REPORT OF THE
JOINT LEGISLATIVE AUDIT
AND REVIEW COMMISSION

OVERVIEW: YEAR 2000 COMPLIANCE OF STATE AGENCY SYSTEMS

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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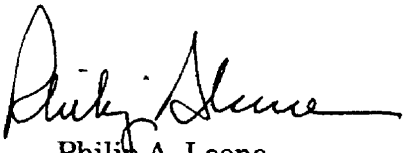
Preface

The 1997 Appropriation Act directed JLARC to complete a review of the status of year 2000 compliance of State agency computer systems. Gartner Group Consulting Services completed the review with assistance from the JLARC staff. This report is an overview of the findings and recommendations from the Gartner Group study.

The study found that addressing the year 2000 problem in State computer systems may cost as much as $83 million. Given the costs and the potential serious consequences of not adequately addressing the problem, Gartner Group recommended that the State create a year 2000 project office to refocus the efforts of State agencies.

Recognizing the critical importance of this issue, the Governor's proposed budget includes more than $47 million to fund year 2000 work in State agencies and institutions of higher education. Additional funding is provided for a year 2000 project office, which is now being created and staffed. In addition, the Council on Information Management continues to work with agencies to ensure that assessments of systems are completed and that agencies are implementing necessary replacement or repair strategies. These steps should improve the State's ability to address the year 2000 problem effectively.

On behalf of the Commission staff, I would like to express our appreciation for the cooperation and assistance provided during this review by the staff of the Council on Information Management and the agencies and institutions which participated in the year 2000 survey.



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January 16, 1998

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I. Introduction

This report on year 2000 compliance of State agency computer systems is an overview of a study completed by the Gartner Group for the Joint Legislative Audit and Review Commission. It was prepared by the Commission staff with the assistance of the Gartner Group. The full Gartner report is available on request.

Item 14F of the 1997 Appropriation Act directed the Joint Legislative Audit and Review Commission (JLARC) to complete a review of the status of year 2000 compliance of State agency computer systems. Specifically, the study was to include an assessment of the current status of compliance in State agencies and institutions of higher education, the cost of bringing all systems into compliance, and the methods to be used to fund the identified costs. The Appropriation Act directed JLARC to hire a qualified consultant to complete the review. Gartner Group Consulting Services was hired to assess the current status of computer system compliance and to estimate the potential costs of the State compliance efforts. JLARC staff completed the assessment of funding requests from the agencies.

BACKGROUND

The year 2000 problem results from storing and using date information in a computer with two digits to represent the year. For example, 1997 is represented as 97 in the computer. This technique has been used widely in federal, state, and local computer systems as well as in the private sector. Over the 30 or more years that many computer systems have been in use, this saved valuable computer storage space and a substantial amount of money. When viewed from the perspective of systems development professionals in the 1960s and 1970s, this was a reasonable approach to reduce the costs of major new systems. Systems developed with this approach have remained in use much longer than may have been anticipated, however, so now governments and businesses alike are faced with how to deal with computer programs that cannot recognize the year 2000.

The problem with a two digit representation of the year is that it can result in erroneous calculations when using the year 2000. For example, when four digits are used to represent the year, calculations which subtract 1954 from 2000 will result in the correct answer of 46. However, with two digits to represent the year, the same calculation results in an incorrect answer, -54. This of course will affect all sorts of financial calculations, government benefits determinations, and a range of business functions such as inventory control, facilities management, and process control.

The solution to this problem is to either repair, replace, or retire the computer programs that have the problem. In some cases, when no calculations are involved, the problem can be safely ignored. An example would be a program that produces a report

with the year 2000 printed as 00. Users of such a report can be told that 00 means 2000. Generally, however, it should be expected that some level of repair or replacement will be needed on almost all of the State's existing computer systems. Without prompt attention, State computer systems may fail, having significant adverse impacts on agency clients, business partners, and the taxpayers.

Because of the decentralized nature of State government, the individual agencies are responsible for solving the year 2000 problems with their computer systems. However, the Council on Information Management (CIM) has taken the lead in addressing the problem in State government. CIM's role in addressing the year 2000 problem is consistent with its mission to coordinate information technology planning in State agencies, and has included:

- Development and administration of a survey of agencies in the summer of 1996 to assess the extent of the year 2000 problem in the agencies. Prior to the survey there was no statewide information about the scope of the problem across all of the agencies.

