules to charge subscription or user fees.

The Business Case for Implementation of the Funding Model
Although Texas did not create a formal business case to justify its funding of the state portal through a hybrid of the public-private partnership and performance-based contracting models, it did conduct a survey of various constituent groups, including citizens and businesses, to determine their preferences about funding TexasOnline. The survey results overwhelmingly supported the use of fees as opposed to taxpayer dollars to fund the portal. Of note, though, citizens of Texas may have a heightened acceptance of user fees, because those fees are relied upon in Texas more so than other states, since Texas does not have a state income tax.

Major Hurdles and Benefits

Major Hurdles
DIR faced both legal and oversight/governance obstacles regarding its implementation of performance-based contracting in the context of a public-private partnership. The state ultimately found that good communication between the state and the vendor was key in overcoming the obstacles.

One of the primary legal issues stemming from the use of the public-private partnership model focused upon the ownership of the trademark for the TexasOnline logo. Originally, the vendor held the intellectual property rights to the TexasOnline trademark. However, both the vendor and the state realized that, in the event of a dispute regarding the trademark, the vendor, not the state, would have to defend intellectual property rights embodied in the trademark. Thus, both the vendor and the state agreed that the state should hold the rights to the TexasOnline trademark and have responsibility to defend those rights, if disputed.

As a result of the vendor's involvement in the creation of the state portal, a second legal issue arose that centered upon the transferability of assets, including proprietary software, to the state. The parties agreed in the contract that the portal's assets would transfer from the vendor to the state once they reached the break-even point. The contract further provided the state with the option to terminate the contract early. In that event, the contract provided an early termination option under which the state could buy-out the vendor and receive all assets associated with the portal at a cost of the lesser of the assets' depreciated value or recovered value.

A third legal issue concerned the state's ability to access the vendor's financial records regarding its progress towards the portal's break-even point. This issue stemmed not only from the public-private partnership aspect of the project, but also from the state's need to gauge the vendor's performance level. The state worked with the vendor to determine what types of information should be contained in the vendor's records and when the state can access those records. The parties also agreed upon the need for an annual financial audit of the vendor's records.

The major oversight issue involved balancing the interests of the state with those of the vendor regarding whether to take on or forgo certain projects with the potential to impact the timeframe for reaching the break-even point. The TexasOnline Authority has the responsibility of approving work on projects associated with the portal, such as adding new citizen services to the portal. The philosophy of the TexasOnline Authority regarding the charging of user fees was that the portal is for all government entities and citizens. Hence, the portal needs to provide some services that traditionally are free, thereby potentially making other fee-based services a little more expensive. In making decisions about whether to pursue certain projects, the TexasOnline Authority had to balance that basic philosophy with the vendor's profitability concerns. To ensure that it remained true to its philosophy, while satisfying the vendor's profitability expectations, the TexasOnline Authority and DIR found that it was important to make sure that the parties understood the dual goals of the project and how the TexasOnline Authority's decisions would facilitate the achievement of the goals.

Benefits

Public-Private Partnership Model: The benefits of using a public-private partnership to fund the TexasOnline portal include:

- Practically no up-front costs to the state in the acquisition of the TexasOnline infrastructure
- Creation of a new source of revenue for the state that is projected to increase as the use of TexasOnline expands
- Facilitation of access by all levels of government to an electronic means of conducting business with constituents
- Establishment by the vendor of a funding approach and technology that can be replicated in other markets.

Performance-Based Contracting Model: The benefits of using a performance-based contract to fund the TexasOnline portal include:

- Setting of measurable expectations by which both the state and the vendor can determine a project's progress
- Creation of an incentive for the vendor to achieve high levels of project performance by giving the vendor a stake in the revenue generated by the project.

Because Texas categorizes the use of a public-private partnership (as well as performance-based contracting) as an unqualified success in the development and implementation of the TexasOnline portal, the state is planning to use the model in a slightly modified form for the development of Texas' electronic procurement system. Texas will seek a vendor to be responsible for the procurement system's development and operating costs. The vendor will be expected to recover its expenses from fees charged directly to the system's users. In contrast to the contract used in the TexasOnline project, the state also will seek funding from the vendor to support its contract oversight and management costs.

Keys to Transferability of the Funding Model to Other States

Transferability of the Public-Private Partnership Funding Model:

- Selecting a vendor willing to be responsible for paying the initial project development and operational costs with the expectation of recovering those expenses over time out of the project's profits
- Strong legislative support and an understanding of how technology can save the state money
- Allowing the vendor to take a leadership role in activities that are outside of the normal areas of state expertise (such as marketing)
- Ensuring state-vendor cooperation on vital property issues, such as trademark ownership and transferring assets (such as proprietary software) to the state
- Ensuring an acceptable level of buy-in from governmental and other stakeholders so that a sufficient level of subscription or user fees is generated
- Securing of legislative and regulatory cooperation regarding the charging of subscriber or user fees.

Transferability of the Performance-Based Contracting Model:

- Ensuring that the state and the vendor set realistic performance measures or metrics
- Ensuring that good communication and agreement exist between the state and the vendor on decisions impacting the project's break-even point
- Ensuring adequate oversight of the vendor's performance.

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Case Study 3: Minnesota's Sharing Services Model

Faced with a large budget deficit and a decentralized IT structure, the State of Minnesota is embarking on an effort to bring state agencies together in order to determine how they can share their best practices and collaborate on consolidating and integrating state IT infrastructure, business processes and applications development. The case study below details how Minnesota is beginning to facilitate cross-agency sharing of citizen services, business solutions and other IT best practices to reduce state IT costs while working to improve services to citizens.

Background on State IT Funding Needs

In the spring of 2003, the State of Minnesota was dealing with a $4.5 billion budget deficit and a lack of funding from the state legislature for new technology initiatives. These concerns compounded the pre-existing challenges presented to state technology innovation that resulted from Minnesota's decentralized IT structure. This led state technology leaders to decide that better cross-agency sharing and collaboration would assist the state in reducing statewide IT costs and increasing cross-agency sharing of costs. Hence, the state began to develop a sharing services model to allow state agencies to share their ideas, best practices and even collaborate on IT projects and systems.

Implementation of the Sharing Services Model to Address State IT Needs

Description of Funding Model

The basis of this funding model is to improve citizen services and reduce state IT costs by taking a more collaborative, enterprise approach to state IT. On a fundamental level, Minnesota's sharing services model involves a cultural transformation in which agencies will work to collaborate on mutually beneficial projects and share their best practices. The state is at the beginning of this model's implementation and considers it an ongoing process that will continue well into the future.

To begin the collaborative process, Minnesota's Office of Technology (OT), with the support of the state Information Policy Council (IPC) and the support of the Governor, conducted a cross-agency summit in April 2003. State agency CIOs, their technology staff members and business partners participated in the one-day conference, which was called "Sharing Services/Serving Citizens." Prior to the conference, OT had solicited proposals for presentations on services with potential for cross-agency sharing and collaboration. The conference featured presentations on eighteen agency services that other agencies could leverage to reduce IT costs and improve the quality of citizen services. Participants in the conference were asked to complete a survey card identifying any of their initiatives that were similar to the initiatives presented during the conference in order to identify areas of cross-agency sharing and collaboration.

Based upon the conference survey responses, OT identified communities of interest around certain agency best practices and potential areas of collaboration, including:

- Training
- Grants management

- Fleet management
- Case management/citizen contact centers
- Document imaging/electronic documents filing.

OT then began to conduct follow-up meetings with interested individuals in June 2003 as a step towards organizing the communities of interest into "Excellence Teams" that will pursue collaborative and sharing efforts. OT also has partnered with the Department of Administration's Management Analysis Division (MAD), which provides management and consulting services to state agencies and local governments on a fee-for-service-basis. Recently, MAD has been working to develop a funding model to allow it to provide up to 100 hours of gratis consulting services for OT's sharing services efforts. Since funding has not been dedicated to OT's sharing services effort, the MAD's ability to provide a certain number of hours at no charge in order to assist in organizing the Excellence Teams has been helpful. Note that OT is continuing to pursue other potential sources of funding for this effort.

In the initial stages of implementing its sharing services model, Minnesota identified the need for aggregated software purchases and better leveraging of the state's investment in hardware and software. To that end, OT is pursuing efforts to issue an RFP to solicit ideas for enterprise licensing. In essence, OT is serving as the Excellence Team for increasing the savings that are possible with aggregated purchasing.

Another example of the early success that OT has had with its sharing services model is the community of interest that has formed around the area of grants management. Currently, Minnesota agencies manage their own state and federal grant dollars, since the state does not have a common way of managing grants across the state. To identify commonalities and differences in the way Minnesota agencies manage their grants, individuals from approximately twenty agencies are meeting regularly to conduct such an analysis. The goal of the group's effort is to determine if there is a common approach or system that would assist agencies statewide with grants management. It is important to note that individuals participate in the group on a voluntary basis.

Governance/Oversight of Funding Model

One of OT's core functions is to facilitate sharing and collaboration across the state in IT. Although participation in its sharing services model is voluntary on the part of state agencies, OT's review of agencies' technology RFPs for $100,000 or more and the Statements of Work related to those RFPs assists OT in identifying possible areas of collaboration and helps it to ensure that agency technology initiatives are consistent with the state's strategic IT direction.

While OT manages the day-to-day aspects of its sharing services model, the state's Information Policy Council (IPC) also plays an important role in the state's sharing services effort. The IPC itself is a model for collaborative technology efforts, since it is a governance team comprised of members from each state agency (normally the agency CIO or equivalent). The IPC broadly provides advice and guidance on integrating and operating the state's information resource facilities and on providing leadership and services in information technology efforts. Through its work to facilitate cooperation among the agencies, the IPC assists in moving the sharing services model forward. The IPC also provides guidance to OT on areas in which the state needs to collaborate and find a common solution to technology concerns that exist throughout multiple agencies.

Finally, it is anticipated that Minnesota's new CIO will bring a statewide perspective to the state's technology efforts, thereby providing further momentum to its sharing services model.

