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## Appendices

## **Appendix 1: How OJP will Use the Strategic Plan**

### **How OJP will Use the Strategic Plan**

The purpose of the IT Strategic Plan (ITSP) is to provide a road map for Office of the Chief Information Officer's (OCIO's) IT direction. The primary focus of the ITSP document is to define the organization's business strategy and stated business direction. In the case of OJP, the term "business" is used to refer to the Office's function to provide federal leadership in developing the nation's capacity to prevent and control crime, administer justice and assist crime victims. For the sake of this ITSP, when the term "business" is referenced, it is in the context of the Office. The business strategy is currently being developed by the business with the assistance of Booz Allen and will be completed in October of 2002. For the purpose of this version of the ITSP, meetings were held with the business to gain an 80% confidence rating that business goals and objectives listed in Section 3 of the ITSP were correct for the coming year.

Once established, the ITSP will be used by the OCIO to support enabling the business' objectives. The ITSP provides the guidelines through which IT projects are selected, planned, executed and measured to support the business objectives. The established goals of the OCIO represent those actions that support the "business" of efficiently producing quality. Without this agreed-upon strategic framework (i.e., what the business needs and how IT can support those needs most effectively), independent point-of-need decisions will be made by the individual business units throughout OJP which will often lead to costly interoperability and integration problems.

In addition to having a focus on the OJP business strategy, the OCIO will also maintain an understanding of the Department of Justice IT Strategic Plan and will include elements of this plan as flow downs to the OCIO ITSP. The OCIO will incorporate some of the DOJ IT strategic goals within its framework of goals and objectives in order leverage common systems and processes where appropriate.

It should be pointed out that the ITSP is not an annual budget document and does not include financial/recurring cost and expense information. This information is contained in the annual budgetary documents or in other documents that have been developed by the CIO. The ITSP will have high-level cost/benefit information for the key initiatives that have been approved by the CIO and OJP business sponsors.

### **Scope of IT Strategic Plan**

This first version of OCIO's ITSP was written primarily to establish a baseline and a direction for OCIO capabilities and services. The plan is focused on the "foundation" of OCIO's IT environment in order to document the baseline OCIO environment and set a course for additional improvements for the OCIO to be reflected in subsequent issues of the ITSP. This effort must be done in stages in order to improve the delivery of services in a controlled and managed fashion. Some elements of the planning process are new to members of the OCIO staff and being able to have staff members gain experience in developing the initial ITSP will be critical to future and better planning exercises.

The OCIO's ITSP is designed to provide guidance to OCIO on the provisioning of the basic IT services for OCIO's constituents. OCIO's stakeholders include:

- Executive staff (Director, Deputy Director, Associate Directors)
- Chiefs and Managers
- Program and Administrative Staff
- Department of Justice
- U.S. Citizens.

## **Appendix 2: IT Principles**

## IT Principles

IT principles provide the framework for making informed decisions regarding technology. The following principles shown in the figure below should be used to guide the IT initiatives and decisions OCIO is faced with during execution of the ITSP.

Figure 1. IT Principles

|   |   |
|---|---|
| <b>Support:</b><br><ul style="list-style-type: none"> <li>• Continuously provide a stable environment</li> <li>• Improve customer service/support/satisfaction</li> </ul> | <b>General:</b> <ul style="list-style-type: none"> <li>• Empower end users</li> <li>• Utilize IT for business benefit</li> <li>• Decrease total cost of ownership</li> <li>• Determine cost benefit (ROI)</li> <li>• Provide maximum interoperability.</li> <li>• Support the business units in defining core business processes.</li> </ul>  |
|   | <b>Applications:</b> <ul style="list-style-type: none"> <li>• Use commercial off-the-shelf (COTS) applications wherever possible</li> <li>• Balance business and technical tradeoffs with view towards TCO</li> <li>• Internet, intranet and Web-enabled.</li> </ul>  |
|   | <b>Data:</b> <ul style="list-style-type: none"> <li>• Data is an asset</li> <li>• Data is entered one time, from the source</li> <li>• Data/information must be available in a timely fashion and in the right format</li> <li>• Enterprise, workgroup and personal data are managed as an integrated set</li> <li>• Data is self-service and accessible through the intranet.</li> </ul> |
|   | <b>Security:</b> <ul style="list-style-type: none"> <li>• Known security policies</li> <li>• Intrusion monitoring</li> <li>• Remote access service control (underlying technology—not application specific).</li> <li>• Compliance with Enterprise Security Architecture</li> </ul>   |
|   | <b>Infrastructure:</b> <ul style="list-style-type: none"> <li>• Consistent with the selected core set of platforms</li> <li>• Internet, intranet and Web-enabled</li> <li>• Standards-based</li> <li>• Mainstream.</li> </ul>   |

## **Appendix 3: The Gartner Framework for E-Government Strategy Assessment**

# The Gartner Framework for E-Government Strategy Assessment

Strategic Analysis Report  
8 March 2002

**Andrea Di Maio, Christopher Baum, Bill Keller, Gregg Kreizman, Massimo Pretali, David Seabrook**

Falling revenue and over ambitious objectives are forcing governments to reassess their e-government strategies in terms of constituent service, operational efficiency and political return. We provide a framework for such assessments.

## Management Summary

Implementing an e-government strategy involves a long and complex transformation process, complicated by attempting to achieve ambitious political objectives set just a few years ago, but which now appear to be unrealistic. Changed economic conditions and government priorities call for a detailed review of e-government initiative portfolios. Such reviews must be conducted by independent assessors using a more complex evaluation framework than those that have been used to determine country or state e-government rankings.

Gartner's framework for evaluating the deployment of an e-government strategy covers three areas:

- Service levels to constituents (For example: Is the service what they need? Are they using it? Does it provide greater value at a lower cost than offline service?)
- Operational efficiency (For example: Are online transactions reducing government costs?)
- Political return (For example: Is the e-government initiative increasing consensus? Are there any positive effects on the economy and the society at large?)

Although the framework is not designed to rank initiatives from the most to the least valuable (such a ranking is almost impossible to achieve and would, in any event, be worthless), it will enable governments to reprioritize established initiatives and identify new initiatives that are required.

## The Need for a New Assessment Approach

### Shortcomings of Established Assessment Frameworks

Any framework for assessing and comparing the progress of e-government strategies across countries or regions is flawed unless it takes into account several basic elements, including:

- *Availability and actual use of the information and communication technology infrastructure.* The degree of e-government development in a country depends on the pervasiveness of the technological infrastructure and its use by constituents (measured by the number of online transactions per inhabitant and by e-commerce volumes).
- *The regulatory and political framework.* The roles of government departments and agencies, and of various tiers of government, are very different in federal and centralized countries, and these differences require different priorities in e-government investments. For instance, the greater the number of agencies that interact with constituents through traditional channels, the harder it is to establish a “one-stop shop” for services. The relative strengths of different laws and regulations also have an effect. For instance, where privacy prevails over freedom of information, it will be particularly difficult to use data integration and business intelligence to “join up” services or improve constituent-relationship management.
- *The actual needs of constituents.* Attitudes toward e-government vary across countries, and politicians need to take this into account. As shown in a recent Gartner survey (see “E-Government: What Are Citizens Really Looking For?” COM-13-3960), citizens in different countries want, and need, different services. Taking account of constituents’ views will influence development priorities for e-government deployment.
- *The role of intermediaries.* Some countries have a strong tradition of delivering government services through intermediaries, often due to the inability of government departments to directly deliver services in a sufficiently efficient manner. The role of intermediaries is set to change considerably, with new players entering the market and others transforming their roles. But despite the strong trend in most e-government strategies to cut out intermediaries, reality will prove that intermediation is necessary, if not essential, if constituents are to get value from online government services (see “E-Government Services: A Matter for Intermediaries,” SPA-13-5996).
- *The overall efficiency of established processes and constituents’ satisfaction with them.* E-government is often seen as an opportunity to transform inefficient processes. Where established processes meet constituents’ expectations and government efficiency goals, there is much less pressure to transform them and promote online availability. A good example is the Swedish income tax filing system (see “Income Tax in Sweden: Simplicity Does Not Need the Web,” CS-14-6898).

These elements are not considered in most global surveys, or in various attempts to benchmark Web service delivery. For example, the assessment framework adopted by the eEurope initiative in the European Union uses just 20 services to measure progress from information-only services to transaction services.

### **A Wider Range of Metrics is Needed**

Government organizations need a much wider range of metrics to justify continued support for e-government initiatives. Instead of measuring success based on rankings in Web service availability surveys, or in self-surveys, governments should focus on metrics that demonstrate operational efficiency and value to constituents. Though this is hard to do, it is particularly necessary during tough economic times, when politicians and government officials are looking to trim costs and require greater proof that spending on e-government service delivery is producing results. Gartner recommends that the following metrics be used in determining e-government success:

- Stakeholder satisfaction and value, measured by surveys before and after electronic delivery commences. Stakeholders include constituents, political leaders, employees and contractors that deliver support services (e.g., contact centers). The surveys should also measure stakeholder perception of privacy and security.
- Web channel usage relative to other channels (e.g., walk-in, phone or mail). Have targets been set, and has usage met those targets?
- Times of day when Web channels are being used. Is there a need for 24x7 support for those using the Web channels? Are the services continuously available?
- The costs for each channel, and the improvement in service delivery. Has the Web channel decreased costs or time it takes to deliver services compared with traditional channels?
- The extent to which processes have been improved by delivering them via new channels. Have unnecessary steps been removed? Have resources been redistributed to other areas?
- The ways in which government has been transformed. Has electronic service delivery resulted in multi-department or cross-jurisdiction (state, local or federal) collaboration? Do constituents still need to understand how government is organized? Have multi-department or jurisdiction data standards been created? Are shared services such as common payment processes, e-mail and authentication deployed, and are multiple departments using them?
- The extent to which e-government concepts and benefits are promoted on Web sites, in the press and in public places.

## Basic Requirements of an E-Government Assessment Framework

Most e-government strategies being implemented today were formulated when economic growth seemed unstoppable and industry and government alike were enthusiastically investing in information and technology that would radically transform both the way business is conducted and the fundamentals of the economy. The economic slowdown has brought a new reality. Government departments and agencies need to review their e-government strategies, achievements and continuing developments to assess whether they match changed constituents' requirements. The starting point is to conduct an e-government strategy assessment. Experience demonstrates that the value of an independent review, which can be carried out either by a government audit organization or authority, or by an external trusted party, is to highlight new priorities and suggest which initiatives should be stopped, accelerated or started to fit those priorities. Having the assessment carried out by an independent organization is very important, given its political implications and possible influences. An e-government strategy assessment should be designed to:

- Provide an independent assessment of the effectiveness and efficiency of one or several electronic service delivery projects.
- Be applicable at different levels: service, agency or department, and jurisdiction (e.g., local).
- Apply to governments, departments and agencies at different stages of e-government development.
- Be a starting point for refining e-government strategy.

An assessment should not be confused with a high-level survey aimed at benchmarking a country, region or department against others. Benchmarking mostly compares the availability of Web services and information delivery. In contrast, an e-government strategy assessment forces a government, department or agency to examine the effectiveness of its strategy and to consider whether it delivers real value to its constituency or to the government itself.

Regardless of the methodology is used, the assessment should possess the following characteristics:

- It must measure all dimensions of e-government – i.e., constituent service, operational efficiency and political return.
- It must focus on online channels, but also look at the impact on other channels.
- It must provide results by service, but also provide a meaningful synthesis of results across services for senior government officials and politicians.
- As well as counting Web hits and number of transactions performed, it must also measure value and cost to constituents.
- It must be based on a balanced combination of quantitative and qualitative measures.
- It must measure both direct and intermediate online channels.

## The Gartner Framework

The Gartner E-Government Strategy Assessment Framework meets all of these requirements. It is based on Gartner's definition of e-government and its critical success factors. We define e-government as the transformation of public-sector internal and external relationships through Net-enabled operations, information and communication technology to optimize government service delivery, constituency participation and internal government processes.

The Gartner framework entails the assessment of:

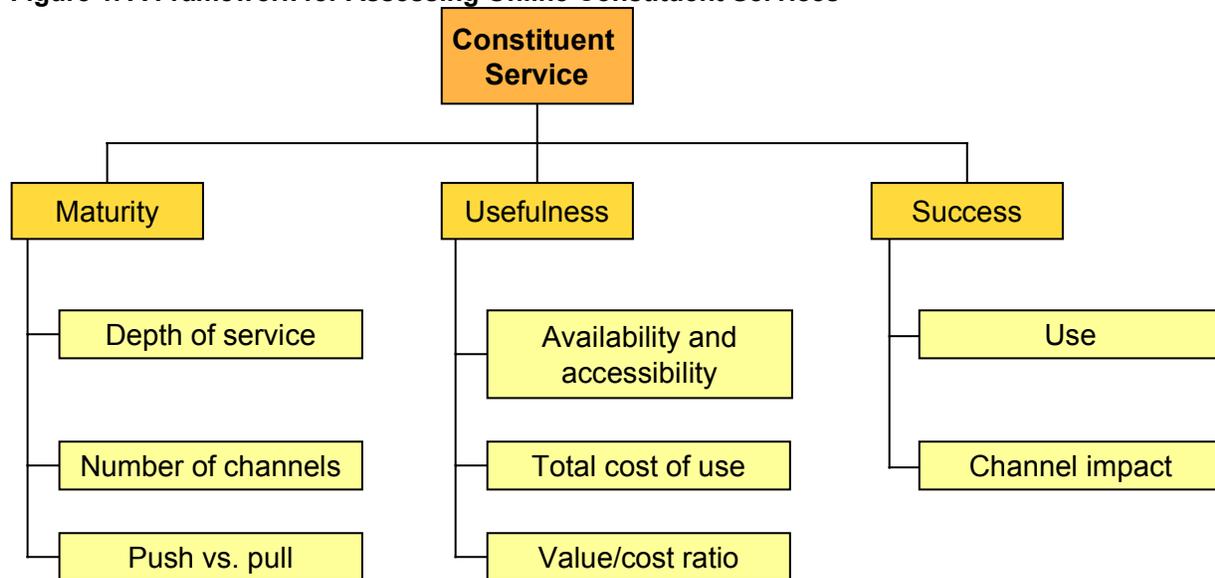
- Constituent service levels
- Operational efficiency
- Political return

### Assessing Constituent Service Levels

Assessment of online constituent service levels (see Figure 1) is performed against eight parameters covering three main areas:

- The maturity of the service delivery channel
- Its usefulness
- How successful it is compared with other channels

Figure 1. A Framework for Assessing Online Constituent Services



Source: Gartner Research

The eight parameters are:

- *Depth of online service*: This provides a measure of how much of the service, ranging from simple information to seamless integration with other services, is delivered online compared with the service goal. A shallower depth does not necessarily indicate a lower service level. Some services (e.g., those for people

with special needs) may deliver greater value by maximizing rather than minimizing interaction through other channels, or information delivery may be the goal rather than interaction or transaction.

- **Number of channels:** The number of other channels through which the online service is also available.
- **Push vs. pull:** Access to government services can either be initiated by constituent “pull” (e.g., by connecting to a Web site) or by government “push” (e.g., e-mailing a message to constituents). The relative use of the two approaches is a measure of the quality of e-government services. A truly constituent-centric approach would require a greater number of “push” rather than “pull” services.
- **Availability and accessibility:** This is a measure of how much the service is available to potential users in a given time period, taking into account both planned and unplanned downtime. For mature services, it clearly correlates with the “use” parameter (see below). One important aspect is access for constituents with special needs, as defined by U.S. Section 508 or by the World Wide Web Consortium’s Web Accessibility Initiative.
- **Total cost of use:** This is a measure of the cost that constituents bear to access the service. This varies according to the kind of constituent (enterprise or citizen), average income, the nature of the service and so on (see “Measuring E-Government Constituent Service Levels,” DF-14-7787). Total cost of use is defined as hourly average income x (average service delivery time + commuting time). Comparison with other channels is also recommended.
- **Value-to-cost ratio:** This is the ratio between the value to the constituent and the total cost of use for that constituent. Services can be classified according to the value they deliver to constituents.
- **Use of online service:** This measures how much the service is being used, in absolute terms (e.g., in a given period of time) or in relative terms (e.g., growth over a period of time). Based on a combination of conventional indicators for Web site evaluation, it focuses mostly on identifying a stable and steadily growing user base.
- **Channel impact:** This measures the extent to which the availability of an online service is affecting other ways in which the service is delivered. The deployment of an online service will initially add traffic on other channels, with people asking for information or trying to solve initial service shortcomings. Later, measurable reductions in the use of other channels should be detected. It is also important to understand whether adding an online channel alters the total penetration rates of government services, the demographic patterns of service use or the proportion of government transactions that occur outside of normal working hours.