- Staff support for the Century Date Change Task Force which has been the primary way that agencies have exchanged information and discussed the issue.

- Coordination of a procurement of standing contracts for State agencies to use when they need year 2000 vendors or consultants. This saves agencies significant time and effort by not having to go through the procurement process individually.

- Sponsorship of workshops for the year 2000 coordinators in State agencies.

In June of 1997, CIM was designated by the Secretary of Administration as the year 2000 coordinator for executive branch agencies.

Other actions to address the year 2000 problem have included:

- In December of 1996, the Governor issued an executive memorandum setting out the responsibilities of the agencies to ensure that their systems were year 2000 compliant.

- The 1997 Appropriation Act authorized no-interest Treasury loans for bridge financing of year 2000 efforts. An agency can borrow up to one million dollars. The loan program has an established maximum of ten million dollars across all agencies.

- The Department of General Services now requires a year 2000 warranty provision for all technology procurements.

- To address agency concerns about staffing, the Department of Personnel and Training has authorized up to a ten thousand dollar bonus to retain staff involved in year 2000 work.

METHODOLOGY

Based on the mandate for the review, three issues were developed for the study. These are:

- What is the status of year 2000 compliance in State agencies and institutions of higher education?
- What will it cost to modify or replace agency and institution systems to ensure year 2000 compliance?
- What sources of funding, including federal and other special funds, are available to pay for necessary modifications or replacements?

Gartner Group's analysis covered the Commonwealth's information technology infrastructure and application portfolio, with a particular focus on 29 State agencies and institutions of higher education. The scope of the review included in-house and vendor-developed applications as well as the Commonwealth's computing infrastructure (operating systems and major subsystems). The 29 agencies included in the detailed review were:

Department of Information Technology
University of Virginia
Virginia Tech
Department of Social Services
Virginia Commonwealth University
Department of Transportation
Department of Motor Vehicles
Department of Medical Assistance Services
Department of Lottery
Old Dominion University
George Mason University
Department of Health
James Madison University
Virginia Employment Commission
College of William & Mary
Department of Corrections
Department of Taxation
State Corporation Commission
Department of Mental Health, Mental Retardation and Substance Abuse Services
Department of State Police
Alcoholic Beverage Control Board
Department of Accounts
Virginia Community College System
Department of Juvenile Justice
Virginia Retirement System
State Board of Elections
Supreme Court of Virginia
Division of Legislative Automated Systems

Gartner Group utilized a structured methodology to determine the overall costs and risks to the Commonwealth as a result of the year 2000 problem. The major components of this methodology are:

- A Year 2000 Exposure Analysis conducted by Real Decisions, a Gartner Group company, which quantifies the cost to repair in-house-developed applications and the relative risk in achieving that goal, based on an application inventory. The Exposure Analysis survey included questions related to funding of year 2000 projects and anticipated appropriations requests.

- Structured interviews with IT managers in 10 key agencies and institutions to sample key processes and priorities, as well as the linkage to supporting technologies.

- Shorter follow-up interviews with managers in 20 agencies and institutions to confirm and clarify reported data.

- Research and interviews with Gartner Group research analysts to incorporate the most current information in this rapidly changing subject area.

- Quantitative and qualitative analysis of the Commonwealth data.

- Synthesis of results and recommendations.

II. Findings

The Gartner Group report includes findings in several areas, including the costs of year 2000 efforts in the 29 agencies reviewed, statewide management of year 2000 projects, and risk factors which need to be addressed. In addition, JLARC staff collected information on the estimated appropriations which agencies expected to request to fund year 2000 projects. This summary report includes findings from the Gartner Group report and the JLARC staff analysis of funding.

Year 2000 Costs

Gartner Group calculated cost estimates for the Commonwealth to resolve the year 2000 problem completely. It is critical to remember the following when interpreting these estimates:

- Gartner Group's estimates were based on information technology industry averages applied to the Commonwealth's technology inventory, not a physical analysis of each application and operating platform (a prohibitively time-consuming and expensive task).

- Gartner Group's estimates were based on current Commonwealth cost factors. Research and experience is showing a significant drain on in-house and service vendor personnel resources to address the year 2000 problem. This shortage is expected to become acute within the next six to 12 months. The supply shortage will continue to increase the cost of information technology and non-technology resources.