Legislative and Regulatory Changes
No legislative or regulatory changes were necessary in order for Minnesota to begin implementation of its sharing services model. OT already had the statutory authority necessary to facilitate cross-agency collaboration and to provide governance for the state's IT expenditures. However, OT has worked to emphasize among state agencies and the legislature how it can play a vital role in building a foundation for agencies' collaborative technology-related efforts. OT also is committed to working through the legislature to remove obstacles that prevent collaboration.

Business Case for Implementation of the Funding Model
While Minnesota did not draft a formal, written business case for developing and implementing the sharing services model, OT has stressed the need for increased cross-agency sharing and collaboration in light of reduced funding for technology initiatives. Although participation in its sharing services model is not mandatory, OT also has pointed out to agencies that some of the state's collaborative efforts prior to the initiation of its sharing services model have resulted in substantial savings. For example, by aggregating purchases of desktops across the state's educational institutions over the past 18 months, schools have saved a total of $2.5 million. The participating schools have then been able to reinvest their savings in other much-needed school programs.

Major Hurdles and Benefits of Sharing Services

Major Hurdles
The major hurdle to using this funding model has been to garner the voluntary cooperation of state agencies. To begin to move beyond this hurdle, OT has worked to foster a cultural transformation in how agencies view technology-related collaboration. OT is continuing to emphasize to agencies that they can maintain control over their core business functions, while working to collaborate on technology-related efforts that will result in savings, efficiencies, and improved citizen services.

Benefits
Since its sharing services model is new, estimates on savings are not yet available. However, Minnesota expects that the savings may be substantial. Savings will be identified as some of the larger implementations take place. Other anticipated benefits Minnesota has identified are:

- Economies of scale for hardware and software as a result of aggregated purchasing
- Better utilization of specialized staff skills to produce faster solutions at reduced costs
- Cost sharing among agencies
- Improved citizen services
- Increased standardization of infrastructure.

Keys to Transferability of the Funding Model to Other States

- Support of the Governor, other top state officials, and state business partners to ensure agency buy-in

- Garnering agency buy-in particularly through including representatives from multiple agencies in an initial kick-off conference or event
- Conducting a survey to identify possible areas of collaboration or duplication
- Oversight by the state technology office and other state partners to coordinate agencies' efforts and ensure that they are in keeping with the state's IT direction
- Authority of the state technology office to facilitate statewide collaborative efforts.

View the Information Policy Council's website on the sharing services model at: http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536882551&agency=Information_Policy_Council.

View a handout detailing the conference presentations at: http://www.state.mn.us/mn/externalDocs/Sharing_Services_Poster_With_Attachments_073103023434_Poster.pdf.

View a report from Gartner on this Minnesota funding initiative at: http://www.state.mn.us/mn/externalDocs/Budget_Crisis_Forces_Shared_Sevices_in_Minnesota_073103030313_114725.pdf.

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Case Study 4: Tennessee's Investment Fund & Leasing Models

The State of Tennessee's investment fund arose from the need for a pool of funds to assist state agencies with large applications development projects and equipment purchases. Through a one-time legislative appropriation, Tennessee created its Systems Development Fund, which is available to provide loans to state agencies for their IT projects. The investment fund also provides monies for IT equipment that can be leased to state agencies. The case study below details the development of the fund, how it has funded the leasing of equipment to state agencies, and its continuing success.

Background on State IT Funding Needs

Almost fifteen years ago, Tennessee analyzed IT trends and issues specified by state agencies and identified the existence of a short-term lack of funding for IT projects that would serve as the infrastructure for providing citizen services. More specifically, the state identified the need for a mechanism to allow state agencies to borrow funds in the short-term to finance large projects. Agencies of all sizes and from each branch of state government echoed this need. To address this need, Tennessee created its Systems Development Fund (SDF).

Implementation of the Investment Fund and Leasing Funding Models to Address State IT Needs

Description of Funding Models

Created by a one-time appropriation of $10 million, the SDF provides loans to state agencies that must be paid back within a timeframe that normally is not in excess of five years. Funding from the SDF is used primarily for large application development projects and large equipment purchases costing $100,000 or more. However, loans in smaller amounts are made available where a sufficient need for funding has been established, such as for the IT projects of smaller agencies. Over time, the SDF has grown to nearly $45 million, with a separate equipment replacement fund of over $10.6 million additional dollars that is used to extend money to agencies for hardware refresh when the agencies are not able to fund the refresh up-front. The overhead and administration fee for hardware refreshes is two percent.

Tennessee's Information Systems Council (ISC) allocates SDF funds from year-to-year based upon the recommendation of the state's Commissioner of Finance and Administration. In order to receive funding from the SDF, agencies perform a cost-benefit analysis as prescribed by the Office for Information Resources (OIR). The cost-benefit analysis must include the following five elements:

- A financial summary with project cost summaries, the year of payback, and all funding sources
- An initial cost estimate for the project's planning, construction and implementation phases and the confidence-level, stated as a percentage, regarding the accuracy and completeness of each cost estimate
- An operational cost estimate for post-implementation expenses
- An assessment of the project's risks that are classified as either "high" or "normal"

- An assessment of the project's benefits, including service benefits, enhanced financial benefits, increased agency revenue, decreased costs, increased state revenue, cost redirection, and cost avoidance.

Note that for projects that are not expected to generate savings sufficient to fund the SDF loan's payback, the loan will not be made until an agency has approximately one-fifth of the total amount of the loan in its existing budget and has a demonstrable relationship to a strategic business need.

Most projects funded by the SDF are for software, personnel and related costs. For any given fiscal year, from $1 million to $8 million would be released for agency use or paid back into the fund on a revolving basis. Regarding the timeframe for agencies to pay back SDF loans, agencies usually must pay back their loans in five years. If a project will generate sufficient savings to fund the loan's payback, then the payback does not begin until the project has been implemented. SDF loans for software and professional services are particularly advantageous methods of funding projects since interest does not accrue on them.

Funds from the SDF also may be used by the state's OIR to fund the acquisition of hardware for other state agencies. Under this use of SDF funding, OIR purchases the hardware with SDF funds and then leases the hardware to other state agencies. However, for this funding arrangement, agencies must pay interest for the lease of the hardware to offset the cost of OIR's acquisition of the hardware.

To ensure the continuing vitality of the fund, each year's appropriations bill empowers the Commissioner of Finance and Administration to transfer any available agency savings into the SDF, if the Commissioner so chooses. An example of an additional payment into the SDF might be funds from a short-term over-collection on one of the various chargeback rates for IT services.

Governance/Oversight of Funding Model
The OIR plays the primary decision-making role for administration of this fund, subordinate to the ultimate review of the Commissioner of Finance and Administration and the ISC. Note that the ISC governs the state's strategic direction in technology and is composed of legislators, a judicial member, Executive Branch officials, and a private sector member. The ISC created the SDF and analyzes on an annual basis the individual projects funded by the SDF and the financial status of the SDF.

Legislative and Regulatory Changes
The only action of the legislature required for this funding model was the initial appropriation of funds that provided seed money for the investment fund. No regulatory changes were required for the creation and implementation of this funding model.

Business Case for Implementation of the Funding Model
The most important point of persuasion for the creation of the SDF was the fact that all projects funded through the SDF have to support the individual agency's strategic business needs or those of the Governor. Hence, the SDF funds are to be used to truly support the state's strategic IT needs.

In addition to the Cost-Benefit Analysis stated above, the annual IT-ABC (IT Assessment and Budget Committee) requires a rigorous Business Case Analysis for projects. But overall, it is a collective assessment of the Cost-Benefit Analysis that determines the merit of any project for SDF funding.

Major Hurdles and Benefits of the Investment Fund Model

Major Hurdles
The major hurdle for Tennessee in successfully implementing the SDF was ensuring the success of the projects funded by the SDF and agencies' ability to pay back the SDF loan funds. To overcome this hurdle, the state created a process to define, assess, approve and monitor projects receiving SDF funds. This process is outlined under the "Description" portion of this case study.

Benefits
The ability to finance large IT projects on a continual basis through a pool of money that is not tied to the volatility of legislative appropriations has allowed Tennessee to act more effectively on its evolving IT priorities.

Keys to Transferability of the Funding Models to Other States

- Allocation of initial seed money in the form of a one-time legislative appropriation
- Ability to recapture agency IT savings and re-invest them in the investment fund
- Having a funding application process in place that is sufficiently detailed for a governing body to make the right decisions to ensure that funded projects are successful and that the investment fund loans can be repaid by agencies in a timely fashion
- Creation of a process to monitor on an annual basis the financial status of the investment fund and the projects funded out of it to ensure the investment fund's continued vitality.

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Case Study 5: Ohio's Certificates of Participation Model

The State of Ohio currently is in the process of considering the use of Lease-Purchase Certificates of Participation (COPs) as a potential funding mechanism for a statewide Enterprise Resource Planning (ERP) system. While Ohio officials have not yet decided to implement the ERP system or to use COPs as a financing method, this case study documents how a state might implement this funding model and its anticipated benefits and obstacles to implementation.

Background on State IT Funding Needs

In 2000, the State of Ohio began assessing the need for an ERP system for business functions that cut across the state enterprise, such as the management of capital improvements, fixed assets, human and financial resources, and procurements. This proposed ERP project has been named the Ohio Administrative Knowledge System (OAKS). At the time that the state began looking into the OAKS project, the possibility of a $200 million deficit made it highly unlikely that the state budget could support a major outlay of funds for the OAKS system.

As an alternative funding mechanism, the agency leaders of the OAKS project, including officials from the Department of Administrative Services, the Office of Budget and Management, the State Auditor's Office, and the State Treasurer's Office, have considered lease-purchasing the OAKS system. In order to achieve the lowest possible interest rate on the lease payments, the state will structure the lease-purchase as follows:

- The state will agree to make semi-annual lease payments to the ERP provider, who is the lessor of the OAKS system (note that a third-party financing agent may also serve as the lessor)
- The lessor will sign the lease payments over to a trustee
- The trustee will sell the lease payments to investors in the form of COPs

The interest portion of the COPs payments will be tax-exempt, thereby taking advantage of the low tax-exempt interest rates available to the State of Ohio. Under this scenario, the users of OAKS will pay the Ohio Department of Administrative Services and the Department will pay the trustee, who will pass the payments on to the participating investors.