Guidelines measuring each of these eight parameters are given in Figure 2. Measurements should be made, albeit at different levels of detail, both for services

available on the government Web site and for services that are hosted on the Web sites of external service providers, business service providers, intermediaries and so forth.

Measurements for intermediate services could be difficult to obtain, since the government does not directly control intermediaries. In such cases, the government can get channel count statistics, but may not have access to the availability, accessibility, cost and value elements. To perform an accurate assessment, the government will therefore need to have a good relationship with the intermediary.

**Figure 2 Measuring Constituent Service Levels**

| <b>Parameter</b>                      | <b>Indicator</b>   | <b>How to Measure</b>   |
|---------------------------------------|--|---|
| <b>Depth of online service</b>        | A percentage indicating how far electronic service delivery is from its goal. Depending on the nature of the service, the goal for electronic delivery can be: <ul style="list-style-type: none"> <li>• Information only</li> <li>• Interaction (form download, official e-mail)</li> <li>• End-to-end transaction (single department)</li> <li>• Seamlessly integrated transactions possible</li> </ul> | <ul style="list-style-type: none"> <li>• Questionnaire to responsible department</li> <li>• Web site statistics</li> </ul>  |
| <b>Channels</b>                       | Number of different channels (including intermediated ones) through which the service is available   | <ul style="list-style-type: none"> <li>• Questionnaire</li> <li>• Observation</li> </ul>  |
| <b>Push vs. pull</b>                  | <ul style="list-style-type: none"> <li>• Number of outbound forms</li> <li>• Percentage of pre-filled forms</li> </ul>   | <ul style="list-style-type: none"> <li>• Questionnaire</li> </ul>   |
| <b>Availability and accessibility</b> | <ul style="list-style-type: none"> <li>• Total service availability</li> <li>• Planned and unplanned downtime</li> <li>• Average service response time</li> <li>• Service/data accessibility — e.g., percentage of Web information accessible to people with special needs</li> </ul>  | <ul style="list-style-type: none"> <li>• Statistics from data center</li> <li>• Statistics from Web sites</li> <li>• W3C WAI, U.S. Section 508 definition, or equivalent; measured by output of accessibility auditing tool and augmented by personal inspection</li> </ul>   |
| <b>Total cost of use</b>              | <ul style="list-style-type: none"> <li>• Hourly average income x (average service delivery time + commuting time)</li> <li>• Can be broken down by segment</li> </ul>  | <ul style="list-style-type: none"> <li>• Hourly average income from national statistical institutions or industry associations</li> <li>• Time evaluated through questionnaire and Web site analysis</li> </ul>   |
| <b>Value-to-cost ratio</b>            | <ul style="list-style-type: none"> <li>• Value/total cost of use</li> <li>• Value can be measured on a discrete qualitative range or using service-specific indicators — e.g., reduced unemployment time, earlier tax reimbursement, ease of access to information by specific categories such as disabled people</li> </ul>   | <ul style="list-style-type: none"> <li>• Value can be derived from constituent surveys (to be done on a regular basis both offline and online)</li> <li>• Alternatively, focus groups (possibly built taking into account constituents' peculiarities) can be used</li> </ul> |
| <b>Use of online service</b>          | <ul style="list-style-type: none"> <li>• Number of hits on service pages</li> <li>• Number of downloaded forms</li> <li>• Number of completed transactions</li> <li>• Percentage of returning users</li> <li>• Average time spent to complete transaction</li> </ul>   | <ul style="list-style-type: none"> <li>• Web site statistics</li> <li>• Questionnaire to responsible department</li> <li>• Existing key performance indicators</li> </ul>   |
| <b>Channel impact</b>                 | <ul style="list-style-type: none"> <li>• Percentage of all transactions happening online</li> <li>• Ratio of online transaction growth and other channel growth</li> </ul>   | <ul style="list-style-type: none"> <li>• Web site statistics</li> <li>• Data from call center performance assessment</li> <li>• Selected key performance indicators</li> </ul>  |

**W3C** World Wide Web Consortium

**WAI** Web Accessibility Initiative

Source: Gartner Research

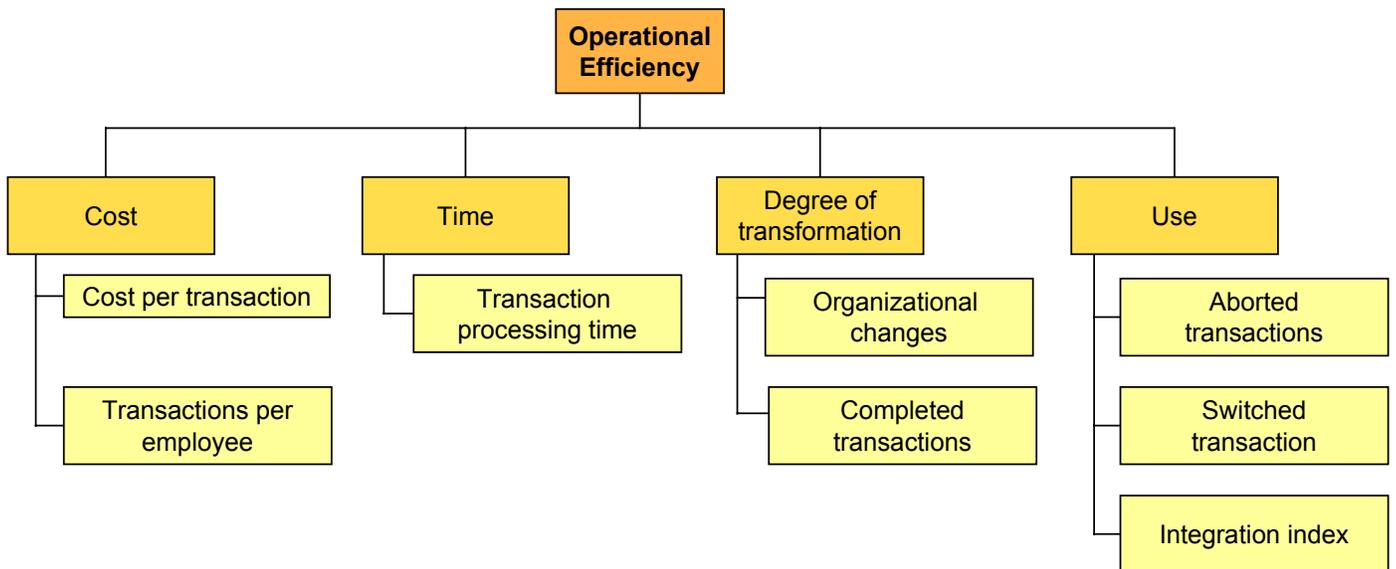
## Assessing Operational Efficiency

The assessment of efficiency is easier to manage than the assessment of service levels. Several government organizations already have relatively consistent measures for tracking operational costs (e.g., cost per MIPS; desktop, server and staff costs; staffing ratios; and WAN, contact center and voice costs). With slightly different degrees of details, these measures provide the data for assessing changes in operational efficiency.

Assessment of operational efficiency (see Figure 3) is performed against eight parameters covering four areas:

- Cost
- Time
- Degree of transformation (i.e., how much organizations and processes have been transformed)
- Actual use

Figure 3. A Framework for Assessing Operational Efficiency



Source: Gartner Research

The eight operational efficiency parameters, and how to measure them, are described in Figure 4.

**Figure 4 Measuring Operational Efficiency**

| Parameter   | Indicator  | How to Measure   |
|---|--|--|
| <b>Cost per transaction</b>                                       | <ul style="list-style-type: none"> <li>Total number of completed transactions</li> <li>IT-related cost indicators (include all specific hardware and software, personnel and outsourcing costs)*</li> <li>Non-IT-related costs (by process/transaction), including personnel and occupancy costs)</li> </ul>   | <ul style="list-style-type: none"> <li>Questionnaire to the departments involved; where possible, each department should attribute costs to different transaction types, as transactions have different cost structures in terms of how much they use resources</li> </ul>   |
| <b>Transactions per employee</b>                                  | <ul style="list-style-type: none"> <li>Number of transactions</li> <li>Number of staff</li> </ul>  | <ul style="list-style-type: none"> <li>Web site and application statistics</li> <li>Questionnaire to responsible department</li> <li>Existing key performance indicators</li> <li>Type of transactions (by category)</li> </ul>  |
| <b>Average transaction processing time</b>                        | <ul style="list-style-type: none"> <li>Transaction start time</li> <li>Transaction completion time</li> </ul>  | <ul style="list-style-type: none"> <li>Web site and application statistics</li> <li>Questionnaire to responsible department</li> <li>Existing key performance indicators</li> <li>Type of transactions (by category)</li> </ul>  |
| <b>Organizational changes</b>                                     | <ul style="list-style-type: none"> <li>Employee turnover by department and type of transaction</li> <li>Number of staff reduced or reallocated, and associated costs, as a result of providing the service online</li> <li>Identified reduction in the number of separate organizational units included in the process</li> <li>Identified elimination of an organizational unit as a result of providing the service online</li> <li>Number of services using shared infrastructure services rather than duplicating service infrastructure within the business unit</li> </ul> | <ul style="list-style-type: none"> <li>Questionnaire to the involved departments</li> <li>Number of employees</li> <li>Employees' skillsets</li> <li>Budget reduction</li> </ul> <p>The direct attribution of headcount reduction to a specific online service must be carefully substantiated, taking into account how organizational changes depend on online delivery rather than other factors, such as a political mandate to integrate departments, to devolve or centralize responsibilities and so on.</p> |
| <b>Number of completed transactions</b>                           | <ul style="list-style-type: none"> <li>Number of completed transactions per employee (taking into account headcount changes caused by e-government transformation)</li> <li>Number of completed transactions per constituent</li> </ul>  | <ul style="list-style-type: none"> <li>Questionnaire to the involved departments</li> <li>Number of employees</li> <li>Constituent demographics</li> <li>Web site and application statistics</li> </ul>  |
| <b>Percentage of aborted or not completed transactions</b>        | <ul style="list-style-type: none"> <li>Percentage of aborted, abandoned or not completed transactions against total transaction number, by type of service</li> </ul>  | <ul style="list-style-type: none"> <li>Web site and application statistics</li> </ul>  |
| <b>Percentage of transactions switched to a different channel</b> | <ul style="list-style-type: none"> <li>Number of online transactions</li> <li>Number offline transactions</li> </ul>   | <ul style="list-style-type: none"> <li>Questionnaire to the involved departments</li> <li>Transaction type and process statistics</li> </ul>   |
| <b>Integration index</b>  | <ul style="list-style-type: none"> <li>(G2E+G2B)/G2G, a measure of how tightly government departments are integrated; based on the percentage of interdepartmental communication vs. external communication and employee communication</li> </ul>  | <ul style="list-style-type: none"> <li>Questionnaire</li> <li>Application and infrastructure statistics</li> </ul>   |

\*IT-related cost indicators include:

- Operations centers* (including disaster recovery, high availability and workload) — total number of MIPS and gigabytes installed and total number of midrange servers by type
- Desktop/LAN*, including total number of desktops
- Wide-area voice and data networks*, including total number of sites, devices, traffic
- Call centers*, including total number of contacts
- Application development and support*, including total number of function points developed and supported

- G2B** Government to business
- G2E** Government to employee
- G2G** Government to government
- MIPS** Millions of instructions per second

Source: Gartner Research

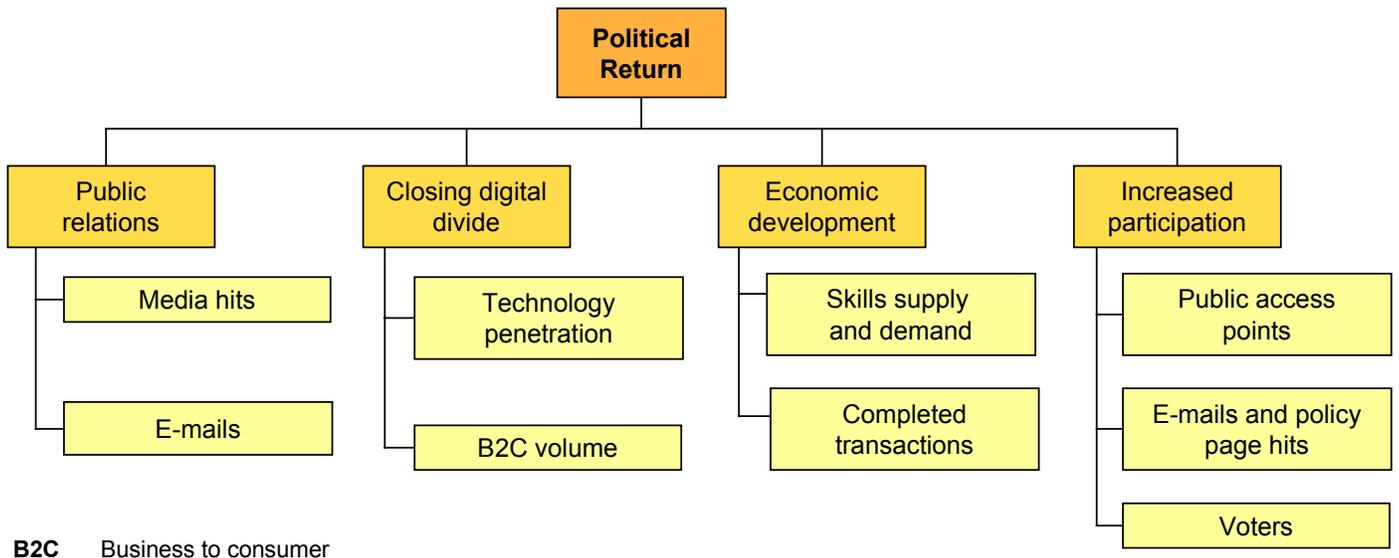
## **Assessing Political Return**

One objective of an e-government strategy is to guarantee a political return, which might include greater exposure for political leaders, increased constituent participation, and societal and economic impacts. Most of these are “soft” criteria, and in some cases they are only partly related to e-government initiatives. However, it is important to assess the impact of e-government initiatives in areas other than service delivery and efficiency.

Political return (see Figure 5 and Figure 6) can be assessed against four groups of parameters:

- Public relations
- Closing the digital divide
- Economic development
- Increased participation

**Figure 5. A Framework for Assessing Political Return**



Source: Gartner Research

**Figure 6. Measuring Political Return**



| Parameter                         | Indicators   | How to Measure   |
|-----------------------------------|--|--|
| <b>PR exposure</b>                | <ul style="list-style-type: none"> <li>• Media hits</li> <li>• Overall Web site hits</li> <li>• E-mails</li> </ul>   | <ul style="list-style-type: none"> <li>• Web site statistics</li> <li>• Press clippings</li> <li>• Newsletters</li> <li>• Press releases issued</li> <li>• Speeches and presentations before community groups and other stakeholders</li> </ul>  |
| <b>Closing the digital divide</b> | <ul style="list-style-type: none"> <li>• Technology penetration</li> <li>• Average access speed</li> <li>• School penetration</li> <li>• B2C volume (variation)</li> </ul>   | <ul style="list-style-type: none"> <li>• PC, cell phone, Internet penetration per 1,000 inhabitants</li> <li>• Percentage of Internet users with access at speeds higher than 512 Kbps</li> <li>• Percentage of Internet-connected schools</li> <li>• Percentage of connected teachers (e.g., from the World Competitiveness Yearbook, Computer Almanac or Eurobarometer)</li> </ul> |
| <b>Economic impact</b>            | <ul style="list-style-type: none"> <li>• Skill supply</li> <li>• Skill demand</li> <li>• B2B and B2C volumes</li> </ul>  | <ul style="list-style-type: none"> <li>• Percentage of workers with IT training (e.g., with a European Computer Driving License)</li> <li>• Percentage of teleworkers (e.g., from the World Competitiveness Yearbook, Computer Almanac or Eurobarometer)</li> </ul>  |
| <b>Increased participation</b>    | <ul style="list-style-type: none"> <li>• Availability of public access points</li> <li>• E-mails and hits on opinion or policy pages</li> <li>• Variation in the percentage of voters (both through electronic or traditional channels)</li> </ul> | <ul style="list-style-type: none"> <li>• Web site statistics</li> <li>• National and voting statistics</li> <li>• Questionnaires</li> </ul>  |

**B2B** Business to business  
**B2C** Business to consumer

**PR** Public relations  
**Kbps** Kilobits per second

Source: Gartner Research

Some of the data, such as that associated with closing the digital divide or with economic impact, may be difficult to relate to government action. However, it is relevant to assess the impact of an e-government strategy in these areas. These measurements need to be weighted according to the ratio of private and public expenditure.