- Some costs may be mitigated through retirement, replacement, or failure strategies.

- The cost estimates represent only the prorated costs to address the year 2000 problem and do not, for example, include the expenditures related to software purchases, leases or upgrades that the Commonwealth would also incur to implement a replacement strategy.

- The cost estimates represent the effort and resources that can be attributed to solving the year 2000 problem. Some of these costs are already accounted for in existing Commonwealth information technology budgets and future spending plans. Gartner Group experience indicates that a significant portion of these costs fall outside current budgets and spending plans.

Gartner Group estimates that the Commonwealth will spend between $80.2 million (best case scenario) to $83.7 million (worst case scenario) for all year 2000 compliance activities associated with its statewide business application portfolio and the underlying computing infrastructure. These costs are comprised of several compo-

nents, the largest of which is the cost of in-house repair of software at $31.1 million (Table 1). Infrastructure costs are estimated to total $28.9 million.

Table 1

Estimated Costs of Year 2000 Repairs and Replacements

Technology Area	*Cost*	
	Best Case	**Worst Case**
Applications to be repaired	$31,070,000	$31,070,000
Applications repaired by contractors	840,600	840,600
Applications to be replaced	8,943,000	8,943,000
Computing infrastructure	28,889,000	28,889,000
Risk factor	10,461,000	13,949,000
Total	$80,204,000	$83,692,000

Source: Gartner Group analysis of agency applications data.

The risk factor in the cost estimate takes into account the fact that the number of business applications will grow as application inventories are completed and that the hardware inventory provided to Gartner Group documents a number smaller than that stated by the Council on Information Management (CIM) in earlier years. These are conservative risk factors based on the degree of missing data and the unknowns about future cost escalation.

Due to several important factors, including the Commonwealth's estimate of a uniform annual cost per person, the total cost of the State's year 2000 project may grow beyond the cost estimates above. These factors are:

- the Commonwealth's need to rely on external contractors for its remediation and testing work,
- the number and magnitude of software packages and hardware platforms not now in the Commonwealth's inventory, and
- the magnitude of cost required for non-technology assets.

Analysis identified several key cost drivers, including personnel costs, the size of the applications portfolio, and the productivity of applications support staff. The impact of these cost factors is explained below.

Personnel Costs. The total cost of achieving year 2000 compliance is calculated using the Commonwealth's fully loaded (compensation, benefits, supporting systems) cost per person. This cost estimate is based upon a fully burdened cost per appli-

cation support person of $78,000 per year (comprised of compensation, benefits, system and facilities costs). This amount is in line with the average cost for all governmental units, but it is approximately 29 percent below that of all organizations in the Real Decisions database of clients. It is likely that, as a result of the Commonwealth's broadening of the range of allowable "body shop" relationships and because of the growing demand for qualified resources, the total cost per person of year 2000 work will rise toward Gartner Group's average cost level. The cost of the Commonwealth's year 2000 project, calculated at this average, would today exceed $115,000,000.

Size of the Application Portfolio. The Commonwealth's application portfolio is largest in the groupings (government units, database average, eastern U.S. companies, and large companies) represented in this study. The current Gartner Group database is comprised of 85 organizations, although Gartner Group has performed approximately 500 application benchmarks since 1990. This positioning is caused by the number and diversity of the Commonwealth's units and their relative lack of uniformity in systems. As a result, there is relatively little opportunity to create either specialty reuse centers or project management competency center(s). Each agency information technology group believes that it is in large measure on its own in addressing its year 2000 problems. The project has been made that much more complicated by this factor.

Productivity. Gartner Group's analysis indicates that the Commonwealth's application support productivity is higher than average, but in line with that of government entities in general. This has a positive impact on year 2000 costs.