It is important to note that Ohio previously had used Certificates of Participation to fund the purchase of heating and cooling equipment for school districts. For that project, the actual savings realized by reduced utility costs were used to repay the investors holding the Certificates of Participation.

Potential Use of Certificates of Participation to Address State IT Needs

Description of Funding Model

The use of COPs as a funding model is a non-traditional form of borrowing that typically is used to fund smaller state and local projects. This funding model is based upon the premise that investors will provide the up-front funding of an IT system that the state in turn lease

purchases. The investors receive a share of the state's ongoing lease payments. Once the state has made lease payments totaling the purchase price of the system plus interest, the state will, in effect, have purchased the system. This leasing arrangement is desirable from the state's perspective, because it allows the state to pay for the IT system over a period of time. This funding model also differs from more traditional general obligation bonds in that COPs typically do not count against Ohio's debt ceiling, since they are not issued by the state, as is explained below.

This funding model is more complex than general obligation bonds in that it involves numerous participants, lease and trust agreements, and the possibility that investors would want the payments to be protected by third-party insurance. Ohio officials anticipate that the use of COPs to fund the OAKS system might include the following steps:

- **The state selects a vendor and enters into a lease agreement with the vendor (or a financing entity created on behalf of the vendor)**

  Under the lease agreement, the vendor agrees to create the IT system for the state. The state agrees that the vendor will receive payment up-front for the system via the funding method detailed below.

- **The state enters into a trust agreement with a bank trustee who will receive the state's lease payments on behalf of the vendor or financing entity**

  The bank trustee enters into an agreement with the state to certificate the state's obligation to make lease payments and offers the certificates of participation to investors through an investment banking firm. Proceeds from the sale of the certificates are used to provide funds up-front to the vendor.

- **The bank trustee works with an underwriter to obtain investors**

  In most cases, the bank trustee works with an underwriter to obtain investors. However, the bank trustee may also choose to forego hiring an underwriter and obtain investors on its own.

- **The investors receive certificates of participation in exchange for their investment of funds**

  The underwriter sells the COPs in exchange for their investment of funds. The COPs entitle investors to receive a portion of the state's lease payments.

- **The trustee forwards the investors' funds to the vendor**

  The vendor uses the investors' funds to pay for the creation of the new IT system.

- **The state makes lease payments to the trustee**

  The state can obtain funds from a variety of sources in order to meet its periodic lease payments. For instance, the state could charge agencies for use of the new IT system and aggregate that revenue into a fund out of which it would pay the

lease payments. Another option would be for the state to pay its lease payments with monies out of the state's general fund. In that case, the state would use the revenue generated from the new IT system to reimburse its general fund. Note that the investors generally would prefer to be paid directly from the state general fund, because the use of the state general fund removes any uncertainties associated with the timing and adequacy of agency charges.

- **The bank trustee forwards the state's lease payments to investors**

  The trustee makes payments to investors on an agreed upon schedule as provided for in the COPs.

  The investors receive a higher interest rate on COPs than they would on a state's general obligation bonds, since investors are taking a greater risk with investing their funds in COPs. General obligation bonds have a lower degree of risk, because they are secured by a state's full faith and credit, meaning that a state does not have to rely on its legislature to appropriate funds to repay the bonds and can take any measures necessary to do so. In the case of COPs, investors must rely on the state legislature to appropriate the lease payments.

- **The state, at its own expense, may obtain insurance to secure the investors' funds**

  The state may obtain insurance from a bond insurance company to provide risk mitigation for the investors if the state cannot pay its lease payments. This situation might occur if the project faces abatement for non-use or additional anticipated funding is not appropriated by the legislature. In exchange for the payment of premiums, the insurance company would provide payments to investors in such situations.

Ohio expects that, should it use COPs to fund an IT system, other funding methods would be used in addition to COPs.

Government/Oversight of Funding Model
It is expected that if COPs were to be used to fund a state IT system, the Department of Administration (and its Division of Information Services) along with the state's Office of Budget and Management would oversee the state's lease payments.

Legislative and Regulatory Changes
Although not required, state officials have indicated that legislative support would be a prerequisite to moving forward with the OAKs project and the use of COPs as a funding mechanism. Legislative support could be sought and documented in the form of an uncodified law. Regulatory changes also might be necessary in order for the state to charge agencies fees for the use of the new IT system.

Business Case for Possible Implementation of the Funding Model
Ohio developed a business case to illustrate the costs and benefits of the OAKS project that might be partially funded by COPs. The major advantages of using COPs are that the vendor receives payment up-front, while the state is allowed to make payments on the new IT system over a period of time as opposed to payment for the entire IT system in one lump sum. It also allows the state better access to the capital investment market than it would have with other funding models.

Major Hurdles and Benefits of Certificates of Participation

Major Hurdles
In addition to the major hurdle of securing legislative approval, the cost to the state of issuing COPs could be 0.5% to 1.0% higher than the issuance of tax-exempt bonds. The higher cost to the state of COPs is due to the higher interest rate paid to investors to compensate them for increased risk and the cost of insurance to guarantee investors full and timely payment. However, one advantage to using COPs is that it avoids the pledge of tax dollars to directly fund a project.

Benefits of Funding Model
Should Ohio implement the OAKS system and fund it through COPs, the anticipated benefits of this funding model might include increased access to the capital financing markets and avoidance of the use of taxpayer dollars to directly fund the system. This funding mechanism also allows the state to pay for the new IT system over a period of time, while the vendor receives payment up-front for its work

Keys to Transferability of the Funding Model to Other States

- Securing legislative approval for the issuance of COPs
- Ensuring that state oversight of the players involved in the use of COPS is sufficient to meet investors' expectations
- Securing insurance to protect investors against the risk that the state will not appropriate payments on COPs
- Ensuring that investors will be paid in-full and on-time.

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Case Study 6: Missouri's Purchasing & Procurement Strategies Model

In order to improve the procurement of information technology services with more closely defined deliverables and reduced risk, the State of Missouri introduced the Project Assessment Quotation (PAQ) as an integral part of the bid process. The implementation of this process has resulted in lower contract bids by the vendors and increased flexibility for state government to define deliverables with greater accuracy based upon current knowledge during a project.

Background on State IT Funding Needs

In the past, when bidding large information technology consulting services projects in Missouri, the Division of Purchasing and Materials Management (Division of Purchasing) required bidders to quote a total firm, fixed price for each deliverable identified in a project's specifications. However, a number of factors including decreasing state personnel resources, rapidly changing technology, time constraints, and increasingly complex projects have made up-front identification of detailed deliverables all the more difficult and, quite often, simply impossible.

Frequently, with large information technology consulting contracts, particular segments of the given project cannot be adequately defined until key components or phases of the project have been completed. Providing project specifications in advance of such phases' completion has proven to be premature in many situations and has not served the state's best interests in implementing a given project. Without sufficiently detailed deliverables, bidders perceive too great of a risk of error in quoting a total firm, fixed deliverable price and consequently object to that type of pricing structure. Under such circumstances, bidders then ultimately respond with much higher pricing that reflects the risk of the unknown. Likewise, Missouri has found these types of contracts to be overpriced, inflexible and resource-intensive to manage.

Contracts established with the old pricing methodology also did not readily accommodate project changes. The Division of Purchasing's information technology customers had grown weary of arguing with contractors over whether each change to any given project should be considered within the contract's scope or outside of it. If a given change was determined to be outside of the contract's scope, then the Division of Purchasing deemed the contract to be lacking effective cost containment mechanisms that are supposed to ensure that the contractor does not overcharge Missouri for out-of-scope changes. This resulted in the contractor and Missouri being inappropriately focused on their adversarial relationship rather than working as a partnership to complete the work at hand.

Use of Project Assessment Quotation (PAQ) to Address State IT Needs

Description of Funding Model

It was clear that the Division of Purchasing needed to devise a contracting mechanism that would readily accommodate "deliverables on demand," rather than making agencies have to attempt to identify all project details and all deliverables even when it would be premature to do so. To be successful, the contracting mechanism needed to foster a partnership between Missouri and the contractor, provide flexibility with adequate cost containment provisions for the state project manager, minimize the unknown quantities or risks for the contractor, and provide for a mutually developed work plan.

To address these needs, the Division of Purchasing created a Project Assessment Quotation (PAQ), which is essentially a "bid-within-a-bid" process. Rather than have the bidders price the entire project by deliverable, the state asks the bidders to provide firm, fixed pricing for easily defined products and services such as hardware, software, installation, maintenance and any readily definable services deliverables. For the portions of the project that may not be so readily definable, such as system design and business process reengineering, the state asks the bidders to provide either firm, fixed hourly pricing for applicable personnel classifications or a uniform hourly rate applicable to all personnel classifications. These hourly rates are then used later as the basis for pricing such deliverables when they can be more appropriately defined. The process is similar to a series of miniature negotiation sessions with the contractor that may be held throughout the contract's duration.

Once it had created and refined the PAQ process, the Division of Purchasing held various training sessions for information technology staff on the use of the PAQ within awarded contracts. Discussions and presentations at the meetings of the Information Technology Advisory Board assisted in raising agencies' awareness of the PAQ process. In addition, the Division of Purchasing makes the PAQ process a regular part of complex information technology RFPs.

Governance/Oversight of Funding Model

A number of defined steps in the PAQ process provide a consistent, repeatable methodology and approval process. After award of the contract, an agency carves out the first piece of the project they would like the contractor to perform by initiating a PAQ request, which identifies the agency's specifications for that portion of the project. The contractor then responds with a draft PAQ that identifies the following:

- The cost (based upon the firm, fixed hourly rate(s) already priced in its original bid)
- The amount of time to complete the project, and
- The technical and strategic alternatives and solution recommendations.