## Configuring the Assessment Framework

The assessment framework can be configured to meet specific objectives and purposes. The overall framework structure and the parameter categories should be maintained, although the individual indicators, their depth and their accuracy can be tuned to meet specific needs. Established benchmarking products can also be used within the framework.

## **Synthesizing and Presenting Results**

The results of the assessment can be aggregated in different ways and presented using tables, diagrams or a combination of both. Examples include aggregating results by:

- Clusters of service (e.g., income-related or permit-related)
- Department, agency or tier of government
- Geography

We recommend that the results for service levels, operational efficiency and political return be presented separately, and possibly combined using different bi-dimensional diagrams. Comparing selected measures with technology-penetration indicators is also useful, because such comparisons relate e-government progress to the specific context.

## **Conclusion**

Governments and their departments and agencies must assess the progress of their e-government initiatives. They should look at all areas impacted by e-government transformation — i.e., constituent service levels, operational efficiency and political return. Such an assessment is best performed by an audit office or by an independent third party, since the results will significantly influence priorities and lead to a critical review of ongoing projects. The assessment framework must encompass each of these three areas, although the data collection and analysis effort can be tailored to meet the objectives of the specific assessment.

## **Appendix 4: Management and Key Operations Process Assessment Detail**

## **Assessment of Current OCIO Environment- Detail**

Gartner performed two high-level assessments of the OCIO organization during 2002 (1) Initial IT Assessment and (2) Management and Key Operation Processes Assessment.

### **Initial IT Assessment**

The Initial Assessment was designed to target known problem areas and problem areas that are common within IT organizations in order to identify low-hanging fruit improvement opportunities. Gartner was tasked with performing an initial on-site review to assess the OJP environment, management style and structure, technology issues and business drivers. This initial assessment focused upon reviewing the existing IT architecture and strategic plan, and defining opportunities for improvement.

The review was conducted through interviews and documentation reviews followed by analysis and recommendations.

The interviews included representatives from:

- OJP Programs Offices
- CIO Branch Chiefs
- Technologists
- Major IT Contractor(s)

The findings from the assessment were evaluated in view of Gartner research, Best Practices and experience. The evaluation focused upon general business and IT issues as well as a number of IT functional areas. This assessment was concluded in May of 2002.

### **Management and Key Operation Processes Assessment**

As part of the strategy development process a Management and Key Operational Process Assessment was performed to assess the definition of process, repeatability, and clarity of roles and responsibilities. The following processes were evaluated:

- IT Organization and Relationships
- Managing the IT Investment
- Managing Human Resources
- Communicating Management Aims and Objectives
- Infrastructure Strategy
- Information Architecture
- Quality Management

- Project Management
- Incident Management
- Problem Management
- Change Management
- Release Management
- Service Level Management
- Capacity Management
- Availability Management
- Configuration Management
- Continuity Management

The purpose of the assessment was not to determine the effectiveness of each process, but to establish a baseline of its existence in terms of definition, recognition, and reliability for utilization in moving the OCIO towards its goals and objectives. It was recognized early on that the OCIO is in the beginning of a transition to elevate its value and presence within OJP, and therefore many of the processes were still considered immature or in need of establishment. The hope for the current management team was that the assessment would prove to be useful in determining where each process stood in relation to best practice and what process improvements would be most valuable to the OCIO.

The scoring legend that used for each process is as follows:

| <b><u>Score</u></b> | <b><u>Definition</u></b>  |
|---------------------|---|
| 1                   | Process was not formally defined and clear roles and responsibilities were not present              |
| 2                   | Process represents condition 1, but appears plans are in place to make improvement changes          |
| 3                   | Process appears to be present, but may be informal, ad hoc, and informal roles and responsibilities |
| 4                   | Process is formally defined with clear roles and responsibilities and metrics                       |

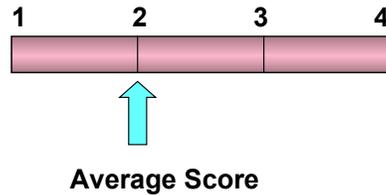
The following pages summarize the assessment scores and observations for each process that was evaluated.

# 1. Define an IT Organization and Relationships

## IT Management Process Review Define an IT Organization and Relationships

The goal of defining an IT Organization and Relationships is to deliver the right IT services by defining an organization suitable in numbers and skills with roles and responsibilities defined and communicated, aligned with the business that facilitates the strategy and provides for effective direction and adequate control.

| Key Elements Reviewed  | Grade |
|--|-------|
| <input type="checkbox"/> <i>IT Planning or Steering Committee</i>                | 1.25  |
| <input type="checkbox"/> <i>Organizational Placement of the IT Function</i>      | 3     |
| <input type="checkbox"/> <i>Review of Organizational Achievements</i>            | 2     |
| <input type="checkbox"/> <i>Roles and Responsibilities</i>                       | 1     |
| <input type="checkbox"/> <i>Responsibility for Quality Assurance</i>             | 2     |
| <input type="checkbox"/> <i>Responsibility for Logical and Physical Security</i> | 4     |
| <input type="checkbox"/> <i>Ownership and Custodianship</i>                      | 1.5   |
| <input type="checkbox"/> <i>Data and System Ownership</i>                        | 1.5   |
| <input type="checkbox"/> <i>Supervision</i>                                      | 1     |
| <input type="checkbox"/> <i>Segregation of Duties</i>                            | 1     |
| <input type="checkbox"/> <i>IT Staffing</i>                                      | 1     |
| <input type="checkbox"/> <i>Job or Position Descriptions for IT Staff</i>        | 3     |
| <input type="checkbox"/> <i>Key IT Personnel</i>                                 | 3     |
| <input type="checkbox"/> <i>Contracted Staff Policies and Procedures</i>         | 3     |
| <input type="checkbox"/> <i>Relationships</i>                                    | 2     |



**Gartner Observations:** There is an implicit understanding of the need for of an IT organization; however, roles and responsibilities are neither formalized nor enforced. The IT function is organized to respond tactically, but inconsistently, to customer needs and vendor relationships. The need for a structured organization and vendor management is communicated, but decisions are still dependent on the knowledge and skills of key individuals. There appears to be little in the emergence of common techniques to manage the IT organization and vendor relationships. The organization structure is technically and functionally structured compared to a process or role based organization structure.

## 2. Managing the IT Investment

### IT Management Process Review

#### Managing the Information Technology Investment

The goal of Managing the Information Technology Investment is to promote component responsibility, accountability and good public stewardship over IT investments; and, to facilitate early recognition of business unit investments in order to identify resources and prioritize common investments.

| Key Elements Reviewed  | Grade | 1 | 2 | 3 | 4 |
|--|-------|---|---|---|---|
| <input type="checkbox"/> <i>Selecting and Prioritizing Technology Investments</i>                  | 2     |   |   |   |   |
| <input type="checkbox"/> <i>Managing and Controlling In-Process Technology Investment Projects</i> | 2     |   |   |   |   |
| <input type="checkbox"/> <i>Evaluating Investment Performance</i>                                  | 2     |   |   |   |   |
| <input type="checkbox"/> <i>Integration with Annual Budgeting and Operating Plans</i>              | 2     |   |   |   |   |

**Gartner Observations:** The organization recognizes the need for managing the IT investment, but this need is communicated inconsistently. There is limited formal allocation of responsibility for IT investment selection and budget development. Perceived significant expenditures require supporting justifications. Isolated implementations of IT investment selection and budgeting occur, with informal documentation. IT investments are justified on an ad hoc basis. Reactive and operationally focused budgeting decisions occur. OJP has plans underway to address these weaknesses with a consulting company targeted to perform this work.

## 3. Managing Human Resources

### IT Management Process Review

#### Managing Human Resources

The goal of Managing Human Resources is to ensure the acquisition and maintenance of a motivated and competent workforce and to maximize personnel contributions to the IT processes. Sound, fair and transparent personnel management practices to recruit, hire, train, compensate, and promote IT staff in a manner that will enable IT to deliver required services.

| Key Elements Reviewed   | Grade | 1 | 2 | 3 | 4 |
|---|-------|---|---|---|---|
| <input type="checkbox"/> <i>Personnel Recruitment and Promotion</i> | 1     |   |   |   |   |
| <input type="checkbox"/> <i>Personnel Qualifications</i>            | 1.5   |   |   |   |   |
| <input type="checkbox"/> <i>Roles and Responsibilities</i>          | 1     |   |   |   |   |
| <input type="checkbox"/> <i>Personnel Training</i>                  | 1     |   |   |   |   |
| <input type="checkbox"/> <i>Cross-Training or Staff Back-up</i>     | 1     |   |   |   |   |
| <input type="checkbox"/> <i>Personnel Clearance Procedures</i>      | 4     |   |   |   |   |
| <input type="checkbox"/> <i>Employee Job Performance Evaluation</i> | 1     |   |   |   |   |
| <input type="checkbox"/> <i>Job Change and Termination</i>          | 1     |   |   |   |   |

**Gartner Observations:** It is unclear if management recognizes the need for IT human resources management and the need for a formalized process or plan. The IT human resources management process is informal and has a reactive and operationally focused approach to the hiring and managing of IT personnel. This situation is worse than the average score indicates due to the a high score in the clearance procedures. This appears to be a volatile situation in the near term that could lead to a much higher attrition rate for the OCIO should these issues not show improvement during the next nine months.

## **4. Communicating Management Aims and Objectives**



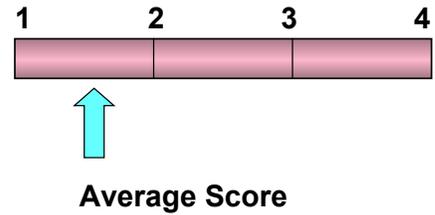
## IT Management Process Review

### Communicating Management Aims and Objectives

The goal of Communicating Aims and Objectives is to ensure user awareness and understanding of IT's goals and objectives. Policies that have been established and communicated to the user community are a key enabler. Regularly communicating the 'value of IT' is important to enable the organization to maintain focus on goals and objectives.

#### Key Elements Reviewed

| Key Elements Reviewed   | Grade |
|---|-------|
| <input type="checkbox"/> Positive Information Control Environment           | 1     |
| <input type="checkbox"/> Management's Responsibility for Policies           | 2     |
| <input type="checkbox"/> Communication of Organization Policies             | 1     |
| <input type="checkbox"/> Policy Implementation Resources                    | 1     |
| <input type="checkbox"/> Maintenance of Policies                            | 1.5   |
| <input type="checkbox"/> Compliance with Policies, Procedures and Standards | 1     |
| <input type="checkbox"/> Quality Commitment                                 | 1     |
| <input type="checkbox"/> Security and Internal Control Framework Policy     | 2     |
| <input type="checkbox"/> Intellectual Property Rights                       | 2     |
| <input type="checkbox"/> Issue-Specific Policies                            | 2     |
| <input type="checkbox"/> Communication of IT Security Awareness             | 2     |



**Gartner Observations:** Management appears to be reactive in addressing the requirements of the information control environment. Policies, procedures and standards are developed and communicated on an ad-hoc, as needed basis, driven primarily by issues. The development, communication and compliance processes are informal and inconsistent. Quality is recognized as a desirable philosophy to be followed, but practices are left to the discretion of individual managers. Training is carried out on an individual, as required basis.

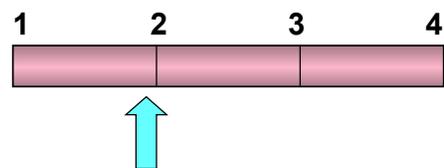
## 5. Define an Infrastructure Strategy

### IT Management Process Review Define an Infrastructure Strategy

The goal of defining an Infrastructure Strategy is to take advantage of available and emerging technology to drive and enable the business strategy. A Technology Infrastructure Plan that sets and manages clear and realistic expectations of what technology can offer (products, services, and delivery mechanisms) is a key enabler for an Infrastructure Strategy.

#### Key Elements Reviewed

|   | Grade |
|---|-------|
| <input type="checkbox"/> <i>Technology Infrastructure Planning</i>      | 1.5   |
| <input type="checkbox"/> <i>Monitor Future Trends &amp; Regulations</i> | 2     |
| <input type="checkbox"/> <i>Technology Infrastructure Contingency</i>   | 2     |
| <input type="checkbox"/> <i>Hardware and Software Acquisition Plans</i> | 2     |
| <input type="checkbox"/> <i>Technology Standards</i>                    | 2     |
| <input type="checkbox"/> <i>Assessment of Existing Systems</i>          | 2     |
| <input type="checkbox"/> <i>Infrastructure Plan Maintenance</i>         | 2     |



**Average Score**

**Gartner Observations:** It appears that management recognizes the need for technology infrastructure planning, but has not formalized either a process or plan. Technology component developments and emerging technology implementations are ad-hoc and isolated. There appears to be a reactive and operationally focused approach to planning. Technology directions are driven by the often-contradictory product evolution plans of hardware, systems software and applications software vendors. Communication of the potential impact of changes in technology is inconsistent.

## 6. Information Architecture

## IT Management Process Review Define an Information Architecture

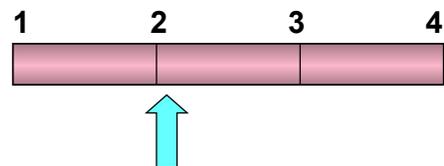
The goal of defining an Information Architecture is to optimize the organization of information systems. A business information model that ensures appropriate systems are defined to optimize the use of the information is the key enabler of this goal.

### Key Elements Reviewed

- Information Architecture Model*
- Corporate Data Dictionary Rules*
- Data Classification Scheme*
- Security Levels*

### Grade

1.7  
NA  
2  
2.5



**Average Score**

**Gartner Observations:** It appears that management recognizes the need for an information architecture, but has not formalized either a process or a plan to develop one. Isolated and reactive development of components of an information architecture is occurring. There appears to be isolated and partial implementations of data diagrams, documentation, and data syntax rules. The definitions address data, rather than information, and are driven by application software vendor offerings. There is inconsistent and sporadic communication of the need for an information architecture.

## 7. Quality Management

### IT Management Process Review Quality Management

The goal of Quality Management is to ensure that the customer requirements are met. This is enabled by the planning, implementing and maintaining of quality management standards and systems providing for distinct development phases, clear deliverables and explicit responsibilities.

#### Key Elements Reviewed

#### Grade

|  |   |   |
|--|---|---|
| <input type="checkbox"/> <i>General Quality Plan</i>   |   | 1 |
| <input type="checkbox"/> <i>Quality Assurance Approach</i>   |   | 1 |
| <input type="checkbox"/> <i>Quality Assurance Planning</i>   |   | 1 |
| <input type="checkbox"/> <i>Quality Assurance Review of Adherence to IT Standards and Procedures</i>               |   | 1 |
| <input type="checkbox"/> <i>System Development Life Cycle Methodology</i>  |   | 2 |
| <input type="checkbox"/> <i>System Development Life Cycle Methodology for Major Changes to Existing Technology</i> |   | 2 |
| <input type="checkbox"/> <i>Updating of the System Development Life Cycle Methodology</i>                          |   | 2 |
| <input type="checkbox"/> <i>Coordination and Communication</i>   |   | 2 |
| <input type="checkbox"/> <i>Acquisition and Maintenance Framework for the Technology Infrastructure</i>            |   | 2 |
| <input type="checkbox"/> <i>Third-Party Implementor Relationships</i>  |   | 2 |
| <br>   |   |   |
| <input type="checkbox"/> <i>Program Documentation Standards</i>  | 3 |   |
| <input type="checkbox"/> <i>Program Testing Standards</i>  | 2 |   |
| <input type="checkbox"/> <i>System Testing Standards</i>   | 3 |   |
| <input type="checkbox"/> <i>Parallel/Pilot Testing</i>   | 3 |   |
| <input type="checkbox"/> <i>System Testing Documentation</i>   | 2 |   |
| <input type="checkbox"/> <i>Quality Assurance Evaluation of Adherence to Development Standards</i>                 | 2 |   |
| <input type="checkbox"/> <i>Quality Assurance Review of the Achievement of IT Objectives</i>                       | 2 |   |
| <input type="checkbox"/> <i>Quality Metrics</i>  | 1 |   |
| <input type="checkbox"/> <i>Reports of Quality Assurance Reviews</i>   | 1 |   |



**Average Score**

**Gartner Observations:** There appears to be a management awareness of the need for quality assurance. Individual expertise drives quality assurance, when it occurs. Quality assurance activities that do occur are focused on IT project and process-oriented initiatives, not on organization-wide processes. IT projects and operations are not generally measured for quality, but management makes informal judgements on quality.