Estimated Appropriations

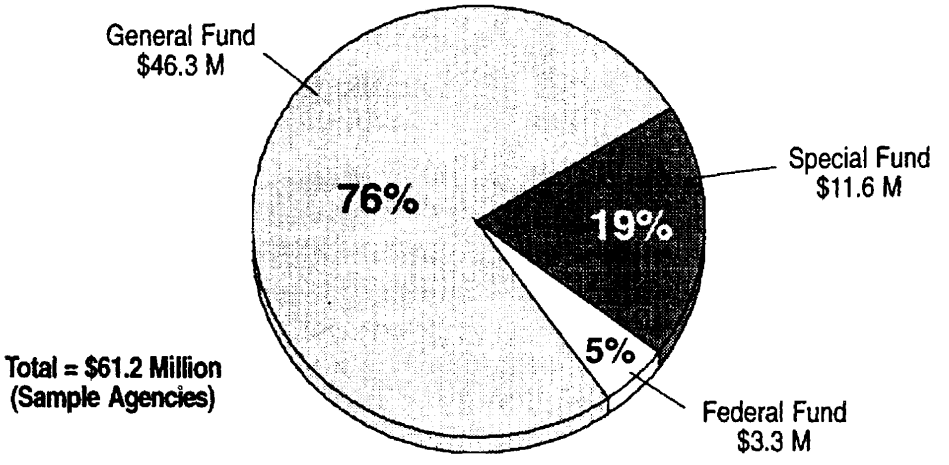
The 29 agencies and institutions in the detailed Gartner Group analysis were asked to estimate the amount of new appropriations they would need in the next biennium to complete year 2000 remediation for each computer application. The total estimated appropriations for the sample agencies was $61.2 million. Of this amount, $46.3 million was for general fund appropriations and the remainder was composed of federal and other special funds (Figure 1). More than half of the total was for the institutions of higher education (Figure 2), with Virginia Tech, Virginia Commonwealth University, and the University of Virginia accounting for most of the amount. Public safety and transportation agencies also expected to make significant appropriations requests, with each estimating more than 10 percent of the total. The requests for each agency in the sample are shown in Table 2. Using these agencies, JLARC staff projected the total for all agencies at about $73 million, with the general fund portion estimated at $55.1 million for the biennium.

Year 2000 Risks for the Commonwealth

Gartner Group has identified the following year 2000 problem risk areas (note: Gartner Group's expertise is in the information technology arena, but, where appropri-

Figure 1

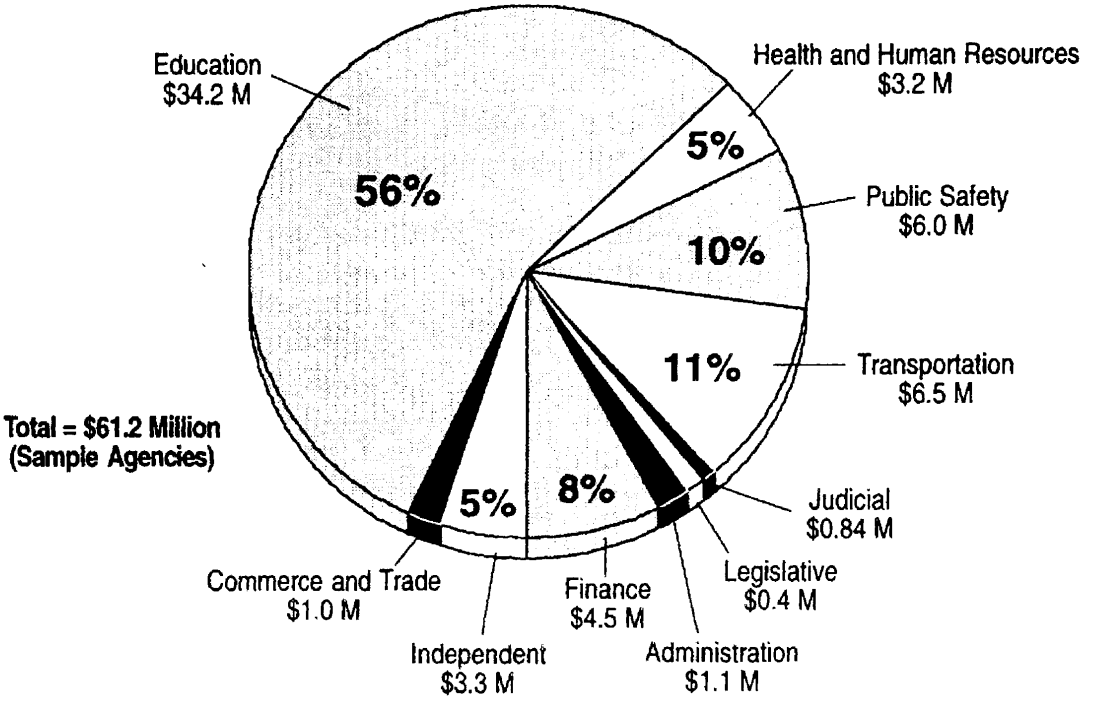
Estimated Appropriations Requests, by Fund Type



Source: JLARC staff survey of State agencies.