After the agency approves the draft PAQ (and note that the agency may request modifications to the draft PAQ), the contractor provides a final PAQ that clearly delineates the following:

- Each party's responsibilities
- Pricing
- Project completion timelines
- Mutually agreed upon milestones for providing compensation to the contractor
- Formal acceptance criteria.

The final PAQ requires the agency's approval as well as the issuance of an official order from the agency for the contractor to start work. Ultimately, the Division of Purchasing receives a copy of the final PAQ.

The contractor is not compensated for the preparation of PAQs, and the state typically reserves the right to reject a PAQ and bid any given portion of the project separately if a mutually agreeable solution cannot be reached. In addition, subsequent PAQs can be used to accommodate project changes. Recently, the Division of Purchasing took the opportunity to expand the flexibility of the PAQ process by allowing Missouri to go so far as to make mandatory for certain types of PAQs payment holdback provisions, liquidated damages provisions and performance bonds. The Division of Purchasing is not only including the PAQ mechanism in almost all of the IT IFBs/RFPs with any consulting services elements, but state agencies are also asking the

Division of Purchasing to amend existing consulting services contracts to allow the PAQ process to be utilized under the existing hourly contract pricing. A future step will be to build a web-based application with the capability to submit both RFPs and PAQs online.

Besides providing a tool to help improve the delivery of projects on time and within budget, the PAQ process also focuses the state on procuring defined deliverables rather than open-ended projects that may serve as a staff augmentation strategy. With clearly defined deliverables and guaranteed rates for consulting services, the chance for miscommunication is greatly reduced and state-contractor relationships can operate from a positive perspective to accomplish the project.

Legislative and Regulatory Changes
The implementation of the PAQ process did not require any legislative or regulatory changes on the part of the agencies.

Business Case for Implementation of the Funding Model
Although the Division of Purchasing did not create a formal business case to implement its PAQ process, the need for it had been made clear by past IT procurements.

Major Hurdles and Benefits of Purchasing & Procurement Strategies

Major Hurdles
Although Missouri did not face any major hurdles to implementation of the PAQ process, it still has had to create statewide awareness of the program and provide the appropriate education to agency staff members.

Benefits of Funding Model
The internal benefits received from the PAQ process are:

- Fostering a partnership between the state and the contractor that entails a commitment to long-term success on both sides as each portion of the project is completed
- Minimizing the risk for both parties by only handling manageable portions of the contract at a time
- Providing project managers with a great deal of flexibility to effectively manage contracts and prioritize and readily adapt to legal or technology-related changes or knowledge gained through work on other projects (note that the PAQ process places a good deal of responsibility on project managers)
- Minimizing the unknown quantities or risks for the contractor that are typically associated with large IT projects by not requiring contractors to build such risk factor cushions into their pricing
- When the PAQ process is coupled with the practice of multiple award contracts to primary, secondary and tertiary vendors, improving the competitive environment, which results in lower priced services
- Formalizing previously open-ended IT service contracts that provided for work on an as-needed, if-needed basis by allowing the state to set parameters on those contracts, specify tasks to be completed, and establish fixed pricing for each PAQ
- Allowing agencies to retain savings resulting from the PAQ process, which the agencies can, in turn, reinvest in other needed services.

The external constituent benefits from the PAQ process are:

- Quicker implementation of state programs that provide citizens with improved services and access to government
- Increased savings which can be reinvested in additional IT projects that will provide citizens with better ways of interacting with the government electronically.

Keys to Transferability of the Funding Model to Other States

- Legislative and regulatory environments that do not have restrictions barring the implementation of a PAQ, bid-within-a-bid process
- A good working relationship between the IT and Purchasing Divisions within the state
- A good project management program that is practiced among agencies to ensure that the PAQ processes are followed.

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Case Study 7: Delaware's Outsourcing Model

The State of Delaware has outsourced the creation of an e-payments processing platform to allow agencies to accept payment for services by credit card, a convenience to allow citizens more flexibility in doing business with the government. This case study details how Delaware implemented this outsourcing model to ensure the e-payments system's efficiency and cost savings, while providing improved citizen services.

Background on State IT Funding Needs

Recently, Delaware's Department of Technology and Information (DTI) discovered that several state agencies were considering creating their own e-payments processing system to allow users to pay for online services via a credit card. To avoid the costly creation of three e-payments processing platforms by different vendors, DTI decided to investigate creating a single statewide e-payments platform that it could then deploy to multiple state agencies. Based upon the level of expertise required to implement the platform, DTI decided to draft a Request for Proposal (RFP) and outsource the project to a private sector vendor. For more detail regarding DTI's process for deciding whether to outsource the building of the platform or whether to rely upon in-house expertise for the project, please see the section entitled "Business Case for Implementation of the Funding Model" of this case study.

Potential Use of Outsourcing to Address State IT Needs

Description of Funding Model

In order to fund the creation of the platform, DTI put forth funds from its existing budget to cover start-up costs. This created a selling point that DTI used with agency stakeholders, since agencies would only be charged for their utilization of the system once created. It is important to note that Delaware did not try to recover the cost of building the platform from the fees it charges to agencies that use the platform.

DTI then developed an RFP that elicited from prospective vendors three basic types of information. First, the RFP asked for the extent of the vendor's expertise in creating and deploying e-payments processing systems. Second, the RFP asked about the vendor's expertise in dealing with the credit card, banking and financial industries and with the extensive rules and regulations that govern those industries with respect to e-payments processing. Third, the RFP asked for the extent of the vendor's experience in dealing with federal, state and local government clients. Officials within DTI felt that the vendor's experience with government clients would be helpful in addressing citizens' sometimes negative view of transacting business with the state, because those transactions, such as the payment of taxes and speeding tickets, are required by law.

After receiving responses to its RFP, DTI talked with the responding vendors' government clients in order to ensure that their experiences had been positive. For the vendor that DTI ultimately selected, its former government clients, including federal agencies and large counties, had universally good comments regarding the vendor's past performance. For consistency's sake, DTI wanted to ensure that the selected vendor would use the same team of representatives for the entirety of the project, including for the RFP, design and implementation phases.

Finally, DTI examined the RFPs to make sure that the e-payments system would be modular enough to be usable by and deployable to agencies even if another vendor works on the system in the future.

In order to select a vendor, DTI created an Evaluation Team comprised of the relevant agency stakeholders. The Evaluation Team's involvement in the vendor selection process is detailed in the next section of the case study entitled "Governance/Oversight of Funding Model."

The vendor that DTI and the Evaluation Team selected had extensive experience both with government clients as well as with managing relationships within the credit card, financial and banking industries. The vendor's expertise in security precautions also has benefited Delaware. Typically, e-payments processing systems are more expensive than in-person transactions, because of the increased risk of fraud associated with transactions that occur when the card holder is not in the presence of the party with whom he or she is conducting the transaction. To reduce the cost charged to the state by the merchant bank for conducting e-payment transactions, the vendor assisted Delaware in implementing good security measures that then provided the state with bargaining power to reduce the cost of the transactions for all agencies using the e-payments platform.

Governance/Oversight of Funding Model
DTI assembled an Evaluation Team during the selection process to ensure that all of the relevant agency stakeholders that would use the system had a say in the selection of the vendor. Participants on the Team included representatives from multiple agencies, who had a broad range of experience. Some participants had technical expertise, while others had banking or financial sector expertise or programmatic experience.

After receiving approximately thirty responses to its RFP, DTI chose six vendors to meet with the Evaluation Team. The Team questioned the vendors not only on their technical expertise, but also on their expertise regarding the banking and financial sectors and on performing work for government clients. Importantly, each of the Team's participants had veto power over the selection of a vendor to ensure that each participant would ultimately be satisfied with the vendor and its e-payments system. Ultimately, the Evaluation Team selected a vendor for the project.

Legislative and Regulatory Changes
No legislative or regulatory changes were necessary in order to outsource Delaware's e-payments project.

Business Case for Possible Implementation of the Funding Model
In making an initial decision to outsource the e-payments system, DTI drafted an internal proposal detailing the requirements and costs associated with building the system in-house. Through this process, DTI officials discovered the existence of an array of complex regulations governing the processing of e-payments. DTI also discovered that the processing of e-payments involves a large network of entities from the banking, financial and credit card industries. Because DTI would have had to acquire knowledge of the regulations associated with e-payments as well as knowledge of how to manage relationships within the credit card, financial and banking industries, DTI decided that it would be more efficient to outsource the e-payments system to a vendor who had experience in those areas.

Based upon its outsourcing experience, DTI identified a fundamental question that a state must ask itself in deciding whether or not to outsource: ***Should the state invest limited financial and human resources into building expertise in a given area, such as e-payments processing?*** A related question DTI identified focused upon whether the given function is one that is a unique function to government. For example, e-payments processing is not a function that is unique to government in that both public and private sector entities utilize e-payments processing systems. However, for a function that is unique to government, a state may want to consider building the necessary expertise in-house.

A second key factor that DTI identified as important to outsourcing decisions is whether there exists a sufficient number of vendors from which to choose. If there are six to even twenty or thirty vendors within a market, then the competition created among them is likely to drive down the vendors' fees and increase the level of their expertise. Regarding its e-payments system, DTI found that, with over 30 RFP responses, the marketplace provided a more than sufficient group of vendors from which to choose for that particular solution.

Major Hurdles and Benefits of Certificates of Participation

Major Hurdles

A major hurdle that DTI faced was garnering the buy-in of agencies that were seeking to build their own e-payments systems. To move beyond this hurdle, DTI made a compelling argument to the agencies that it would cover the up-front cost of creating the system and would only charge agencies for their utilization of the system. Ultimately, DTI successfully made its argument and secured the buy-in of the agencies, which then participated on the Evaluation Team.

A second potential hurdle that DTI identified was the size of the pool of vendors providing e-payments systems. Although the pool of vendors turned out to be relatively large in size for e-payments systems, other applications and systems may not have a large pool of vendors. In such cases, states may want to more closely examine whether they should outsource in light of a limited pool of vendors.