## 8. Project Management

### IT Management Process Review Project Management

The goal of Project Management is to deliver project on time and within budget. Accomplished by the organization identifying and prioritizing projects in line with the operational plan and the adoption and application of sound project management techniques for each project undertaken.

#### Key Elements Reviewed

|   | Grade |
|---|-------|
| <input type="checkbox"/> <i>Project Management Framework</i>                        | 1.5   |
| <input type="checkbox"/> <i>User Department Participation in Project Initiation</i> | 2     |
| <input type="checkbox"/> <i>Project Team Membership and Responsibilities</i>        | 1     |
| <input type="checkbox"/> <i>Project Definition</i>                                  | 2     |
| <input type="checkbox"/> <i>Project Approval</i>                                    | 2     |
| <input type="checkbox"/> <i>Project Phase Approval</i>                              | 2     |
| <input type="checkbox"/> <i>Project Master Plan</i>                                 | 1     |
| <input type="checkbox"/> <i>System Quality Assurance Plan</i>                       | 1     |
| <input type="checkbox"/> <i>Planning of Assurance Methods</i>                       | 1     |
| <input type="checkbox"/> <i>Formal Project Risk Management</i>                      | 1     |
| <input type="checkbox"/> <i>Test Plan</i>   | 3     |
| <input type="checkbox"/> <i>Training Plan</i>                                       | 3     |
| <input type="checkbox"/> <i>Post-Implementation Review Plan</i>                     | 1     |



Average Score

**Gartner Observations:** The OCIO is generally aware of the need for projects to be structured and is aware of the risks of poorly managed projects. The use of project management techniques and approaches within IT is a decision left to individual IT managers. Projects are generally poorly defined and may incorporate some generic business and technical objectives of the organization or the business stakeholders (300 Bs). There is a general lack of management commitment and project ownership and critical decisions can be made without user management or customer input. There is no clear organization within IT projects and roles and responsibilities are not clearly defined. Project schedules and milestones are poorly defined. Project staff time and expenses are not tracked and compared to budgets. It was stated that the real issue with project management is the intense OJP political environment that appears nearly impossible to manage because so many stakeholders have the ability to change project scope or deliverables with no consultation with IT about these changes, the impact they have on a project in terms of scope, cost, and schedule.

## 9. Incident Management

### IT Operations Process Review Incident Management

An incident is defined as *any event which is not part of the standard operation of a service and which causes, or may cause, an interruption to, or a reduction in, the quality of that service.*

The goal of Incident Management is to restore normal service operation as quickly as possible and minimize the adverse impact on business operations, thus ensuring that the best possible levels of service quality and availability are maintained. 'Normal service operation' is defined here as service operation within service level agreement (SLA) limits.

#### Key Elements Reviewed

- Incident detection and recording
- Classification and initial support
- Investigation and diagnosis
- Resolution and recovery

#### Grade

3  
4  
3  
1



### IT Operations and Service Management Process Review Problem Management

The goal of Problem Management is the detection of the underlying causes of an incident and their subsequent resolution and prevention. Goal is not one to restore service as quickly as possible, but to search for a permanent solution.

informed of the status of the incident and getting closure. Other areas of improvement could be in identifying the underlying causes of incidents against a known problem error database, keeping management up-to-date on an analysis of incident trends and having specific goals and objectives for incident management.

#### Key Elements Reviewed

- Problem Control
- Error Control
- Proactive Problem Prevention
- Production of Related Management Information

Grade  
1  
1  
1  
1



## 10. Problem Management

Average Score

**Gartner Observations:** It appears that there are some problem management activities such as problem determination and problem resolution. There does not appear to be specific procedures and roles and responsibilities assigned for analyzing significant recurring incidents and underlying problems. There also doesn't appear to be formal problem management records or report management or regularly established meetings to present problems to management.



## 11. Change Management

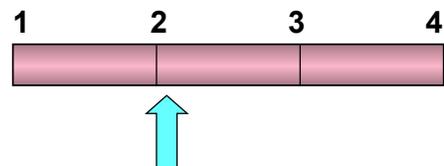
### IT Operations and Service Management Process Review Change Management

The goal of Change Management is to ensure that potential changes of IT service components are reviewed in terms of their efficacy to meet business requirements, and their impact on service quality.

#### Key Elements Reviewed

|  |   |
|--|---|
| <input type="checkbox"/> Facilitating of changes into organization | 3 |
| <input type="checkbox"/> Assessment of changes to be made          | 3 |
| <input type="checkbox"/> Accountability for changes                | 1 |
| <input type="checkbox"/> Supporting project management             | 1 |
| <input type="checkbox"/> Prevention of changes with high risk      | 3 |
| <input type="checkbox"/> Prevention of unauthorized changes        | 3 |
| <input type="checkbox"/> Scope of change management                | 1 |

#### Grade



**Average Score**

**Gartner Observations:** It appears that the purpose of change management is understood and that informal roles and responsibilities have been established. Changes are introduced through an agreed upon management review body although changes are not prioritized. It does not appear that there is formal and regular meeting with customers to examine impact of changes and to monitor customer satisfaction. Change management is focused on application development and not infrastructure changes such as switches and servers etc.

## 12. Release Management

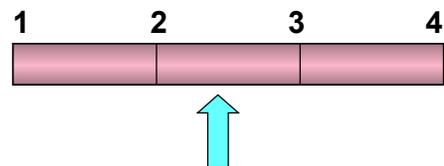
## IT Operations and Service Management Process Review Release Management

The goal of Release Management undertakes the planning, design, build, configuration and testing of hardware and software to create a set of release components for a live environment. Activities also include the planning, preparation, and scheduling of a release.

### Key Elements Reviewed

|   |   |
|---|---|
| <input type="checkbox"/> Release policy and planning              | 3 |
| <input type="checkbox"/> Release design, build, and configuration | 3 |
| <input type="checkbox"/> Release frequency                        | 1 |
| <input type="checkbox"/> Rollout planning                         | 2 |
| <input type="checkbox"/> Extensive testing                        | 3 |
| <input type="checkbox"/> Signoff and release                      | 3 |
| <input type="checkbox"/> Communication, preparation, & training   | 1 |

### Grade



**Average Score**

**Gartner Observations:** The release management process would appear to be reasonably effective although many of the procedures have not been formally documented and it doesn't appear that formal roles and responsibilities have been established. The frequency of releases appears to be abnormally high with 20 major releases a year along with 40-50 patches and mostly tied to GMS. Due to the high frequency of releases not having more formality of process and roles and responsibilities does not present a high risk scenario although the high frequency suggests other problems could exist in testing and program management.

### 13. Service Level Management—Not evaluated

#### **IT Operations and Service Management Process Review Service Level Management**

Service level management is the name given to the processes of planning, negotiating, co-ordinating, monitoring, and reporting on Service Level Agreements (SLAs). The process includes the on-going review of service achievement to ascertain that the required service quality is maintained and wherever necessary improved.

SLAs contain specific targets against which performance can be evaluated. They also define the responsibilities placed on all parties, in particular binding Service Delivery to offer an agreed quality of service so long as the users constrain their demands within agreed limits. The relationship between Service Delivery and its customers is therefore put on to a formal business-like footing similar to those which exist between Service Delivery and its suppliers.

Service level management provides a number of benefits not least of which is that it enables specific targets to aim for and against which service quality can be monitored and measured. Furthermore, service monitoring will allow weaknesses in existing services to be identified, so that the quality of service provision can be improved.

**Gartner Observations:** Formal Service Level Agreements (SLAs) have not been established with OCIO customers although there appear to be a fair number of informal or “understood” levels of service by which OCIO services are expected to meet.

### 14. Capacity Management—Not evaluated

### **IT Operations and Service Management Process Review Capacity Management**

The aim of Capacity Management is to match the supply of IT resources to customer demands for them. The process is needed to support the optimum and cost-effective provision of IT services by helping organisations to match their IT resources to the demands of the business. It is concerned with having the appropriate IT capacity and with making the best use of it.

The demand for IT resources is based on agreeing with users of IT services, levels to which those services will be delivered, based on business requirements and embodied within service level agreements.

The customer's needs are assessed by forecasting the likely growth in demand for current services and by sizing new service elements. The desired service levels required can then be agreed with service users, based on business needs. The sub-processes associated with capacity management are concerned with forecasting workload, sizing applications, and maintaining a Capacity Plan in order to meet existing and future needs.

The Capacity Plan is beneficial to both Systems Management and Purchasing in order to gain visibility of the schedule and likely infrastructure changes necessary to maintain service at the required levels.

**Gartner Observations:** Are currently developing an understanding of what the OCIO capacity is through conducting an inventory of equipment. The CUG and Customer Advocacy Program have recently met to define the capacity requirements. Current challenges in addressing capacity is a lack of standardized equipment.

## 15. Availability Management—Not evaluated

### IT Operations and Service Management Process Review Availability Management

Availability management is the optimization of the availability and reliability of IT services and of the supporting IT infrastructure and organization, in order to ensure that the requirements of the business are met. Availability management entails systematically undertaking preventative and corrective maintenance of IT services, within justifiable cost. Technical, organizational, procedural, security and contractual aspects have an important role in this process.

The aspects of availability management to be covered by this questionnaire are:

**Reliability:** the capability of an IT component to perform a required function under stated conditions for a stated period of time.

**Maintainability:** the capability of an IT component or IT service to be retained in, or restored to, a state in which it can perform its required functions.

**Serviceability:** a contractual term which is used to define the availability of IT components as agreed with external organizations supplying and maintaining these components.

**Security:** providing access to IT components or IT services under secure conditions.

**Gartner Observations:** Without having SLA's there has been little definition provided for response times and system availability times for IT applications and services. Little if anything has been done in capturing metrics although OCIO claims that tools are in place. Preventive maintenance tools of Bindview, Big Brother, OEM Oracle Enterprise Manager are being installed.

## 16. Configuration Management—Not evaluated

## **IT Operations and Service Management Process Review Configuration Management**

The scope of configuration management is assumed to include all configuration items (CIs) used in the provision of live, operational services, as a minimum set.

Configuration management provides direct control over IT assets and improves the ability of the service provider to deliver quality IT services in an economic and effective manner. Configuration management should work closely with change management.

All components of the IT infrastructure should be registered in the Configuration Management Database (CMDB). The responsibilities of configuration management with regard to the CMDB are:

- identification
- control
- status accounting
- verification.

**Gartner Observations:** The OCIO currently doesn't have a database that includes all IT configured items such as laptops, desktops, servers, monitors, printers, switches, hubs, software, procedures, documentation etc.

## 17. Continuity Management—Not evaluated

### **IT Operations and Service Management Process Review Continuity Management**

IT service continuity management (ITSCM) is concerned with the organization's ability to continue to provide a pre-determined and agreed level of IT services to support the minimum business requirements following a business service interruption.

ITSCM is a vital subset of, and provides support to the overall business continuity management (BCM) process by ensuring that the required IT services / facilities (including computer systems, networks, applications, telecommunications, technical support and Service Desk) can be recovered within required and agreed business time-scales.

The ITSCM process is based on the identification of the required, minimum levels of business operation that are required following an incident, and the necessary systems, facilities and service requirements. It is driven by these business needs, not by the perceived needs of the IT community, and requires senior management commitment.

**Continuity Management:** The COOP DR initiative is currently being planned which will address the disaster recovery for OJP business systems. Right now there is very little that has been formally defined for continuity requirements.

## **Appendix 5: Technical Architecture & Direction**

## **Technical Architecture & Direction**

### ***High-level Operational Concept Description***

This section contains high-level Enterprise Architecture models for the OJP grant process. This is based on the same approach taken in the Federal Grants Pilot Architecture from the CIO Council, which is a pilot of the Federal Enterprise Architecture Framework (FEAF). This pilot used the DOD C4ISR products/models in place of the loosely defined FEAF products. This hybrid approach is well suited to the grant process at OJP, and four of the DOD models are presented in this section.

### ***Product Guidance and Characteristics***

The High-level Operational Concept Description provides a graphical representation of operations in terms of such things as mission, functions, participants, organizations, and/or geographic locations of elements. It can be used in presentations to high-level decision-makers and can help orient and focus detailed discussions. Any topics that are addressed in discussions should be included in the facing page text. See the *DoD Architecture Framework Version 1.0 DRAFT Volume II*.

([http://www.c3i.osd.mil/org/cio/i3/AWG\\_Digital\\_Library/pdfdocs/fw.pdf](http://www.c3i.osd.mil/org/cio/i3/AWG_Digital_Library/pdfdocs/fw.pdf))

### ***Product Discussion***

The Office of Justice Programs High-level Operational Concept illustrates the basic function of OJP both for the “As-Is” and “To-Be” environments.

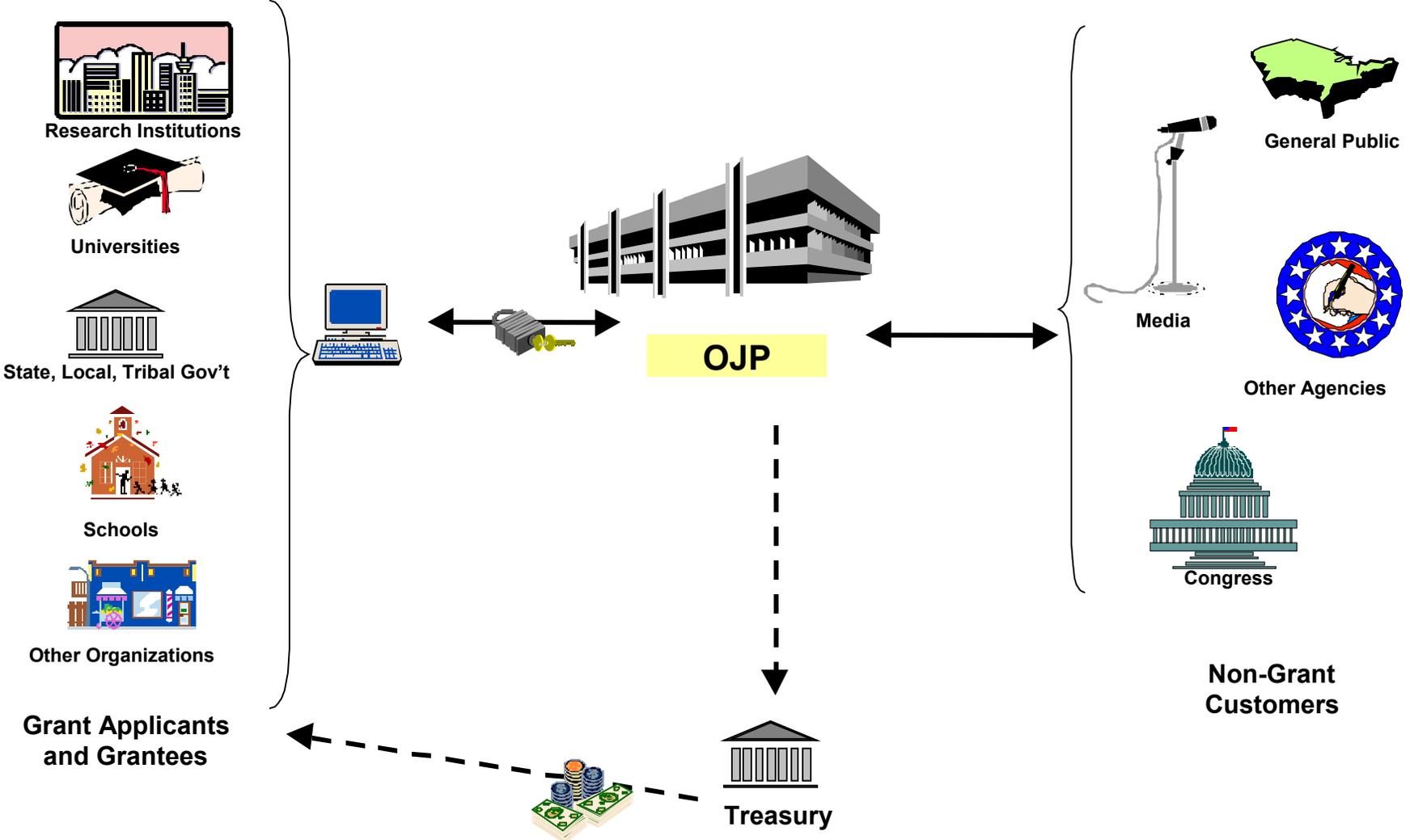
#### ***As-Is***

Grant Applicants come from many different types of organizations including: Research Institutions, State, Local and Tribal Governments, Universities, Schools, and Other Organizations (including non-profits). These organizations apply for the various program area grants and some are awarded and become grantees. Payment of the grant monies flows through the U.S. Department of Treasury. Another aspect of the OJP business is to respond to inquiries and requests from Non-Grant Customers such as the General Public, Media, Other Agencies and Congress. These requests are for information such as clarification on grant funding, statistical data, and published reports.