Figure 2

Estimated Appropriations Requests, by Secretarial Area



Source: JLARC staff survey of State agencies.

Table 2

Estimated Appropriations Requests for Year 2000 Projects

Agency	General Funds	Non-General Funds	Total Estimated Appropriation
Accounts, Department of	$650,000	$0	$650,000
Alcoholic Beverage Control, Department of	$0	$0	$0
Corporation Commission, State	$0	$2,700,000	$2,700,000
Corrections, Department of	$6,000,000	$0	$6,000,000
Division of Legislative Automated Systems	$400,000	$0	$400,000
Elections, State Board of	$350,000	$0	$350,000
Employment Commission, Virginia	$0	$1,000,000	$1,000,000
George Mason University	$500,000	$0	$500,000
Health, Department of	$0	$0	$0
Information Technology, Department of	$0	$748,000	$748,000
James Madison University	$1,400,000	$10,000	$1,410,000
Juvenile Justice, Department of	$0	$0	$0
Lottery, Department of	$0	$0	$0
Medical Assistance Services, Department of	$750,000	$2,250,000	$3,000,000
Mental Health, Mental Retardation and Substance Abuse Services, Department of	$175,000	$0	$175,000
Motor Vehicles, Department of	$0	$0	$0
Old Dominion University	$250,000	$0	$250,000
Retirement System, Virginia	$0	$614,816	$614,816
Social Services, Department of	$0	$0	$0
State Police, Department of	$0	$0	$0
Supreme Court of Virginia	$840,000	$0	$840,000
Taxation, Department of	$4,074,800	$0	$4,074,800
Transportation, Department of	$0	$6,500,000	$6,500,000
University of Virginia	$4,400,000	$0	$4,400,000
University of Virginia Medical Center	$0	$1,050,000	$1,050,000
Virginia Commonwealth University	$6,825,000	$0	$6,825,000
Virginia Community College System	$621,000	$0	$621,000
Virginia Tech	$19,100,000	$0	$19,100,000
William and Mary, College of	$0	$0	$0

Source: Gartner Group/JLARC survey of State agencies.

ate, it has also documented non-technology issues that were identified as a part of this study):

- The year 2000 effort within the Commonwealth has been structured as a confederation of separate projects, rather than as a cohesive, planned effort. The Commonwealth would benefit from the establishment and empowerment of a true project office whose authority would extend well beyond that of the statewide coordinator now working to harness the efforts of these agencies and institutions. While the statewide coordinator now in place has done a good job in gathering data, more is needed.

  - Project management is critical, and creating an effective program office is key to success. The core program management office should be a state-

wide team, with authority for review and audit of agency and institution project plans and schedules, and final sign-off on testing compliance certification results. There must be one leader of the program management office charged with statewide compliance. A hierarchy should be built under the core team as needed, centrally and within the agencies and institutions.

- The Commonwealth would benefit from the use of common project templates, the establishment and enforcement of certain timelines, and other elements of world-class project management,

- The Commonwealth's considerable information technology infrastructure can be used to facilitate testing. With nine available mainframes, the Commonwealth need not rely on one central machine for testing purposes. In addition, available midrange resources must be identified and put to work in testing.

- There is great reliance on replacement as a means of addressing the year 2000 problem in the Commonwealth. It is very important to weigh the risks of replacing applications with vendor packages against the benefits of this strategy, and that achievable plans are in place for these efforts.

- There has been relatively little detailed planning with regard to the testing and compliance elements of the year 2000 project. This focus on the initial elements of the process is understandable, but the crucial latter stages must be addressed promptly to ensure that the Commonwealth's systems are fully compliant.

- There is little evidence of a "supply chain" view of the year 2000 problem in the Commonwealth. What is in evidence is an information technology-centric focus on systems. It is very important for the agencies and institutions of the Commonwealth to map their information flows, determine other organizations on which they might rely, and contact external providers to query their year 2000 compliance level.