Benefits of Funding Model

Benefits internal to Delaware include:

- Avoidance of spending state resources to create multiple e-payments systems
- Creation of another avenue through which the state can enforce its architecture and guide the statewide strategic direction of IT
- Increased state bargaining power in that it could better negotiate with the merchant bank as a united entity to lower e-payments transaction fees

Benefits external to Delaware include:

- Providing citizens with the option of payment for certain online government services via a credit card, which is consistent with their expectation to pay by credit card for private sector transactions
- Providing a consistent interface for online payments processing for citizens and ensuring consistency in how transactions are processed across different online services
- Enhancing the extent to which citizens can do business with the government twenty-four hours a day, seven days a week.

Keys to Transferability of the Funding Model to Other States

- Having a solid business case to support a decision to outsource
- Obtaining sufficient funds to pay the vendor and recognizing the differences between up-front and ongoing costs
- A situation in which a substantial amount of limited state financial and human resources would have to be expended in order to acquire the requisite expertise in order to implement the project (particularly if the project does not involve functions that are unique to state government)
- Having a sufficient pool of vendors from which to choose
- Ability to identify a vendor that appears to have an understanding of any project requirements that are specific to state government
- Securing the user agencies' buy-in regarding the decision to outsource and the selection of the vendor.

For additional information, please visit:
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Case Study 8: Arizona's Benefits Funding Model

Background

For many years, the Arizona Department of Revenue (ADOR) has submitted capital budget requests through the state budget process to replace its aging and inefficient tax systems for four major tax types: corporate income, individual income, transaction privilege (sales) and withholding. The legacy tax systems were nearly two decades old and technically obsolete. Due to other policy priorities and a deteriorating fiscal environment within Arizona state government, the existing budget process did not result in IT project funding sufficient to address agency tax systems replacement. Eventually, the Arizona Legislature appropriated $500,000 to ADOR for professional consulting services to develop a tax systems replacement project plan. In December 1999, ADOR retained the professional services of a renowned IT consulting firm to assist the agency in (1) the development of the project plan and (2) the drafting of a Request for Proposal. This planning initiative, which lasted 15 months, was formally titled Business Reengineering/Integrated Tax System - Phase I, commonly referred to as "BRITS."

One of the first items of discussion with the technology consultants was the concept of alternative sources of funding for BRITS. It was very clear that the traditional approach of requesting a legislatively appropriated fund source for the technology project was simply not an option. The consultants used their institutional research capacity to conduct policy research on other states' IT project funding models. A review of the literature indicated that revenue agencies in the states of California and Virginia had experienced success with public-private partnerships and benefits-sharing concepts. This appeared to be the most logical funding option for ADOR. However, at that time there was no legal authority within Arizona state government that the agency could use as a vehicle to enter into this kind of an agreement.

Concurrently, private sector interests, including lobbyists for technology vendors, were aware of the problems that state agencies were experiencing in seeking capital funding for major technology projects. Consequently, Senate Bill 1406 was introduced into the State of Arizona Forty-fourth Legislature, Second Regular Session and signed into law by the Arizona Governor on April 19, 2000. This bill amended Arizona Revised Statues by adding section 41-2559 relating to public-private partnership contracts. Specifically, subsection A. states, "The funding for services under a public-private partnership contract entered into pursuant to this section shall be contingent on and computed according to established performance standards and shall be attributable to the successful implementation of the technology program…" Moreover, subsection C. of this same bill exempted automated system projects from the legislative appropriations process. In conclusion, the passage of this bill provided ADOR with the funding vehicle that it needed to reform its tax systems.

Major Hurdles and Benefits of Performance Contracting

Major Hurdles

ADOR faced institutional barriers in implementing the project. Initially, some state officials had concerns about the project funding mechanism (benefits-sharing). Generally, these officials lacked awareness and understanding of this new legislation. Several key functions within Arizona state government, including legal, procurement and budget, had to be educated about

the existence of this new procurement mechanism. Consequently, ADOR arranged for countless meetings with state officials and middle-level managers and technicians. Many formal and informal presentations were made by ADOR officials and consultants to stakeholders to explain the differences between a traditional fixed-fee bid and a public-private partnership.

A lengthy discovery period was required to allow potential vendors open access to agency operations in order to develop their business case, to include assessing overall project risk and the potential for return on capital investment. Also, the procurement code does normally not allow for negotiations between the parties (state and vendor), a key to completing a complex, multi-year business partner relationship. Eventually, the state bureaucracy began to understand this changed paradigm.

Going forward, ADOR adopted the position that the entire project planning phase would be conducted in a "transparent" fashion. This meant that all facets of the project planning phase, including project progress notes and meeting minutes, were openly communicated in broadcast fashion on a monthly basis to major stakeholders and other responsible parties.

It should also be noted that the project was outside of the budget process insofar as requiring a legislative appropriation. This is a small but important distinction because it makes the project more attractive to a potential vendor as there is less risk of derailing the project during the annual budget process.

However, the most important technical issue was negotiation of the baseline with the vendor. Simply stated, the "baseline" is (1) the mathematical calculation and (2) the cutover date whereby the agency and the selected vendor "draw the line in the sand." After a specified date, the statutorily required agreed upon performance standards—defined as increased revenue in ADOR's case—are attributed to the project. The calculation should be as simple as possible to avoid conflict between the parties and to facilitate recurring payments to the vendor over the life of the contract.

Also, the benefits split formula is a critical negotiating point. In ADOR's case, the increased revenue was shared in an 85%-15% ratio, with 85% going to the vendor. Further, it is important that the interests of the state be protected by capping the amount the vendor may receive. Additionally, all capital assets acquired during the life of the project should revert to the state at project conclusion. Conversely, the vendor needs to be "held harmless" from changing political or economic circumstances beyond its control. The vendor should have a reasonable expectation of recovering its investment and making a normal profit. Moreover, in the event of an unforeseen situation, both parties should have the right to reopen the benefits split formula.

Finally, BRITS Phase II—the deployment phase—commenced in August 2002 with an award to a world class technology consulting firm. In order to complete the immense scope of work, the Phase II project budget is approximately $125 million and the project timeline is four years in duration.

Benefits

- The vendor "front funds" the project using their working capital
- New sources of revenue are developed by capturing tax dollars that "leaked" through the obsolete technology

- The state's project risk is shifted. Risk is now shared by the business partners.
- There is a built in incentive for the vendor to perform. If the project does not perform as planned, the vendor does not receive progress payments.
- Existing technology used on comparable projects in other public jurisdictions can be "transferred in," thus lowering total system development costs
- The vendor has the option to use channels of distribution to source IT equipment that may be unavailable to the public sector, thereby lowering the cost of the project
- The vendor has access to system development methodologies and technology skill sets unavailable to the state government, thus ensuring quality deliverables.

Keys to Transferability of the Funding Model to Other States

- Strong sponsorship of the project and funding model by the state governor and agency director
- Clear, unambiguous legislative and executive authority to enter into public-private partnerships
- Strong legislative support by legislative leaders and key legislative staff
- Some knowledge of funding model mechanics by the governor's staff, the state's executive and legislative budget officers, chief state procurement official, and state procurement legal counsel
- Technology project under consideration must be core and/or mission critical to the operation of state government
- Independent assistance from technology vendor representatives in educating legislators and other stakeholders on the financial benefits to the state and improvements in service delivery from public-private partnerships
- Multi-agency participation in the vendor evaluation process
- A comprehensive communications plan to maintain open and continuous communications with state officials, consultants, vendors and stakeholders.

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Case Study 9: Hawaii's Budgeting Strategies Funding Model

The State of Hawaii's Information and Communications Services Division (ICSD) has implemented several budgeting strategies to promote cost avoidance and optimal return on its IT budget dollars, since additional funds for IT projects have been difficult to obtain. The case study below details ICSD's budgetary strategies that include building-up in-house expertise through training and mentoring permanent state IT staff members and hiring several employees who are exempt from the civil service salary structure.

Background on State IT Funding Needs

Approximately three years ago, the Governor of Hawaii's staff conducted an informal survey of IT contracts issued by various state departments. The survey results indicated that nearly 100% of all IT application development efforts were outsourced rather than handled in-house. The cost of outsourcing the application development projects at expensive consultant rates led the Governor's staff and ICSD to the conclusion that they should bring some of the application development work in-house. ICSD then adopted a mentoring program and provided training to build expertise in application development among its existing IT staff members.

Within approximately the same timeframe, ICSD also assisted in a related effort to mitigate problems encountered in a number of outsourced state IT application development projects, including disagreements over deliverables, repeated extensions of deadlines and budget overruns. ICSD determined that the following factors had contributed to these problems:

- A high turnover rate of key people on the consultant's project team
- A lack of project management skills among state project teams and occasionally consultant project teams
- Insufficient state staff resources to meet consultants' demands for dedicated state project teams.

While the problems associated with the state's outsourced application development projects were not directly related to ICSD's budget strategies, the identification of those problems strengthened ICSD's resolve to find ways to mitigate them. Additional requirements that were identified through this process included upgrading project management knowledge and skills and breaking down projects into manageable increments. This case study details some of the many challenges ICSD faced in its effort to optimize its investment in IT projects.

Implementation of the Budgeting Strategies Funding Model to Address State IT Needs

Description of Funding Model

At the inception of its plan to build application development expertise in-house, the ICSD leadership determined that its support staff was focused almost entirely on the maintenance of existing application systems. Given that fact, ICSD realized that the transition would be a gradual process and that much preparation would be required, including training for staff, standardization and acquisition of application development toolkits, and mentoring of application

development methodologies and processes. In spite of a tight budget, ICSD allocated funding to provide staff with training on some of its application development tools.

ICSD also adopted a policy to include a mentoring requirement in all application development contracts it issued. The mentoring requirement involved the creation of a project team comprised of a contractor's project consultants and selected ICSD staff members for the joint development of an application. The contractor then would mentor the ICSD staff members in the technologies and methods used to develop the application as the project progressed.