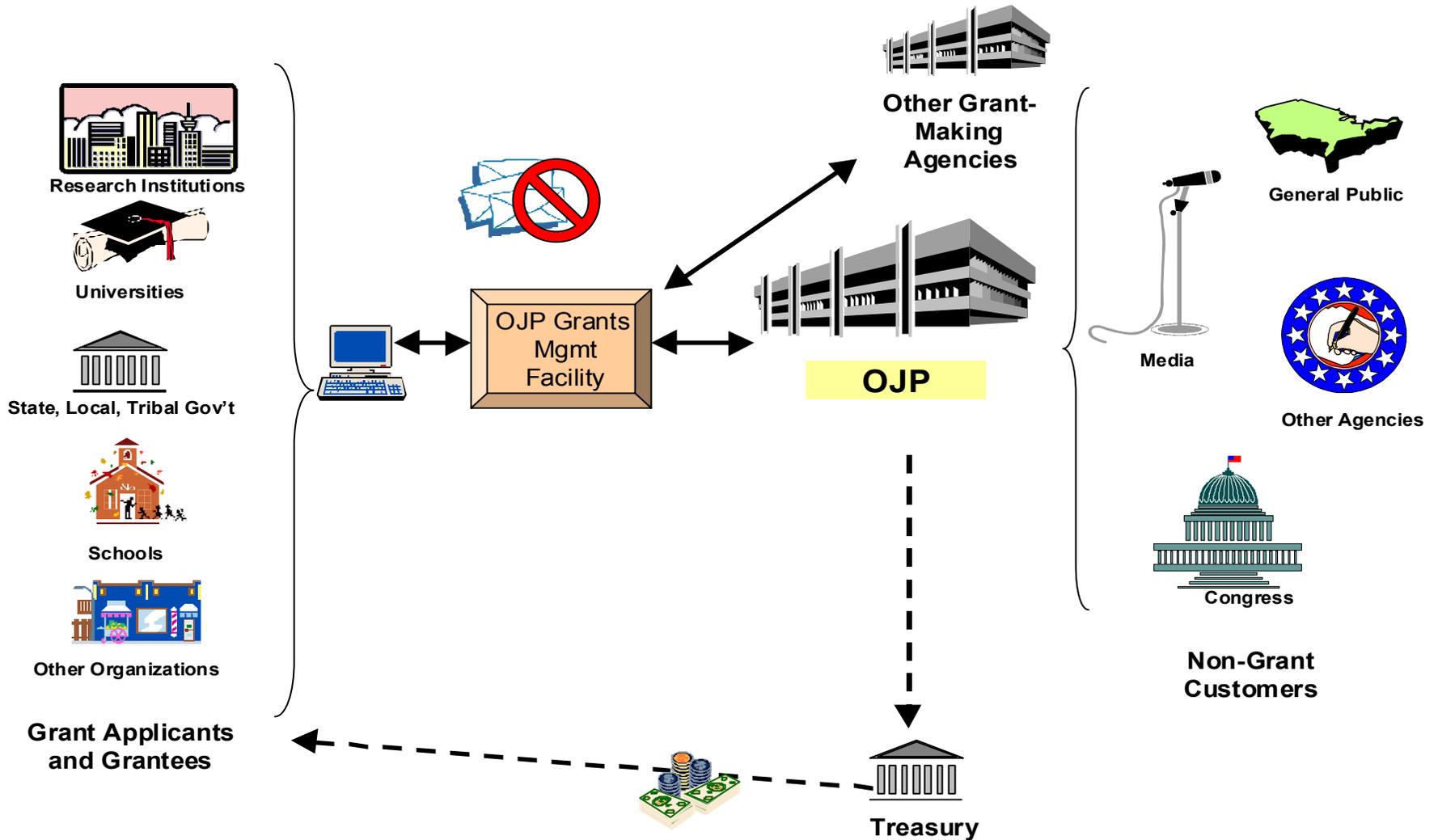
#### ***To-Be***

The primary difference in the “To-Be” environment is that OJP becomes the primary source for grant processing within the government. In this scenario the grant applications and communication will flow through OJP’s Grants Management Facility. This Facility will administer the grant applications for OJP as well as other grant making agencies within the government.

# OJP High-level Operational Concept Description (OV-1) "As-Is"



# OJP High-level Operational Concept Description (OV-1) "To-Be"



## Operational Node Connectivity Description (ONCD)

### ***Product Guidance and Characteristics***

The Operational Node Connectivity Description (ONCD) emphasizes the nodes or node types and the information exchanges between them. *Nodes* represent an element of the architecture that produces, consumes, or processes data. An *operational node* is a node that performs a role or a mission. *External Nodes* are operational nodes that send information to or receive information from the architecture's nodes but are outside the scope of the architecture itself; i.e., they do not perform the architecture activities. The activities from the Activity Model that are performed at each node are also shown. Information exchanges between nodes are collectively represented as *needlines*. Needlines simply indicate the need to transfer information from one node to another without specifying the path the information takes or the systems used. The information to be exchanged over the needlines is described in more detail in the Operational Information Exchange Matrix. As the activity model is being developed, an awareness of the nodes or node types and the information exchanges develops. The Operational Node Connectivity Description is developed from this awareness, then iteratively refined along with the Activity Model as activities are associated with the nodes and as the information exchanges become more evident. See *DoD Architecture Framework Version 1.0 DRAFT Volume II: Product Descriptions*.

### ***Product Discussion***

#### ***As-Is***

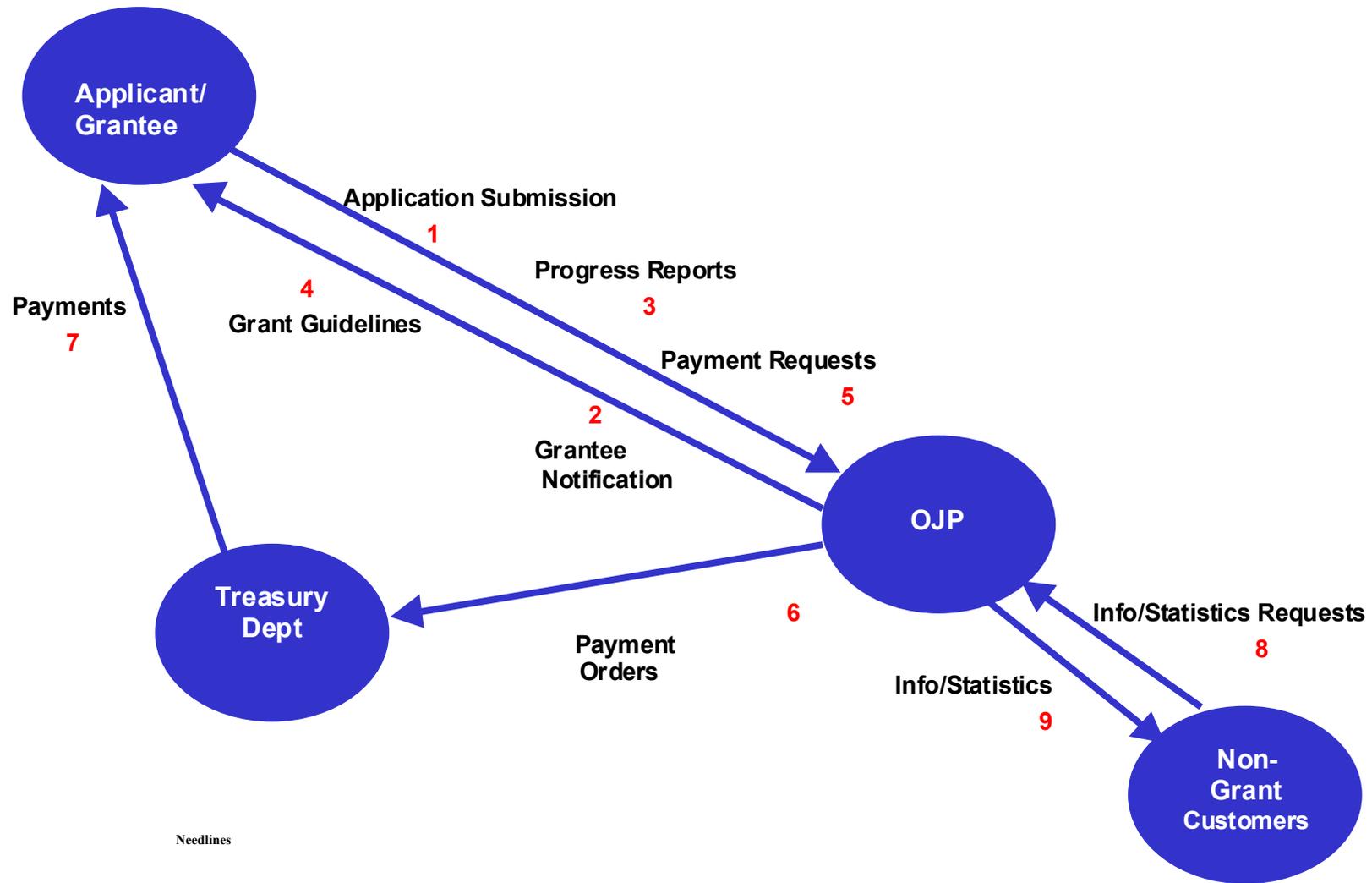
From the perspective of its human users—the applicants, grantees, and grant making agencies—there are four node types in the Office of Justice Program's model.

- The *Applicant/Grantee* node type represents research institutions, universities, state and local governments, tribal governments, non-profits, small businesses and others. This is the group that applies for and may receive and report on OJP grants.
- The *OJP* node represents the 10 Office of Justice Programs that solicit grant applications, accept and review applications, make funding awards, administer grants, and perform other non-grant related activities, such as statistical collection and reporting.
- The *Non-Grant Customers* node is other entities external to OJP who request such things as statistics and published reports from OJP.
- The *Treasury Department* node is shown because payment orders flow through Treasury and the actual payments to Grantees are issued by Treasury.

### ***To-Be***

There are two additional nodes in the “To-Be” Node Connectivity Description.

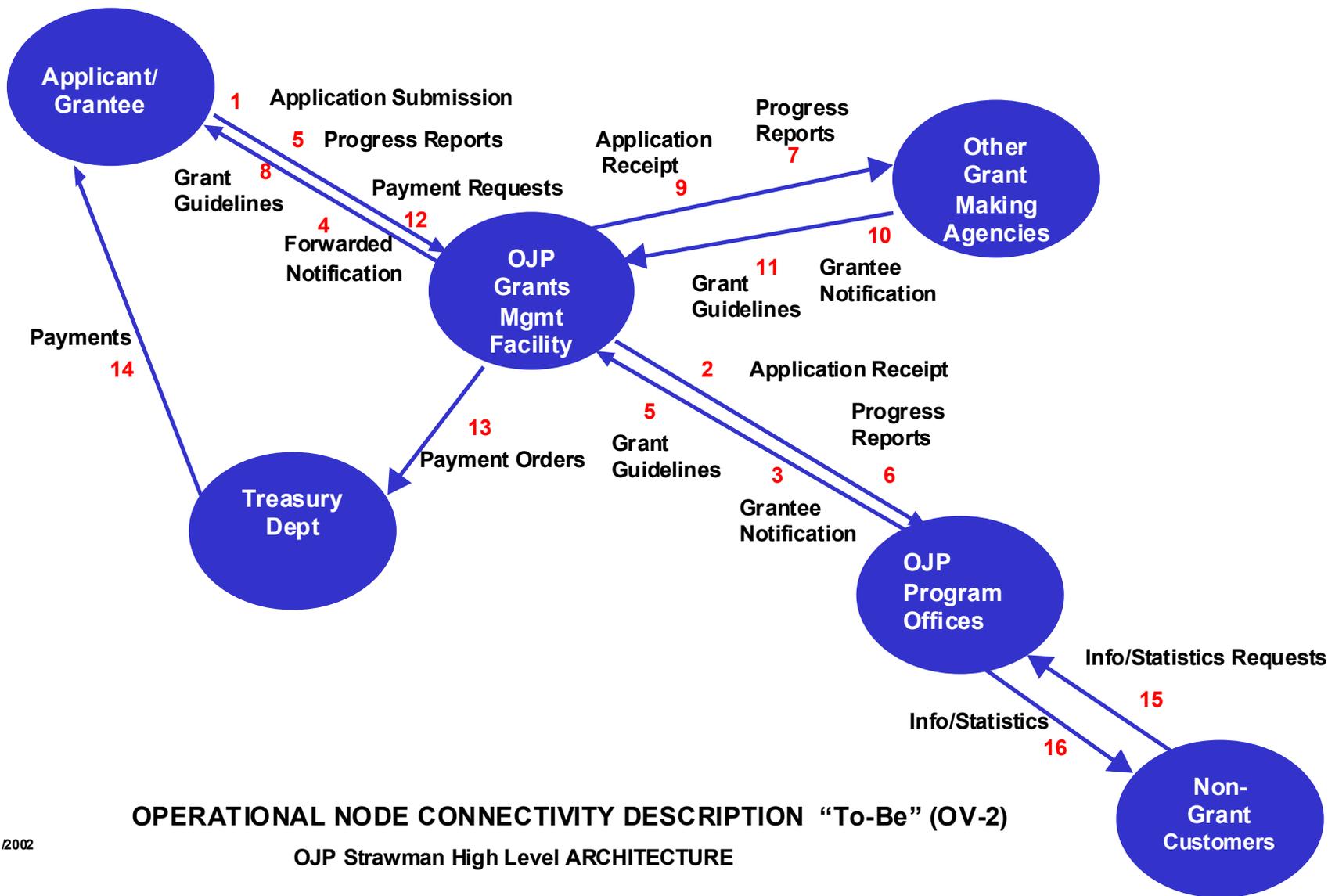
- The OJP Grants Management Facility which will administer grants for both OJP and other federal grant-making agencies. All submissions, notifications, requests and reports will flow through the Grants Management Facility.
- Other Grant Making Agencies is the last node. This represents all other agencies that will use the OJP Grants Management Facility to administer their grants.



Needlines

**OPERATIONAL NODE CONNECTIVITY DESCRIPTION "As-Is" (OV-2)**  
**OJP Strawman High-Level Architecture**

08/01/2002



**OPERATIONAL NODE CONNECTIVITY DESCRIPTION "To-Be" (OV-2)**

**OJP Strawman High Level ARCHITECTURE**

08/01/2002

## **Operational Exchange Matrix**

One product, which is not depicted in this document is the Operational Information Exchange Matrix (OV-3). This is an Essential Product, which could be developed to provide further detail when after validation of the other models.

Information exchanges express the relationship across three basic entities (activities, operational nodes and their elements, and information flow) with a focus on specific aspects of the information flow. Information exchanges identify *who* exchanges *what* information with *whom*, *why* the information is necessary, and what degree of information exchange sophistication is required. The matrix describes relevant attributes of the exchange and keys the exchange to producing and using activities, nodes and needlines the exchange satisfies.