- There is evidence of a lack of effort or ability to discern among levels of importance of applications. Nearly all applications identified in this study were given mission-critical status. As a result, the decisions that may have to be made if triage becomes a reality remain to be made, and there is little evidence of a framework in which this decision will occur. This rigorous questioning and priority-setting process should be a basic responsibility of the statewide project management office.

- The Commonwealth's telecommunications services demand additional focus. The Commonwealth receives services both from internal staff and external providers. Of particular concern are the PABXs and other time- and date-sensitive devices supporting its voice network, and the hubs, routers and other time- and date-sensitive devices supporting its data network of

more than 2,200 data circuits. The year 2000 project for its telecommunications infrastructure will mirror that of the overall information technology project, with a requirement both of internal staffing and capability analysis and intense vendor management.

- Gartner Group's interviews indicate that the potential year 2000 problems associated with security systems, environmental control systems, elevator control systems, and other systems of this type are generally not understood or being addressed. There must be communication and technology transfer between information technology and other professionals on the steps in addressing year 2000 concerns, with particular emphasis on the vendor management process.

- Certain agencies and institutions face larger risks primarily because of staffing shortages. In Gartner Group's analysis, fully 50 percent of the reporting agencies and institutions reported staff shortages. To a lesser extent, there were risks associated with staff turnover and limited staff tenure. The largest obstacles mentioned to meeting the demands of the year 2000 project in the context of meeting key business demands were the lack of qualified personnel and lack of adequate funding.

- While there had been relatively little loss of staff as a result of offers from the private sector, what the interviewees reported was increasing difficulty in finding personnel qualified in older systems. More than one interviewee expressed the concern that the agency's reliance on contractors made the underpinning of the year 2000 project uncertain.

- Some agency information technology organizations may be experiencing a false sense of security because individual applications are year 2000-compliant. These organizations are only approaching the most difficult and demanding phase of year 2000 compliance, which is integration testing. In this phase, the internal linkages between a business unit's applications as well as the interfaces to external business partners must be tested and modified. This phase is completed only after a rigorous audit or certification process has been completed.

- There was little evidence of explicit budgeting for year 2000 projects having been performed by these agencies and institutions. Furthermore, Gartner Group found no evidence of special federal funds planned for use by State agencies for addressing this problem.

- There was a distinction drawn between generally funded and specially funded agencies in their outlook on funding prospects. The former were particularly concerned about the relatively limited size of the Special Loans Fund. They were further concerned about the Fund's status as a *loan* vs. an appropriation. Special funded agencies generally sensed no real limitations on funding.

III. Recommendations

The year 2000 problem is a business issue as well as an information technology problem. While the challenges facing the Commonwealth's IT organizations are substantial, the State must also begin immediately to address supply chain (suppliers and customers) and non-technology infrastructure issues. As a result, Gartner Group recommends that the Commonwealth:

- Immediately create a central year 2000 project office for State government. There should be a core staff of information technology and non-technology personnel dedicated to this effort. The project office must leverage the experience of the Commonwealth's year 2000 problem "centers of excellence" quickly to disseminate best practices and to leverage tools and techniques. Gartner Group's interviews suggest, for example, that the University of Virginia may be a center of excellence in terms of year 2000 planning and organization.

- Empower the project office to set statewide standards and prioritize plans to address the Commonwealth's business applications, information technology infrastructure, telecommunications infrastructure, process control systems and supply chain interfaces. These plans must address staffing, service vendor and funding requirements as well as business and information technology contingency options.

- Prioritize year 2000 compliance efforts. The State needs to refine the its application prioritization scheme to ensure that the largest and most business-critical applications are accurately identified. The State should focus repair efforts on the largest and most critical applications. Gartner Group's analysis indicates that the Commonwealth's year 2000 project efforts have been focused primarily on process-important applications and on its infrastructure to date. Progress on mission-critical and mission-important applications is lagging; there is also much work to be done on process-critical applications. The need to redirect focus may well lead to an acceleration of cost.

Gartner Group further recommends that the Commonwealth's year 2000 project office:

- Ensure that the Commonwealth monitors compliance progress based on application priority. A critical element of this priority ranking must be the potential legal liability of year 2000 failures, particularly in the agencies open to litigation involving entitlements or constitutional rights, such as the Department of Corrections and the Department of Medical Assistance Services.