Within the same timeframe, ICSD established an "e-Gov Team" to push forward state e-government initiatives. The e-Gov Team is currently comprised of two employees who are exempt from the civil service salary structure. Both employees formerly had worked with leading edge and emerging technologies in the private sector. By offering salaries for the two exempt employees that were above civil service salaries but far below consultant rates, ICSD hired and retained individuals with the knowledge, skills and experience needed to push ICSD's e-government initiatives forward. ICSD funded their positions through budgets for temporary e-government-type positions and the deferral of other related expenses.

While ICSD did not conduct any formal studies on cost comparisons between consultant rates and exempt employee salaries, ICSD was aware of the market to compete for quality IT employees and the cost of consultant rates. ICSD hired the e-Gov Team at $70,000 to $75,000 per year as exempt employees. In contrast, for civil service employees, the best ICSD could have offered would have been approximately $40,000 to $45,000 per year, with $50,000 per year as an upward possibility.

The two exempt employees that ICSD hired had quality expertise and were team players with skills in creating solutions, researching new technologies, and assessing their applicability to state operations. As accomplished application developers, the exempt employees, along with the project consultant's team members, have served as mentors to the permanent ICSD staff.

To ensure that the e-Gov Team and permanent staff worked well together, the ICSD leadership emphasized the e-Gov Team's role as state employees, not contractors, and encouraged the permanent staff's perception of the e-Gov Team as co-workers.

ICSD initially selected permanent staff members on a necessity-driven basis to work with the e-Gov Team. Since the first project of the e-Gov Team was to develop and implement a portal for the state intranet, ICSD primarily assigned its web support staff members to work with the e-Gov Team. As a result, those permanent staff members became knowledgeable in the management of domain names, the design and development of enterprise websites, live webcasting, audio broadcasting, video and audio archiving, and other related technologies. The e-Gov Team members either had expertise in those areas or were very effective at researching them. This helped to foster the mentoring aspect of ICSD's budgeting strategies.

During the course of its work, the e-Gov Team researched and introduced the use of open source software for selected state projects. The use of open source software at no cost has benefited the state by enabling ICSD to develop solutions in spite of having no budget for them. Understanding the risks involved with relying on open source software to build IT solutions, ICSD has developed strict criteria for the use of open source software in order to ensure its viability as a cost-effective solution. ICSD also is building a peer support structure among state

IT staff and mutual help relationships with government agencies in other states and jurisdictions regarding the use of open source software.

The e-Gov Team has also guided ICSD's applications support group in redeveloping an old proprietary public access system that ran on an obsolete Wang VS computer system. The new system is web-enabled, standards-based, and will be made directly accessible by the public over the Internet.

Note that both Hawaii's portal and the public access system were developed with open source software. ICSD incurred no software licensing or consultant costs through opting for the use of open source software.

Governance/Oversight of Funding Model
ICSD managed the implementation of its budget-maximizing strategies.

Legislative and Regulatory Changes
No major legislative or regulatory changes were required for the implementation of this initiative.

Business Case for Implementation of the Funding Model
ICSD's goals of cost avoidance and optimal returns from budget dollars were used to justify the implementation of its budgeting strategies, because additional funding for IT projects had been difficult to obtain.

Major Hurdles and Benefits of the Budgeting Strategies Funding Model

Major Hurdles
With the creation of the e-Gov Team, the two greatest challenges ICSD faced were the possibility that the exempt employees and permanent ICSD staff would develop an "us versus them" mentality, and the need to continue to renew the exempt positions in order to retain the e-Gov Team. To address the first challenge, the ICSD leadership worked to foster a cooperative environment in which the exempt employees and permanent staff members could participate on projects side-by-side as co-workers. To address the second challenge, the ICSD leadership has had to ensure that the state administration is kept informed of the e-Gov Team's contributions and the value they have brought to the state.

Benefits
Benefits that ICSD identified from building in-house expertise in application development through providing training for permanent staff and allowing consultants to mentor permanent ICSD staff included:

- Reduced costs since state staff members could perform some of the project tasks
- Continuous knowledge transfer to permanent staff members who worked on a project from its beginning
- Easier and more effective transition from the application development phase to the application maintenance phase.

Benefits from the hiring of two employees who are exempt from civil service salaries included:

- Hiring and retaining individuals with expertise in leading edge and emerging technologies to work on state e-government projects

- Fostering a continuous knowledge transfer to ICSD staff members from the exempt employees.

Keys to Transferability of the Funding Model to Other States

- Ability to provide training for permanent state IT staff in order to build up expertise in certain areas, such as application development
- Enabling project contractors and permanent IT staff to work together on IT projects to reduce consultant costs and develop in-house expertise
- Ability to fund one or two positions that are exempt from the civil service salary structure in order to obtain the in-house expertise needed to pursue important state IT projects
- Fostering a team-player attitude between the exempt and permanent, civil service employees in order to successfully complete state IT projects and build expertise among the permanent state IT employees.

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Section IV: Conclusion

Based upon NASCIO's survey of the states, an over-arching trend in funding state IT is apparent: ***Successful innovative funding models enable states to deliver savings, improve services to citizens, and, in some cases, generate new revenue streams.***

The need for sources of funding in addition to state general funds has arisen out of a need to fund large, multi-year projects that span multiple state agencies in tight economic times. However, to create and maintain the benefits that technology can bring to the states and their citizens, state CIOs will need to continue to pursue innovative funding approaches even in better economic times.

The importance of technology to the continuing need to secure the homeland and maintain this country's critical infrastructure has been emphasized in recent years by the events of September 11, 2001 and the August 2003 power outage in the Northeast United States. Hence, because these needs will continue well into the future, CIOs will need to pursue funding innovations to provide the technology that is necessary to protect the country and its citizens.

Elements that are key to pursuing state IT funding innovations include:

- Fostering a high degree of trust among stakeholders
- Building better business cases that support IT projects and the innovative funding approaches that make them possible
- Developing good state IT governance and project management practices
- Adhering to project performance measures
- Streamlining the state budget process to allow for increased flexibility for funding cross-agency projects
- Improving state accounting systems to provide a clear picture of the savings that state IT can create
- Streamlining the budget appropriations process
- Encouraging increased flexibility in the use of federal funds to avoid the construction of IT systems that are not interoperable
- Educating state and federal government leaders about the importance of funding innovations to state technology efforts.

Through this publication, NASCIO hopes to provide the state CIOs with a starting point for modernizing the way in which state technology efforts are funded. Such innovations in funding can serve as a catalyst for innovations in technology that will streamline state government and provide citizens with more convenient ways of doing business with state government.

Appendix 1: Checklist for Innovative Funding Models

The following provides a checklist for each innovative funding model identified in this publication. The checklists are intended to provide a starting point for states in beginning to consider which model or models to implement.

Bonds

- ☐ **Securing of legislative approval for the bond issuance**
  - ☐ What type of lobbying efforts will be required?
  - ☐ What is the likelihood of successful lobbying efforts?

- ☐ **Addressing details regarding the bond issuance**
  - ☐ What type of bonds will be issued (general obligation bonds, for example)?
  - ☐ Who will participate in the drafting of proposed legislation authorizing the bond issuance?
  - ☐ Will funds be earmarked for specific projects?
  - ☐ Will the legislation provide for flexibility in the disbursement of funds?
  - ☐ Will any unspent residual funds revert at year's end to the state general fund or can those funds be disbursed for other technology projects?

- ☐ **Addressing governance and oversight issues**
  - ☐ Which government agency will monitor the funded projects?
  - ☐ Will the monitoring/oversight agency report to the legislature or other authority on the status of the funded projects and, if so, how often?

- ☐ **Selecting projects for funding**
  - ☐ Are any of the funds earmarked for specific projects?
  - ☐ What will the selection criteria be for funded projects?
  - ☐ Will agencies seeking funding submit a proposal and/or cost benefit analysis?
  - ☐ Who participates in the project selection process?

Public-Private Partnerships

- ☐ **Selecting a vendor**
  - ☐ Who will participate in the selection of the vendor?
  - ☐ What kind of process will be used to obtain a vendor? An RFP process?
  - ☐ What are the state's system or project requirements?
  - ☐ What will the selection criteria be?

- ☐ **Contracting with a vendor**
  - ☐ Will the vendor handle all or a substantial portion of the costs up-front?
  - ☐ Will the state contribute any initial project funding? If so, must those funds be appropriated by the legislature or contributed from another funding source?
  - ☐ How will the vendor recoup its initial investment? Through the creation of a new revenue stream?

- If a new revenue stream will be created, then:
  - How will profits be allocated between the vendor and the state?
  - Will the vendor initially receive a larger portion of the profits?
  - Will the state share in the profits initially, and, if so, how much will the state's share be?
  - Will the state's share of profits increase once the vendor has reached its break-even point? If so, how will the break-even point be calculated? Will the state have the authority to direct the vendor to take on or forgo a project, if that will negatively impact when the vendor will reach its break-even point?
- Who will have ownership rights regarding any intellectual property created during the project?
- What type of access rights will the state have to the vendor's financial and other records relating to the project? Will there be a periodic audit of the vendor's financial records?

- **Providing oversight of the vendor**
  - What governmental entity will provide oversight of the vendor's performance?
  - Will a separate governmental entity be created for this purpose? If so, will legislation need to be enacted to create the separate entity?
  - Once a governmental entity has been tasked with oversight, then who will participate in the oversight of the vendor?
  - What will the oversight entity's duties be?
  - Will individuals involved in the oversight of the vendor need training and, if so, will training be provided?
  - Will the oversight entity report to another government entity, such as the legislature, regarding the vendor's performance? If so, to whom and how often?

- **Determining whether new fees will be charged**
  - If a new revenue stream will be created, will it be created by new fees charged to citizens or other users? If so, then will legislation be necessary?
  - Will state agencies have to charge citizens or other constituents fees? If so, will the agencies have to make changes in their regulations?