The specific attributes included are dependent on the objectives of the architecture effort, but may include the information media (e.g., data, voice, and video), quality (e.g., frequency, timeliness, and security), and quantity (e.g., volume and speed). Particular capabilities such as the security level of communications may also be captured for each exchange. The emphasis in this product is on the logical and operational characteristics of the information (e.g., what information is needed by whom, from whom, and when).

## **System Interface Description (SID)**

### ***Product Guidance or Characteristics***

This diagram helps link together the owner's perspective and designer's perspective by depicting the assignments of specific systems and their interfaces to the nodes and needlines described in the Operational Node Connectivity Description.

### ***Product Discussion***

The Office of Justice Programs System Interface Description (SID) shows systems nodes (ovals), systems resident at these nodes (rectangles within ovals), and links (lines) between systems at different nodes using Internet connections. (The diagram does not show links between systems within the nodes.) The Internet is represented on the diagram by the background grid of pale, thick lines. The links that use the Internet attach to the grid. All the links are color coded to indicate the needlines they implement and the endpoints of interest for the links that include the Internet. That is, a connection to the Internet makes communications possible with every other system connected to the Internet. However, in this diagram, we are only concerned with the links to other specific systems or nodes as required to support OJP business functions.

### ***As-Is***

The systems nodes shown in the SID are generic. The exact systems that an Applicant/Grantee or Non-Grant Customer would have are unknown and probably irrelevant. The only systems that are relevant for the OJP SID are the e-mail and firewall in each node. The ASAP system shown in the Treasury node is the Web front end for processing payment orders. The systems shown in the OJP node have all been identified as relevant to the grants management process.

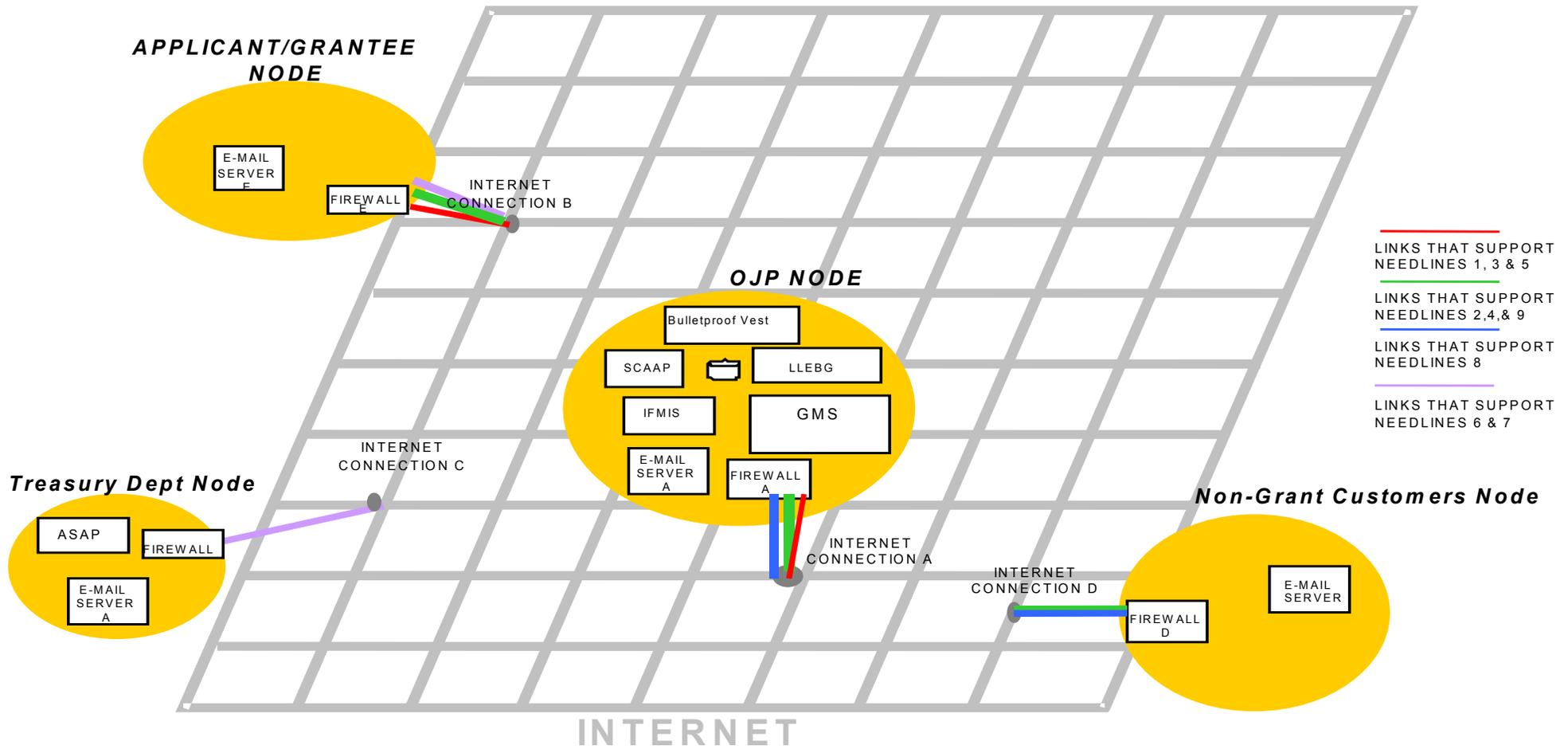
### ***To-Be***

The systems nodes in this diagram are generic examples since there is a large range of possibilities for systems configurations at both the Applicant/Grantee and Other Grant Making Agency nodes and the specific requirements for the Grants Management Facility node(s) are still being developed. Examples of potential configurations for high technology Applicant/Grantee and Grant Making Agency configurations are illustrated in the diagram. There could be multiple systems nodes supporting both Applicant/Grantee and Grant Making Agency business activities for some Applicants/Grantees and some Grant Making Agencies. In the “To-Be” state, note that GMS moves out of the OJP firewall and would be the primary system for the Grants Management Facility. The systems Bulletproof Vest, SCAAP, and LLEBG would be encompassed within GMS and are not identified separately.

Open issues that remain for the SID include security and capacity (both communications bandwidth and storage) for OJP Grants Management Facility and the exact functional capabilities required for connection to the Grants Management Facility at the Other Grant Making Agencies node.

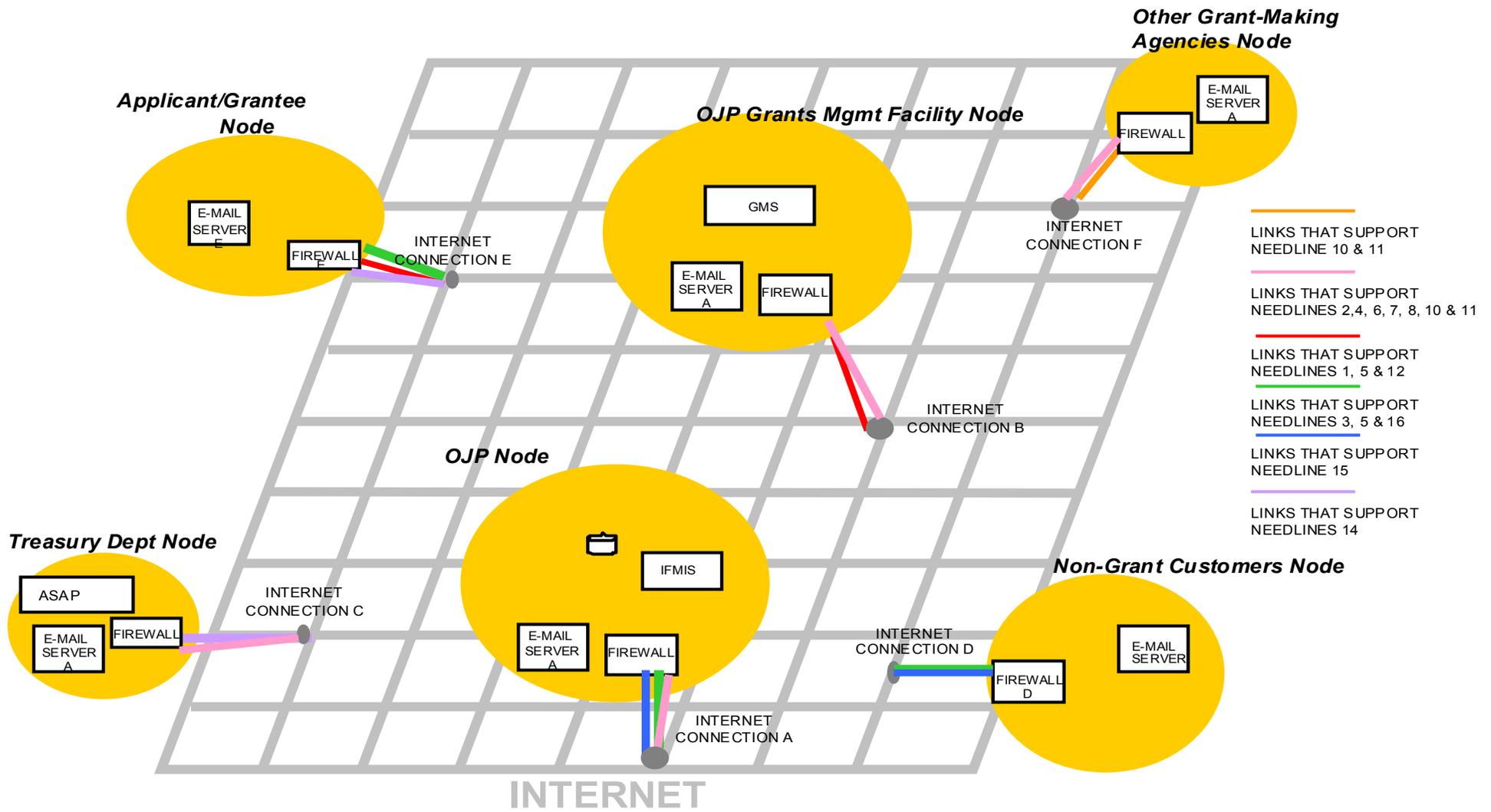






**SYSTEM INTERFACE DESCRIPTION - INTERNODAL PERSPECTIVE**  
**OJP Strawman High Level Architecture "As-Is" (SV-1)**

08/01/2002



**SYSTEM INTERFACE DESCRIPTION - INTERNODAL PERSPECTIVE**  
**OJP Strawman High Level Architecture "To-Be" (SV-1)**

08/01/2002

## Technical Architecture Profile

### *Product Discussion*

The Technical Architecture Profile is focused on the standards needed for connectivity and interoperability. This draft is based on the categories found in the Federal Commons Pilot Architecture, combined with the standards named in the Department of Justice (DOJ) Technical Reference Model (TRM) Standards Guidance dated December 17, 2001. There may be additional categories to add to the profile. Standards highlighted in blue were named in the Federal Commons Pilot Architecture, but could not be cross-referenced with the DOJ TRM. It is possible that alternate standards exist in this category at either the OJP or DOJ levels, and need to be confirmed.



## Technical Architecture Profile (TV-1)

Office of Justice Programs Architecture

| SERVICE AREA         | SERVICE                 | STANDARD  |
|----------------------|-------------------------|---|
| Support Applications | Web Applications        | Internet Explorer Version 4.X or better   |
|                      |                         | Netscape Version 3.X or better  |
| Data Management      | Business Data Standards | Data Universal Numbering System (DUNS)  |
|                      |                         | ZIP Code Directory  |
|                      |                         | Congressional District Identifier   |
|                      |                         | ISO 3166: ISO 3166-1 (1 October 1997) and ISO 3166-2 (15 December 1998) (Codes for the Representation of Names of Countries and Their Subdivisions) |
|                      |                         | U.S. State Codes and Territory Codes  |
|                      |                         | Catalogue for Federal Domestic Assistance Program   |
|                      |                         | Electronic Grants Data Elements   |
| Data Interchange     | Document Interchange    | XML Specification, W3C, V1.0:2000 (Extensible Markup Language)  |
|                      |                         | Hypertext Markup language—W3C V4.01:1999  |
|                      |                         |   |
| Communications       | World Wide Web Services | IETF RFC-2616 Hypertext Transfer Protocol—HTTP/1.1, June 1999   |
|                      | Electronic Mail         | IETF Standard 10/RFC-821/RFC-1869/RFC-1870 Simple Mail Transfer Protocol (SMTP) Service Extensions, November 1995                                   |
|                      |                         | IETF RFCs 2045-2049 Multipurpose Internet Mail Extensions (MIME), November 1996   |

## Technical Architecture Profile (cont.)

Office of Justice Programs Architecture

| SERVICE AREA           | SERVICE             | STANDARD   |
|------------------------|---------------------|--|
| Communications (cont.) | Transport Services  | IETF Standard 7/RFC-793 Transmission Control Protocol, September 1981  |
|                        |                     | IETF Standard 6/RFC-791/RFC-950/RFC-919/RFC-922/RFC-792/RFC-1112 Internet Protocol, September 1981   |
| Distributed Computing  | Object Services     | Common Object Request Broker Architecture (CORBA) Version 2.3 Object Management Group (OMG) document formal/98-12-01, June 1999 (Proposed) |
| Security               | Authentication      | <b>FIPS-PUB 112 Password Usage, 30 May 1985</b>  |
|                        | Security Algorithms | FIPS-PUB 186-1 Digital Signature Standard (DSS) Digital Signature Algorithm (DSA), December 1998 (Proposed)                                |
|                        | Web Security        | Secure Sockets Layer (SSL) Protocol Version 3.0, Netscape, 18 November 1996  |
|                        |                     | IETF-RFC 2246 The Transport Layer Security (TLS) Protocol Version 1.0, January 1999 (Proposed)   |
|                        |                     | <b>IETF-RFC 2467 SMTP Service Extension for Secure SMTP over TLS, January 1999 (Proposed)</b>  |

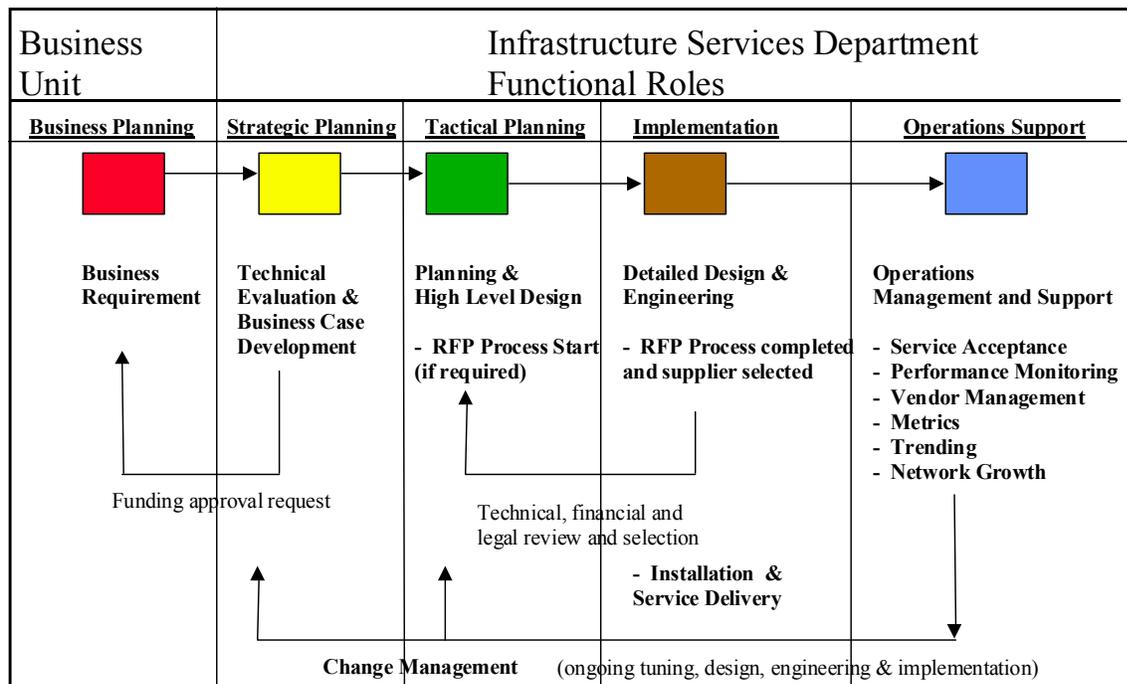
## **Appendix 6: Evergreen Process and Best Practice Technology Refresh Guidelines**

## Evergreen Process & Best Practice Technology Refresh Guidelines

### **High-Level Process Definition**

Evergreening is the process of regularly updating or upgrading something to keep it “fresh” or current. The evergreening process provides for “continuous planning” of OJP’s business strategy. OJP, in conjunction with the OCIO, should perform a periodic review (i.e., at least annually) of the strategic plan to ensure that it is meeting the goals & objectives. New technologies, changing business priorities and fluctuations in staffing skill mix or levels can all change OJP’s approach to information technology. Specifically, the group should review and address the following:

- Staffing level and skill sets vs. planned information technologies choices (i.e., do we have the right skills to support the new environment?)
- IT choices vs. business mission and business drivers (i.e., do the IT choices support business operations for OJP?)
- Strategic technology choices (from the IT Business Plan) vs. business mission and business drivers (i.e., does the strategy direction support the business vision for OJP?)
- Migration plan (i.e., does this plan represent the direction in which IT should be going?)
- Acquisition strategies (i.e., lease vs. buy, outsourcing, etc.)