- Establish a year 2000-compliance certification program for the Commonwealth's agencies and institutions and their supply chains.

- Begin an active communication campaign to raise year 2000 awareness within the end-user and information technology developer communities. Provide guidelines as well as conversion and testing assistance as needed for high-impact systems.

- Extend the communication campaign outside of information technology. There was a question among the agencies and institutions interviewed whether there was real focus on the Commonwealth's year 2000 problem on the part of decision-makers in State government, particularly in light of the fact that 1997 is an election year.

- Work to develop personnel retention policies and plans, including both financial incentives and targeted management attention. The current plan to provide a cumulative bonus of $10,000 over the balance of the century was deemed insufficient to retain critical personnel. Training commitments can also be used to the Commonwealth's benefit.

The Commonwealth's year 2000 project office should also:

- Maintain the focus of the Commonwealth's leadership on the year 2000 problem and its implications.

  - There were expressions of concern about the amount of incremental unexpected work that would arise as a result of new legislation in the 1998 Session of the General Assembly. This concern must be analyzed and supported, if appropriate.

  - There was more than one request for a freezing of legislative mandates during the 1998 Session, in order to allow the agencies and institutions to follow through on making the year 2000 problem their highest priority. This position must be analyzed and supported, if appropriate.

- Ensure that the Commonwealth's leadership recognizes that the "rules of the game" are changing increasingly rapidly, which means:

  - funding requirements are likely to change over time,

  - new service vendor offerings and tools are appearing on a regular basis, and

  - ongoing access to current year 2000 information, best practices and experts is essential.

The Commonwealth's agencies and institutions must:

- Recognize that there are a number of risks associated with package replacement strategies:
  - Qualified implementation vendor resources are becoming increasingly scarce.
  - Package implementation may require significant changes to business processes.
  - The Commonwealth will need to rely on vendor warranties and reputation to ensure year 2000 compliance.
- Understand that the testing phases are particularly time-consuming and demanding of project management skills. There has been relatively little detailed planning with regard to testing and compliance elements of the year 2000 projects. These crucial latter stages must be addressed promptly to ensure that the Commonwealth's systems are fully compliant. Furthermore, the Commonwealth's agencies and institutions must be aware of their need to conduct testing on midrange platforms.

Finally, the Commonwealth should be careful when comparing its results to those of other states, keeping the following points in mind:

- Different states are at different points in dealing with the problem.
- The results reported by each state must be normalized based on the size and nature of the application inventory as well as the size of the state.
- The methodology used to develop the other estimates must be understood, since other states may have internally underestimated the cost to address the year 2000 problem fully.

Appendix:

Study Mandate

ITEM 14 F - 1996 APPROPRIATION ACT
(As Amended, 1997 Session)

The Joint Legislative Audit and Review Commission shall conduct a study of data processing services for state agencies and institutions, including the feasibility and advisability of privatizing the state data center located at the Department of Information Technology. As part of the study the Commission shall: 1) evaluate the effectiveness of statewide information technology planning and standards, including the mission and operations of the Council on Information Management; 2) assess the scope and utility of current data center services, including the feasibility of further consolidation of state data processing systems; 3) evaluate the effectiveness of using multiple main frame platforms; 4) determine the short- and long-term costs associated with privatization of the data center as well as continued operation by the state; 5) examine the various forms or levels of privatization which could be used; 6) assess the impact on agencies and institutions using DIT services; and 7) examine the methods for managing the risks associated with privatization of critical data processing systems. To complete its work, the Commission may employ any consulting services it deems necessary. Expenses for such services shall be funded from a separate appropriation for the Commission from the Computer Services Internal Services Fund, in the amount of $495,000. In addition, the Commission shall include in its study an assessment of the current status of agency actions associated with computer hardware and software problems related to the year 2000. The Commission's assessment shall include, but not be limited to, an inventory of actions completed or in progress in each agency and institution of higher education, the cost of completing all necessary modifications to hardware and software, and potential mechanisms for funding the identified costs. To complete the assessment of year 2000 issues, a separate appropriation of $100,000 for the Commission shall be made from the Computer Services Internal Services Fund. All agencies of the Commonwealth shall cooperate with the Commission in the completion of this study. The Commission shall make a final report to the Governor and the General Assembly no later than January 1, 1998.

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