Performance-Based Contracting

- **Selecting performance measures**
  - What types of tasks will the vendor be performing?
  - What types of measures or benchmarks will be used for each task of the vendor?
  - Are there any tasks for which a measure or benchmark is not necessary or not feasible?
  - Are the timeframes for the vendor's attainment of the benchmarks or measures feasible?

- **Monitoring the vendor's performance**
  - Which state agency or official will have responsibility for monitoring a vendor's performance?

- ☐ How often will a vendor's performance be reviewed?
- ☐ Will there be incentives or rewards for the vendor to exceed the agreed-upon performance measures? If so, will the incentives be monetary or in-kind?
- ☐ Will there be penalties for the vendor if it does not meet the performance measures? If so, what will those penalties be? Will the penalties be reduced if the state finds that there were factors at work beyond the vendor's control that caused it to fail to meet the measures or where the vendor has exceeded other performance measures?

Sharing Services

- ☐ **Bringing stakeholders together to identify potential areas of collaboration**
  - ☐ Is there sufficient buy-in from state leaders to encourage state agencies to collaborate on technology projects?
  - ☐ Who will be the leader in initially bringing stakeholders together to identify potential areas of collaboration? The state CIO?
  - ☐ How will stakeholders be brought together to identify potential areas of collaboration? Through a summit or conference?
  - ☐ Which stakeholders should be brought together? Agency policymakers? Agency technology personnel?
  - ☐ How will agencies identify their current and proposed technology projects? Through the submission of proposals to give a presentation to other stakeholders on projects that hold potential for collaborative efforts? If so, how many presentations will be given and how will those presentations be selected?
  - ☐ Will agencies be surveyed or polled during or after the summit or other type of conference to further identify areas of potential collaboration?

- ☐ **Leveraging areas of potential collaboration**
  - ☐ Once areas of potential collaboration have been identified, how will the interested agencies be brought together? Through an "excellence team" structure like Minnesota's?
  - ☐ If so, what will the criteria be for deciding when to form an "excellence team"?
  - ☐ Will a formal business case be required in order to justify the creation of an "excellence team"?
  - ☐ What governmental agency or entity will coordinate among the "excellence teams" or other groups of agencies with the potential for collaboration?
  - ☐ Will agency participation be mandatory or discretionary?
  - ☐ Will legislation be necessary to encourage participation? If so, what is the likelihood that such legislation will be enacted?
  - ☐ Is there a way for the rates billed to agencies by the state IT authority to be adjusted to reflect cost-sharing among collaborating agencies?

- ☐ **Providing oversight of coordination efforts**
  - ☐ Will the governmental entity overseeing the coordination efforts report to another governmental body, such as the legislature or state IT policy council?
  - ☐ If so, how often will reporting be required?

- **Administering savings created by increased inter-agency collaboration**
  - How will savings created through increased inter-agency collaboration be identified?
  - Who will benefit from the savings created?
  - Will the state technology agency be able to "recapture" any such savings?
  - If so, will the state technology agency have the ability to reallocate those savings to other state technology projects?

Investment Funds

- **Garnering initial monies for the creation of an investment fund**
  - How will the investment fund initially be infused with seed money?
    - By legislative appropriations? If so, will this be a one-time appropriation or yearly appropriations?
    - By the state IT department's service fees charged to other agencies?
    - By the cost savings or other efficiencies within the state government?
    - By other sources, such as pay phone commissions?

- **Establishing a fund administration structure**
  - Which governmental agency will oversee the investment fund? The state CIO?
  - Will the governmental agency report to another governmental entity on the status of the investment fund? If so, to whom (the state legislature or state IT policy council?) and how often?
  - Will investment fund monies be distributed to agencies as loans or grants or a combination of the two? Will any agency funds be used to fund the state IT agency's purchase of technology that can be leased to other agencies?
  - Will end-of-the-fiscal-year balances revert back to the state general fund or remain in the investment fund?

- **Establishing an oversight structure for projects supported by the investment fund**
  - Which governmental entity will decide which agencies receive monies from the investment fund? The state CIO? The state legislature? A state technology board or council?
  - What type of funding application will be required?
  - Will there be a tiered evaluation process (for example, will the state CIO make recommendations on projects to be funded to the state legislature)?
  - Will funding be available on a year-round basis or only once per year or quarter?
  - Will funding be given for multiple years? If so, will agencies need to reapply each year for funding?
  - What types of projects will be supported by the investment fund? Innovative projects? Projects with the potential for a significant return on investment?
  - Will there be a maximum or minimum amount of money given to agencies from the fund?
  - Will monitoring be performed periodically to ensure funded projects remain on track?
  - Who will have the ability to halt a funded project that is failing in its stated purpose? The state CIO?

Leasing

- **Funding the purchase of IT equipment to be leased**
  - Will the purchase of the IT equipment be funded through an investment fund?
  - Will it be funded through the existing budget of the state IT department?
  - Will it be funded through an appropriation from the state general fund?

- **Managing the leasing program**
  - What is the purpose of the leasing program? To lease equipment to small state agencies that cannot afford to pay for such equipment in one up-front payment?
  - Which state agency will manage the IT leasing program? The state IT department?
  - What rate of interest will the managing agency charge for the lease of the equipment? Will the interest rate cover expenses incurred by the managing agency in administering the leasing program?
  - How long will the period for repayment be?
  - After making payments in the amount of the cost of the equipment plus interest, will title be transferred to the agency leasing the equipment?

- **Deciding to whom to lease the IT equipment**
  - Will agencies formally apply for the opportunity to lease IT equipment? If so,
    - To whom will they submit their applications?
    - What information will they submit on their applications? Existing business need for the IT equipment? Demonstrated inability to pay for such equipment up-front? How they will plan to fund periodic lease payments?
  - Who will approve or disapprove the agency applications?

- **Managing lease repayment**
  - Is there an oversight structure in place to monitor that the payments on the leases are being made in-full and in a timely fashion?
  - Is there a plan for assisting agencies should they have problems making payments on a lease?

Certificates of Participation

- **Securing legislative approval for the issuance of certificates of participation**
  - Will legislative approval be necessary for issuance of certificates of participation?
  - If so, what type of lobbying efforts will be required? What is the likelihood of successful lobbying efforts?

- **Selecting a vendor to provide a technology solution to the state**
  - Who will be involved in the process of selecting the vendor?
  - What will the terms of the state's lease agreement with the vendor be? Will the state's lease payments on the new IT system be applied to the purchase price of the system?

- **Securing the necessary stakeholders**
  - Who will be the trustee who will allocate the state's lease payments to the investors and other stakeholders?
  - Will the trustee secure an underwriter to obtain investors and issue certificates of participation or will the trustee perform those duties?
  - Which insurance company will the state hire to provide protection to investors? What will the terms of that insurance agreement be? Will the insurance agreement protect investors in situations of abatement for non-use or non-appropriation of funds? What funds will be used to pay the insurance company?

- **Overseeing the state's lease payments**
  - Which governmental entity will be responsible for seeing that funds are available to pay back investors when the certificates of participation come due?
  - Will those funds come from a new revenue stream or savings created by the new system? If so, will the funds be directly paid to the trustee or will the state make payments from the state general fund and then reimburse the state general fund from the revenue generated by the new IT system?

Purchasing & Procurement Strategies

- **Evaluating state environmental factors regarding purchasing and procurement strategies**
  - Do the state's legislative and regulatory environments have restrictions that might bar certain types of IT procurement strategies?
  - Does the state IT department have authority regarding IT procurement?
  - Will the relationship between the state IT and purchasing departments be a positive factor in facilitating IT procurement strategies?

- **Evaluating the state's IT procurement needs**
  - What are the problems that have been identified regarding the purchasing of IT products and services for the state?
  - Is it difficult for agencies to identify detailed deliverables for IT RFPs?
  - Do vendor bids reflect a risk cushion that could be reduced by infusing IT RFPs with more concrete deliverables?
  - Are project changes difficult for agencies to address because of the terms and conditions of state IT contracts?
  - Do state agencies tend to purchase IT products and services independently of each other, thereby foregoing the possibility of volume discounts?
  - Are there other problems with the state IT procurement process that lead to higher prices, inadequate vendor performance or contentious state-vendor relationships?

- **Considering IT procurement strategies**
  - Is there an IT procurement reform that would address the state's concerns?
  - Do either of the following provide viable options?
    - Implementing a bid-within-a-bid process to bid out portions of a larger IT procurement?

- Would that solution lead to greater certainty regarding deliverables for the state and its contractors?
- Would it lower the amount of vendors' "risk cushions" that they include when submitting a bid on an RFP?
- Would it help in reducing friction between the state and vendor?

- Aggregating state agencies' purchases of IT products and services?
  - Would that solution help to garner the state more volume discounts and reduce overall IT procurement costs?

- Are there legal, technological or state environmental barriers that may deter efforts to address identified state IT procurement concerns by selecting a particular IT procurement strategy?

- **Implementing a state IT solution**
  - Who will oversee the implementation of the IT procurement strategy? The state procurement department? The state IT department? Both?
  - Does the state have a good project management approach in place to ensure the integrity of the IT procurement process after implementation of the procurement strategy?
  - Does the state have a way of informing and educating state agencies about the IT procurement strategy's availability?
  - Can agencies utilizing the IT procurement strategy retain any resulting savings to devote to other IT-related projects?

Outsourcing & Managed Services

- **Making the decision to outsource**
  - Who will make the decision whether to outsource? The state IT department?
  - Will the department responsible for making the outsourcing decision prepare a business case to analyze the benefits and the costs of outsourcing vs. doing the project in-house? If so, as part of the business case, will the following questions be examined?
    - Should the state invest limited financial and human resources into building expertise in a given area, such as e-payments processing?
    - Is the function under consideration for outsourcing one that is unique to state government? If so, would that provide a reason not to outsource the function?
    - Is the project one that can be deployed to multiple agencies that could fund part or all of start-up or ongoing costs?
    - Is the pool of potential vendors large enough to provide a reasonable selection of vendors?