The above graphic illustrates a “Work Flow” Model approach. It can be “tuned” to meet OJP requirements.

### **Business Unit Support by OJP IT Services**

- Articulates business or departmental request for service
- Major business requirements may include,
- Development and roll out of a new application
- Providing Web access to a new application

### **Planning**

- “Looks upstream” to the business unit
- Translates the business need into a technology solution
- Develops high-level cost estimates
- Passes this back to the business unit for review and approval to proceed
- On approval the requirement comes back in to strategic planning function
- Together with the tactical planning function develop high-level design requirements.

### **Tactical Planning**

- Refines this design
- Develops an RFP and conducts the sourcing effort.

### **Tactical Planning and Implementation**

- Work together through an iterative process to refine the design and through the sourcing process, select a vendor.

### **Implementation**

- Transition of the new service into the enterprise network infrastructure
- Work closely with the operations support
- User acceptance testing
- Commissioning of the new service to operational readiness.

### **Operations Management**

- Responsible for the “care and feeding” of the network
- Management of vendors that deliver and support the infrastructure
- Operational metrics from this process feed the Capacity Planning and Change Management process.

### **Capacity Planning and Change Management**

- “Closed loop” process

- Elements collected and the operational metric feeds flow “upstream” from network operations back to tactical planning (and strategic planning)
- Ensures that OJP meets internal SLAs
- Enables accurate and timely capacity planning.
- Information and operations management flow is leveraged to support a well-documented change management process.

## ***Evergreen Governance***

It is important to include “evergreening” concepts in an IT Strategy in order to provide refreshment mechanisms as new business conditions warrant. Implementing governance bodies also provides processes and mechanisms for the handling of requests to refresh, upgrade, or simply replace an application or infrastructure element. If a process is already in place, these requests can be assessed in a systematic fashion.

Gartner recommends that OCIO utilizes existing decision-making groups and processes until gaps or issues arise preventing the accomplishment of evergreening objectives. It is Gartner’s understanding that the Corporate Users Group (CUG) and IOP can be utilized to achieve evergreening objectives, although defined charter and processes used by these groups were not available during the development of the ITSP.

Conceptually the following groups are key participants in the evergreen process and it is believed that the CUG and IOP can function in these roles:

CUG: This would be the highest level decision-making body with regard to architectural specifications. It is composed of managers representing all divisions and functions.

Their tasks and responsibilities would be:

- Support the Executive Committee decision-making on strategic directions.
- Set corporate IS policies, procedures and standards based on proposals made by the IOP
- Challenge and consolidate OJP unit strategies and promote synergies
- Act as a final arbiter for inter-office and local IT service conflicts
- Act as an information sharing forum with regular meetings

IOP This group would present recommendations in the field of architecture as the basis for decision-making by CUG. It is composed of one delegate from each major function and office/bureau within OJP. Led by the manager of IT Architectures. Tasks and responsibilities would be:

- Assess the current environment in specific technical areas
- Review, validate, assess impact and evaluate consistency of proposals in the review process
- Present recommendations to CUG as basis for decision-making
- Highlight areas of potential improvement

The OCIO is responsible for monitoring emerging technologies and applicability for OJP.

When requests come in from the program offices to replace existing systems, OJP should use the following model as appropriate in order to quickly and appropriately assess the viable options for any given package.

During the tactical time frame (zero to two years):

- Establish a project sponsor and cross-functional project team to address the replacement of the system
- Perform a COTS review of available products with similar capabilities to the legacy system
- Document findings from COTS assessment and determine whether a COTS package is a viable option for OJP
- Document functional scripts for a product demonstration
- Document technical architecture requirements (to conform with OJP ITSP and enterprise architecture)
- Consider a technology upgrade through use of an external service provider (ESP)/systems integrator (SI)
- Provide an RFP to several ESPs/SIs with:
  - Formal documented functional requirements for the existing system
  - Documented technical requirements for the new system (Web-enabled, etc.)
  - Issue the RFP to a short list of ESPs/SIs with capability
  - Solicit bids and schedule vendor oral presentations
  - Perform evaluation of ESPs/SIs proposals
  - Analyze cost proposals
  - Select ESP/SI based on best value to OJP
  - Develop service level agreement (SLA) for replacement system project (performance-based contract)
  - Negotiate contract and award
  - Plan for Data conversion and system implementation
  - Initiate project with deliverables at least every six months.
    - Determine immediate integration needs with other systems in OJP
    - Perform annual review of contractor performance vs. SLA, adjust as necessary.

In the strategic period (two to five years):

- Determine additional integration needs for the OJP
- Perform annual review of contractor performance vs. SLA, adjust as necessary
- Plan for the evergreening of technology using best practices

If the CUG and IOP are continuously issuing multiple exceptions to architecture standards and guidelines, this should trigger an in depth analysis of architecture attributes and become part of the “evergreening” process. Perhaps the standards need revision earlier than planned due to technological advances.

Evergreen best practice refresh guidelines are located in the Appendix of the ITSP

### **IT Refresh Best Practices**

Evergreening is required for all types of technology, according to varying schedules. The following section includes best practices for Desktops, Networks, Telecommunications Infrastructure, Servers, Software/Applications, and Personnel.

#### **Desktops**

Commercial best practices recommend that enterprises segment their users based on computational needs. Users who use desktops for generic applications such as word-processing, e-mail, Internet, etc. should be classified as low end/mainstream users. Users who require specialized applications and processing such as engineers, financial analysts, scientists, developers, etc should be classified as high end users.

#### **Refresh Recommendations**

Gartner recommends that for low-end users, enterprises should adopt a four-year useful life for their PCs. High end users’ PCs should be refreshed every three years or less. Gartner estimates that by 2004, 75% of all enterprises will adopt a four-year PC desktop replacement strategy for up to 85% of their users (0.7 probability).

#### **Additional Best Practices**

Enterprises should have a PC retirement policy. After the useful life of a PC is reached, it should be removed from the environment and not re-deployed to a low end user. It is estimated that each re-deployment costs between \$300—\$1000 per PC per user. Mobile PCs are fragile devices and undergo a lot of abuse. Best practices for high end user is a refresh cycle of three years or less, and up to four years or less for low end users.

#### **Networks**

Business networks are the foundation for an organization’s computing infrastructure. As such, networks can be, and are usually the first sources of bottlenecks if not managed properly.

There really is not a set timeline for upgrading networks. Networks need to be constantly monitored and managed to ensure uptime.

All upgrades should meet the requirements of the new growth (short and long-term), technology, and applications that will be supported by the new backbone. Upgrades should be proactive in nature following a long-term strategy. Although a proactive upgrade may have higher initial costs, long-term costs are generally lower and will provide the network the flexibility to handle voice, video, and mixed-media applications without further changes.

Network refresh should be done from a feature standpoint, capacity standpoint, and a skills standpoint. Usually a good planning timeframe for long-term strategy is 5 years, which is the expected life span of most IT products. In order to monitor the capacity of networks, network monitoring and metrics is critical to any capacity planning and network optimization study.

Networks should be monitored for: Latency, Redundancy, Delay, Mean Time to Restore (MTR), Utilization, and Availability.

#### Refresh Recommendation

As a general best practice, if the networks reach 50-60 % of utilization, bandwidth increases will be needed soon as the spikes in demand will start reaching the capacity limitations of the network.

#### Additional Best Practice

- OJP should engage in a performance monitoring and management process for its networks in order to be proactive in its network management approach.

### **Telecommunications**

Telecommunication infrastructure for providing voice communication both internally and externally is critical. Voice Telecom infrastructure can be broken down into the following topology that needs to be maintained and refreshed on a timely basis:

- Switches: PBX, IP PBX
- Topology: Leased lines, dedicated lines, VPN, VoIP
- Vendors: PTTs, local carriers

Although the technology elements have a low refreshment cycle, these items need to be monitored and managed on a yearly basis. OJP should evaluate the status of its voice telecom infrastructure at least once a year and examine the costs of both long distance and regional services as rates tend to change often.

The following trends and criteria can be used to measure the status of the voice telecom infrastructure:

## Switches

- Switches usually have a life span of 3-5 years. Consider an upgrade when technology starts maturing (especially VoIP technology). Switches should be measured for application throughput requirements, features, functionality, vendor viability, and standards supported.
- PBX: A PBX has a useful life that ranges between 5-10 years depending upon features and functionality. Frequent PBX upgrades are rare and are usually performed to take advantage of special functions and features that are critical to the organization.
- IP PBX: This is a new breed of PBX's that work with VoIP technology. This technology is not mature and should be monitored before broad scale deployment.

## Topology

- Leased lines: Most leased lines from national carriers have demand enabled capacity that can be expanded or reduced based on demand requirements. A yearly monitoring cycle to determine the requirements for leased line capacity is recommended.
- VPN: Remote Access Service requirements determine the refreshment of VPN services. Usually these services are not refreshed from a technology perspective but may be done due to a vendor cost perspective.
- VoIP: This is a new technology that will probably not be ready for organization wide deployment for the next 2-3 years. OJP should continue to monitor this technology to better understand its advantages and limitations prior to implementation.

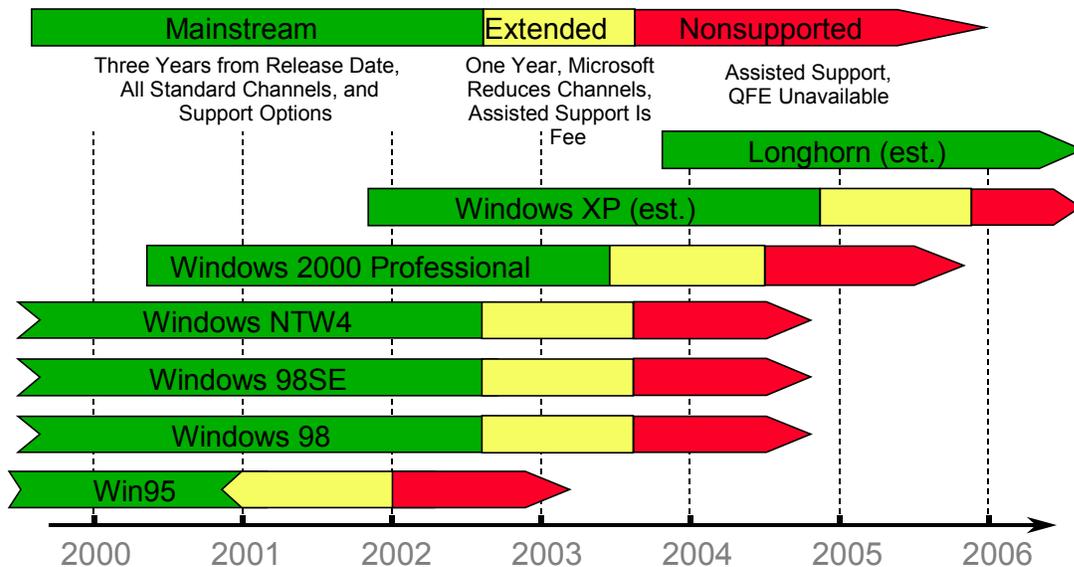
## Vendors

- Vendors need to be managed from a long-term perspective. A sourcing strategy should be in place for managing vendor relations. OJP should initiate a vendor management process that evaluates the vendor's costs, SLA performance, viability, market presence, and issues on a yearly basis. The goal should not be vendor replacement, but vendor management for services. A long-term commitment from both the vendor and OCIO is essential for good vendor performance and low cost.

## **Servers**

Low end Windows servers used for file and print services, low end network services, etc can and should be upgraded based on the upgrade cycle of the OS that is being run on them. Microsoft has published its proposed schedule for OS upgrades and hardware refresh cycles should mirror the OS upgrade. However, all critical Windows servers should be refreshed every three years or less.

# Microsoft Client OSs — A Four-Year Life Cycle



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**Gartner**

Unlike desktops, enterprise servers are usually not refreshed frequently. Enterprises have few resources to replace servers that are working fine. As a generic rule, “If it performs well....don’t change it.” Usually IT assets have a life span of 3-5 years. However server refreshments can have a shorter or longer life span. Today’s enterprise servers are usually robust machines that add on features to add additional functionality and improve memory, processor speed, storage, additional disks, etc.

Gartner recommends that prior to refreshing a server, the following criteria be evaluated:

**Operating System:** When upgrading a machine to a new version, due consideration should be given to the OS to see if the applications running on the old server can be hosted on the new server OS. If not, an old version of the OS may have to be installed which may not be possible for older versions.

**Consolidation:** Opportunities for server upgrade usually are present during server consolidation projects or data center moves. If such a project is about to be initiated in the enterprise, the server under consideration can be selected as part of the project.

**Performance:** The server’s should be monitored to measure its performance. Metrics such as Mean Time Between Failure (MTBF), throughput, MIPS consumed, etc.

- **Platform viability:** Are there any hardware or software components that are critical to the server that are or soon will be no longer formally supported by the vendor. Business critical applications should not be run on unsupported platforms.

- **Skill viability:** Does the platform skill requirements match the strategic skill set of the enterprise. If not, then the server can be a candidate for replacement with a server that fits the strategic skill set of the enterprise.
- **Application support:** Does the new version of the application that resides on the server still support the server?
- **Third Party Software:** Often migrating to a new and more powerful processor can lead to increase in licensing costs of third party software that is to be installed on to the new server. This is especially true for software that uses the processor processing speeds for calculating the price of the software license.
- **Price/performance:** Do new servers improve price/performance numbers significantly to justify the refreshment of the server.
- **Features:** Does the new servers have features that will maintenance, reduce costs, improve performance, provide additional functionality, etc.
- **Vendor Viability:** The vendor's financial health, market penetration, market performance, R&D, position in the industry, take over scenarios, etc. should be monitored.