- **In the event that the project will be outsourced, paying for the costs of outsourcing**
  - Who will cover the initial project start-up costs? The state IT department? Stakeholder agencies?
  - Who will cover the ongoing costs? Agencies utilizing the system? Will the fees charged to agencies using the system include an extra amount to recover the initial start-up costs?

- **Drafting the Request for Proposal**
  - Who will draft the RFP for a vendor? The state IT department?
  - What types of information will the RFP solicit from vendors?
    - Will the RFP ask about the vendor's technical expertise?
    - Will it ask about any specialized knowledge that may be necessary to complete the project, such as knowledge of the financial services sector for an e-payments system?
    - Will it ask about the vendor's previous experience with government clients?
  - Will the vendors' former clients be contacted about their performance?

- **Managing the vendor selection process**
  - Who will manage the vendor selection process? The state IT department?
  - Who will be included in the vendor selection process? Are there agency stakeholders that should be included?
  - If so, will the agency and other stakeholders' participation be formalized by their participation in a team that will evaluate the vendors' RFP responses? If so, then:
    - Will the team evaluate some or all of the RFP responses?
    - Will the team meet with and question some or all of the vendors?
    - Will each member of the team have veto power over the selection of a vendor?

- **Managing the vendor's performance**
  - Who will manage the vendor's performance? The state agency that managed the RFP process?
  - Is there a project management plan or program in place to assist in ensuring that the project will be completed within budget and on-time?

Benefits Funding

- **Addressing state IT environmental factors**
  - Is there support within the state government for benefits funding? Within the legislature? Within the executive branch?
  - Are there state procurement or other laws that need to be modified to allow a project to be funded using the benefits funding model?
  - Will lobbying efforts be necessary?
  - Will it be necessary to educate the necessary stakeholders on the use of benefits funding?

- **Identifying a private sector partner for benefits funding**
  - Which state agency will manage the vendor selection process?
  - What type of access will potential vendors have to the agency's operations in order to formulate a proposal?
  - Which agency or other stakeholders will select the vendor?

- **Managing the relationship with the vendor**
  - Will the managing state agency and vendor agree on performance measures?
  - If so, what will the effective date of the performance measures be?

- ☐ Will the state and the vendor split profits resulting from the project? If so, what will the percentage split be and will it change once the vendor recovers its expenses and recovers its anticipated profit? Will there be a cap on the total amount the vendor will be able to receive?
- ☐ Will the capital assets acquired during the project revert to the state at the end of the project?
- ☐ Will the vendor be held harmless from political or economic changes that are beyond its control?
- ☐ Will the state and the vendor be able to renegotiate the percentage of the profits they split if unforeseen circumstances occur?
- ☐ Will the managing state agency keep other stakeholders informed of the project's progress? If so, will it be through periodic updates or reports?

Budgeting & Appropriation Strategies

- ☐ **Retaining unspent or uncommitted year-end funds**
  - ☐ Are there funds that are unspent in the state IT department each year?
  - ☐ Are those fund balances currently required by law to revert to the state general fund?
  - ☐ Are there uncommitted year-end funds available?
  - ☐ Do there need to be legislative or other changes to allow the state IT department to retain any unspent or uncommitted funds?
  - ☐ If so, is there legislative and other stakeholder support for retaining those fund balances within the state IT department? Will lobbying efforts be required? What is the likelihood of success?
  - ☐ Should those funds be retained only for one year's budget cycle or for subsequent years?
  - ☐ Will there be restrictions on the use of such retained funds?

- ☐ **Reallocating savings realized from other technology projects**
  - ☐ What is the current method of allocating savings from technology projects? Are the savings retained by the state agency implementing the project or do the savings revert back to the state general fund?
  - ☐ How are savings measured on technology projects? Is the method of calculation simple, clear and accurate?
  - ☐ Are legislative or regulatory changes necessary to retain savings on technology projects? If so, will lobbying or other such efforts be necessary? What is the likelihood that those efforts will be successful?
  - ☐ If savings can be retained for other technology projects, are there any restrictions on how those savings can be reallocated?
  - ☐ Are there any reporting requirements on the progress of projects using reallocated savings from other projects?

- **Building-up the expertise of in-house IT staff**
  - Are a disproportionately large number of state IT projects outsourced as opposed to completed in-house? If so, could state IT employees be trained to complete all or part of certain types of projects (for example, application development)?
  - Are there any funds available for staff training?
  - Could state IT staff members participate on projects that are outsourced in order for them to learn from the project consultants?

- **Acquiring more highly skilled IT employees**
  - Is there a lack of the necessary skills for completing certain types of projects in-house (such as application development)? If so, is a lack of the ability to pay closer to the market rate for IT employees a contributing factor to this problem?
  - Is there an ability to create one or two IT positions that are exempt from the state's civil service salary structure? Could the salaries for these positions be higher than the salaries for similar civil service positions while still being less than the rate a consultant would charge the state?
  - How could such exempt positions be funded? Through funds budgeted for similar temporary positions? From the deferral of other related expenses?
  - Is there a way to encourage permanent state IT staff to perceive the exempt employees as co-workers? Would the exempt employees be willing to work as a team with the permanent state IT staff?
  - Would the working environment be conducive to a continuous knowledge transfer from the exempt employees to the permanent state IT staff?

Appendix 2: Information Technology Funding Models by State

Note: The survey results below do not include additional states that NASCIO identified through compiling funding model case studies.

State	Leasing & Financing	Bonds	Certificates of Participation	Performance Based Contracting	Outsourcing/ Managed Services	Investment Funds *	Benefits Funding	Budgeting/ Appropriation Strategies **	Purchasing & Procurement Strategies	Other Strategies (Please Explain)
AL					X					
AK	X				X					Federal grants
AR	X				X		X	X	X	
CT	X	X						X		Inmate payphone revenues
DC								X		
GA		X						X	X	
HI	X			X	X			X	X	
ID										Increased tobacco and sales tax
IA	X			X	X			X	X	
KS								X	X	
KY	X				X			X	X	
MA		X								
MI										Total charge back for services
MN	X	X		X			X	X	X	Risk & Rewards Funding
NV	X	X			X					
NJ								X		
NC								X		
OH	X		X	X	X		X	X	X	
PA								X	X	
SC	X				X	X		X	X	
SD	X			X	X	X		X	X	
TN	X	X			X	X	X		X	
TX	X			X	X			X	X	Texas Online
UT	X			X	X	X		X		
VA	X	X			X				X	
WY					X			X	X	
Total	15	7	1	7	15	4	4	18	15	

* Pilots, seed money, short payback, etc.

** Such as joint cross boundary funding.

NOTE: These are the funding models identified by The states that responded to the survey.

Appendix 3: Additional Resources

NASCIO Resources:

Strategic Materials and Resource Tool (SMART), NASCIO's new online resource library, can be accessed by NASCIO members at <www.nascio.org>.

"Business Case Basics and Beyond: A Primer on State Government IT Business Cases" NASCIO, March 2003. This NASCIO publication may be downloaded for free by NASCIO members or purchased by non-members for a fee at <http://www.nascio.org/publications/index.cfm>.

"Resource Funding Pools: An Innovative Way of Funding Digital Government" NASCIO, October 25, 2002, can be accessed by NASCIO members at <http://www.nascio.org>.

"Testimony of Aldona Valicenti, CIO, Commonwealth of Kentucky and Past President, NASCIO, to House Subcommittee on Technology and Procurement Policy, U.S. House of Representatives Hearing on State/Local Information Technology Grant Management" NASCIO, July 9, 2002, <http://www.nascio.org/pressReleases/members/apd_testimony.cfm>.

Other Resources

Catalog of Federal Domestic Assistance (CFDA), U.S. General Services Administration, October 2003 edition, <http://www.cfda.gov>.

"Strategic IT Cost Cutting" Amy Santenello, META Group, June 2003, <http://www.metagroup.com>.

"How To Guide for Funding State and Local Public Safety Wireless Networks" Public Safety Wireless Network (PSWN) Program, February 2003, <http://www.pswn.gov/libresults.cfm?libid=360&secid=3>.

"Budget Shortfalls: Strategies for Closing Spending and Revenue Gaps" National Association of State Budget Officers (NASBO), 3rd edition, December 2002, <http://www.nasbo.org/Publications/PDFs/shortfallstrategies-3rd.pdf>.

"CIOs Are in the Cabinet: The Next Step is Measuring IT Value" John Goggin, META Group, September 2002, <http://www.metagroup.com>.

"Human Services: Federal Approval and Funding Processes for States' Information Systems" Testimony before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives, July 2002, <http://www.gao.gov/new.items/d02347t.pdf>.

"To Fee or Not to Fee: Funding the Jurisdictional E-Procurement System" Amy Santenello, META Group, March 2002, <http://www.metagroup.com>.

"Trends in U.S. State and Local Governments" Rishi Sood, Gartner, Inc., March 2002, <http://www.gartner.com>.

"The Four Worlds of State and Local Government" Rishi Sood, Gartner, Inc., March 2002, <http://www.gartner.com>.

"Alternative Funding Strategies for Electronic Commerce Projects," Robert H. Smith School of Business, University of Maryland, Advisor Dr. Jonathan Palmer, May 2000, <http://estrategy.gov/documents/ec_fundingfinal.pdf>.

"Buying Smart: Blueprint for Action" National Association of State Procurement Officials (NASPO), May 1998, <http://www.naspo.org/whitepapers/buyingsmart2.cfm>.

"Cutting Fat, Adding Muscle: The Power of Information Technology in Addressing Budget Shortfalls" Deloitte Research Public Sector Study, <http://www.dc.com/Insights/research/public/cutting_fat.asp>.

Associations

National Association of State Chief Information Officers (NASCIO), <www.nascio.org>.

National Association of State Procurement Officials (NASPO), <www.naspo.org>.

National Association of State Budget Officers (NASBO), <www.nasbo.org>.

National Association of State Treasurers (NAST), <www.nast.net>.

Council of State Governments (CSG), <www.csg.org>.

National Conference of State Legislatures (NCSL), <www.ncsl.org>.

Association for Governmental Leasing and Financing (AGLF), <www.aglf.org>.

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