### Software/Applications

Applications are written for specific business processes that change over time due to the changes in technology and changes in the way business is conducted. It is recommended that applications, especially custom-built applications, be evaluated on a yearly basis against the following criteria:

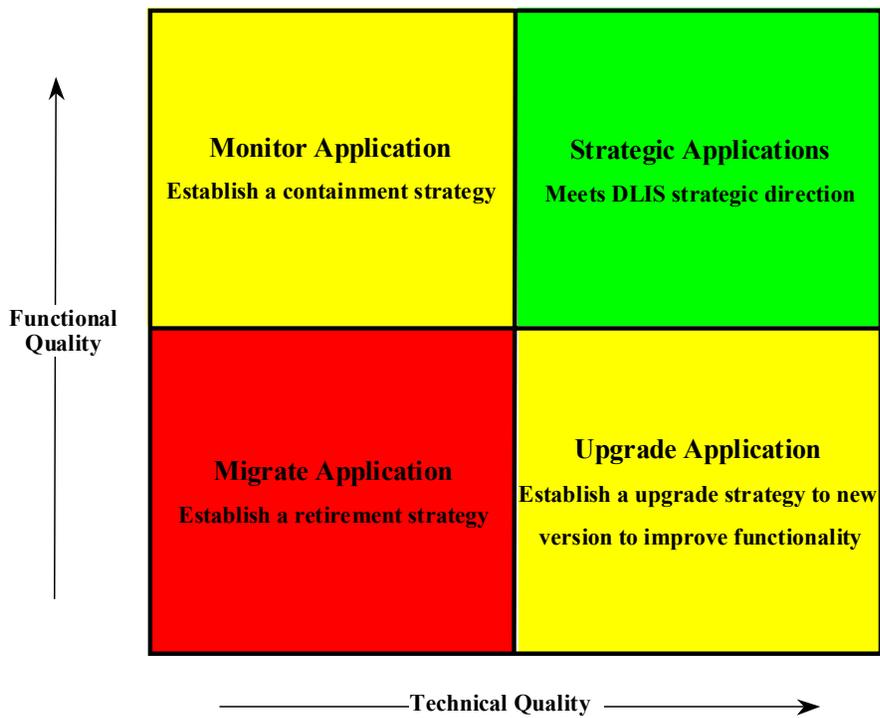
- **Programming languages:** It is difficult to staff and maintain applications written in older languages
- **Platform viability:** Is the platform on which the application is based on still a viable platform in the market
- **Vendor:** What is the long-term viability and vision of the vendor
- **Business Value:** Does the application still support the business or are employees hampered by the application resulting in manual processes and inefficient use of time
- **Functionality:** What kind of functionality does the application provide in today's environment
- **User interface:** Can the application support a thin client Web based user interface
- **Life span:** Legacy (custom) applications usually have a limited life span that is often surpassed in Government agencies.
- **Flexibility:** Does the application provide the flexibility to be changed frequently due to federal mandates or does it require a large scale programming effort

- **Maintenance:** Gartner estimates that between 60 -80% of an average company's IT budget is spent on maintaining existing mainframe systems and the applications that run on them.
- **Performance:** The application's performance should be measured to see if it is at an acceptable level.
- **Risk:** Each application should have a risk index associated with it to see the measure of its criticality to the organization. Mission critical applications should be evaluated for migration if the risk of failure due to some of the points mentioned above is high.
- **TCO:** Enterprises should determine the true cost of ownership of a legacy application that provides a benchmark for the true cost of the application beyond what is spent on maintenance budgets. This benchmark should be compared against the TCO of a modern application to determine the basis of a business case for modernization

Packaged applications follow their own cycle for refreshment or upgrade. This life cycle depends upon the following:

- **Vendor upgrade lifecycle:** Usually different vendors upgrade their applications based on the successful release of new versions. It is recommended that although minor releases to the right hand of the decimal point are not critical, enterprises should evaluate all releases to the left side of the decimal. Each packaged application should have a risk index associated with it, and those applications that have a significant gap between the latest release of the software and the in house release should be evaluated and monitored.
- **Vendor Viability:** The vendor's financial health, market penetration, market performance, R&D, position in the industry, take over scenarios, etc. should be monitored.
- **Platform:** Usually packaged applications run on platforms supplied from different vendors. The platform should be evaluated to see if it is current in the market and strategic to the enterprise.
- **Technology trends:** The application should be evaluated to see if the version is consistent with the current technology trends. (e.g., packaged applications running in a client server environment are candidates for upgrade to a newer version that provides a thin client environment even without a lot of functionality change).

OJP should engage in a process which reviews the critical applications in a timely manner based on the criteria suggested above with a view to determining the risk associated with each application and its migration/upgrade potential. OJP can use the following tool to evaluate the position of its applications.



- Functional Quality is:**
- support of business processes
  - ease of use
  - user interface
  - business value
  - vendor viability
  - TCO

- Technical Quality is:**
- ease of maintenance and modifications
  - performance of applications
  - support of business strategy
  - viability of current platforms
  - technology trends

## **Personnel**

The plan for keeping staff up-to-date on emerging technologies should be developed so that OJP is competitive with government and commercial entities. The strategy should include:

- Partnerships that will keep OJP ahead of the curve regarding emerging technologies.
- Schedule for keeping key IT personnel trained on latest technologies

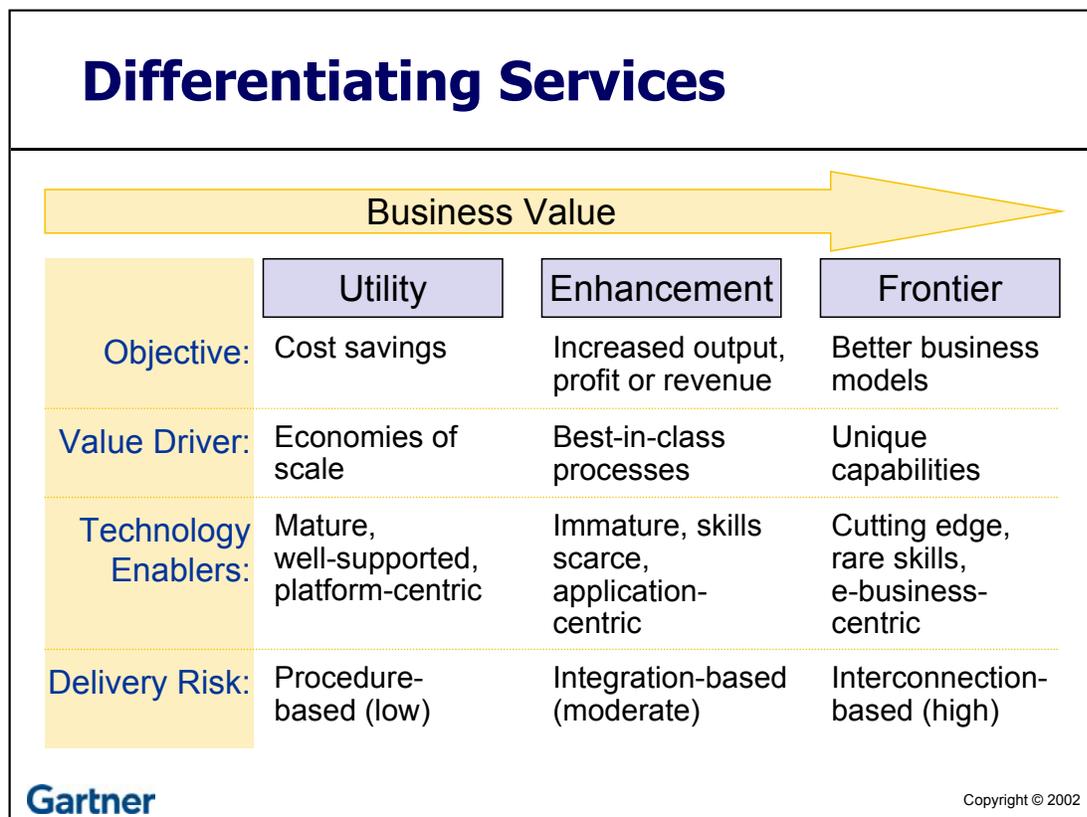
# **Appendix 7: OCIO Critical Success Factors**

## OCIO Critical Success Factors

There are several significant critical success factors that the OCIO must keep focused upon to be successful in the management and delivery of the key IT initiatives. Not only are these critical success factors key to the initiatives, but also are significant to turning the corner from being a utility IT service provider to becoming a strategic IT services partner. These critical success factors are:

- Transition from utility services to value-added services
- Management of contracts and relationships
- Managing service levels and expectations
- Design the OCIO organization for value

### Transition from Utility Services to Value-Added Services



The OCIO must continue to be aggressive in providing applications that provide more than utility functionality, while providing enhancement and frontier functionality. *Utility applications* are essential, but not differentiating. They may be mission-critical (e.g., payroll, HR) but don't improve enterprise performance. For utility applications, business value will be proven with traditional ROI analysis; the focus will be on hard returns and financial payback. Business value will be demonstrated with a combination of ROI-type analysis, and a demonstration of improved productivity (e.g., shorten processes time,

fewer people involved in the process). *Enhancement applications* are those that make the enterprise perform better than without the application. Better performance is measured in speed, convenience, reduced cost of business operations, working capital requirements, quality and others. *Frontier applications* are those that make a *major* transformation of business performance, that are intended to change the competitive landscape, and that tend to be risky at the outset For frontier applications, business value often will not be proven solely with financial metrics—it will be proven by the system’s enablement of better business models and the enterprise’s ability to superior service.

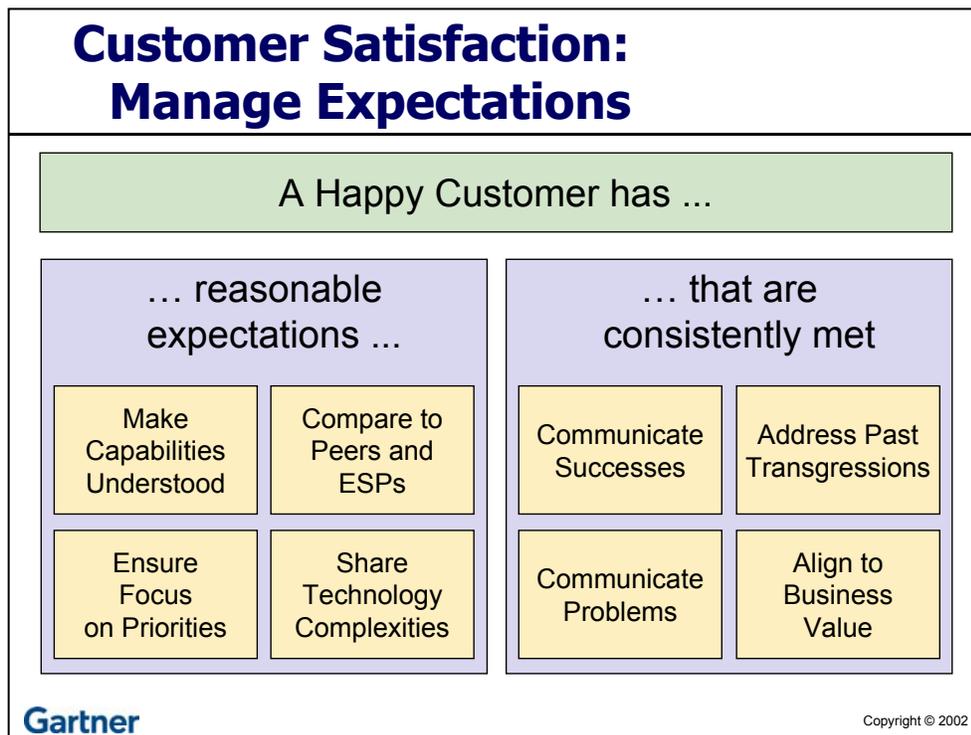
**Managing of Contracts and Relationships**



An effective communication plan is key to demonstrating the business value of IT. However, if you take 20 people who attend a meeting, you will get at least three versions of what was communicated in the meeting. As a result, communication standards and documented communication processes are needed to ensure a consistent message. In addition to documenting how communication between the OCIO and the business will occur, the communication plan should be proactive and marketing-focused. Communication should flow from OCIO back to the business, and the nature of the communication should be positive. Too many IS organizations assume that communication is a natural byproduct of ongoing interaction; it isn't. All parties involved—within the IS organization and the business—need to take communication seriously. Typically, the IS organization will have a separate communication plan for each major initiative. The communication plan will be customized based on the type of application (utility, enhancement or frontier), and will consider who the stakeholders are and how best to keep them informed.

Another point that the OCIO should focus on is establishing and maintaining better relationships with OJP Office Management. Business value is closely tied to the perceptions of customers, and those perceptions will be more positive if OCIO managers become management insiders. This means learning the language of the business and understanding the culture of the management team (are they collegial or collaborative?). It also means actively participating in that culture. Understanding the language of the business will require OCIO managers to think like the key stakeholders, and focus on the stakeholders' problems and issues *from their points of view*. The next step is for OCIO managers to engage in social interactions outside of working hours. It's important that the OCIO manager be seen as a person (not a role)—and has the same kinds of interests and issues as his or her business unit counterparts. If personal contact is limited to the office, it will be difficult—if not impossible—for the OCIO outsider to become a management insider. Once the OCIO manager becomes a management insider, he or she may make suggestions and won't be viewed as a threat or an enemy. At this point, the OCIO manager has great potential to influence the business managers' expectations, thereby making it much more likely that the OCIO will meet those expectations—in turn strongly enhancing credibility.

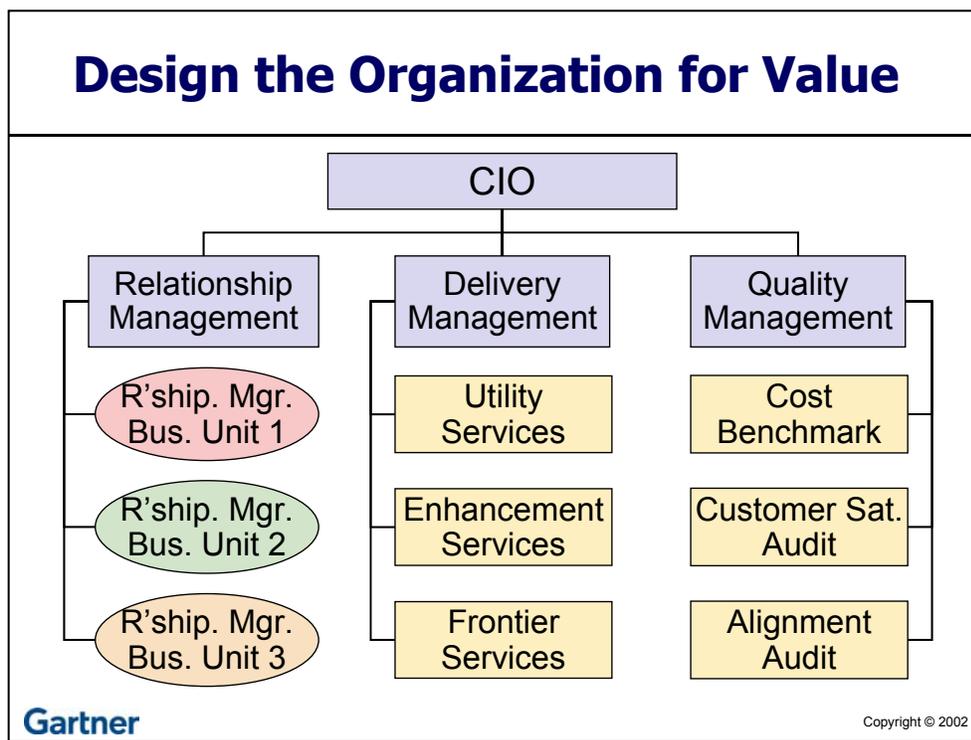
**Managing Service Levels and Expectations**



Closely tied to communication is the management of customer expectations. Often, when the OCIO credibility and the business value of IT are being questioned, the culprit is a misalignment between customer expectations and IS capabilities. There are two key elements to managing customer expectations. First, the expectations of the

customer must be reasonable. That is, they must be in line with the OCIO capabilities, be consistent with the business priorities and be financially and technologically feasible. Customers will always want things from the OCIO organization that are impractical or impossible; it's the OCIO's job to make its capabilities understood in a way that does not put off the business. For instance, it is fine to reset a stakeholder's expectations on a wireless initiative because of a lack of product maturity and standardization. What's important in a case like this, however, is that the OCIO is not perceived as "shutting down" the bright business idea based on some technical glitch that the business stakeholder neither understands nor cares to understand. In a case like this, the OCIO is best served by pointing out that the business can roll ahead with the initiative, but by doing so, assumes a high-level of risk because of a lack of product maturity. The other key element of managing expectations is meeting them. This is largely about communication, but it also involves owning up to past transgressions.

**Design the OCIO Organization for Value**



Siloed organizations often struggle with demonstrating the business value of IT. In some organizations, silos have been replaced by a service/process-based structure with great success. To do this, three management roles are essential. (1) Relationship managers facilitate the realization of service value relative to expectations. They are the communication bridge between specific clients and the IS organization's broadly managed services. As such, these managers are pivotal to customer satisfaction, and the managers should be empowered to make reasonable commitments on behalf of the IS organization to resolve problems and enhance value. (2) Delivery managers are responsible for the effectiveness, efficiency and value of a given service across the

entire customer base. This includes managing gradations in service levels. They also ensure process efficiency and reliability across the entire range of services supported, and supervise day-to-day process execution via integrated process teams. (3) Quality assurance managers proactively monitor service and process outcomes in relation to service levels and self-imposed performance goals. They facilitate processes efficiency through proactive pattern recognition feedback to process and service owners. All three roles fundamentally require good business judgment to ensure that the value of a service does not exceed its delivery cost.