STRATEGIC INFORMATION SYSTEMS PLANNING:

A Template for Use in Public Sector Agencies

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Preface

What follows is a "template" for strategic information system planning (SISP) in public sector (state and county) agencies. Because many of you are experienced planners it is with some trepidation we put this before you — our research revealed nearly as many planning "approaches" or "philosophies" as there are planners (or academics who "study" it).

We tried to weave together the best aspects from the various approaches in a way that made the most sense based on our experience. We have walked a middle-line between rational, time-intensive, formal models and "shoot from the hip," quick and dirty approaches; the template process contains a model in which information, intuition, and discovery can peacefully co-exist. We believe the template is sufficiently malleable to be adapted by an agency to its unique situation and culture, while affording enough specific guidance and techniques to assist your planning efforts.

We paid close attention to initiatives in several states (especially Colorado, Florida, Minnesota, Oregon, and Texas) that have mandated SISP at the agency level. We de-emphasized aspects of those initiatives that tied planning directly to the budget process. Instead our planning model focuses on identifying relatively narrow areas for potential investment (business initiatives) that correspond to the agency's priorities and goals. An important output of the template's planning process is a list of prioritized, specific initiatives for action-oriented feasibility studies (as well as limits on the range of alternatives to be considered in each area). It is left to the feasibility studies to identify specific courses of action that will yield a high return. These more detailed studies will provide the project proposal grist for the formal budget process mill.

We examined, but did not particularly draw on, efforts by Federal government agencies in this area. Federal efforts seem substantially more bureaucratized and cumbersome than the State initiatives; we did not perceive that the required extra effort added substantial value. We believe the process outlined in the draft template will capture approximately 90% of the value for 30% of the effort.

We uncovered a (very) few counties and cities that have undertaken SISP — most have very progressive IT functions — but their processes were not documented well enough to provide much guidance. A survey is presently underway of Maryland counties to identify how they conduct information systems planning.

Until recently, the research literature on SISP was based on theoretical constructs, one-shot case studies, and surveys of IT directors and planners (ignoring chief executive and other organization managers). In the last few years, empirical studies of the efficacy of SISP in the private sector have suggested that the rational, formal planning models assumed by theory, are often not those that are used most effectively in practice (see especially Earl 1993; as well as Hann & Weber 1996 and Moynihan 1990).

Good SISP requires high quality information about the current state of existing IS applications and IT equipment. We recognize that certain pieces of relevant information may not be readily

available in all agencies. The template includes methods to quickly ascertain the most important aspects and allows the substitution of explicit expert estimates in other cases. Information planning should not be excessively delayed waiting for this information; in our view, the value of proceeding exceeds the cost of delay. (Because much of the missing information also would be useful in day-to-day decision making, steps should be taken to begin to capture and track this critical information.)

The missing current background information points to another concern as well — lack of mid-level administrative support in IT departments can impede effective decision making. As recent research literature reflects, the trend toward downsizing in mid-management may have inadvertently thrown out the baby with the bath (for example, see Floyd & Woodridge 1994). While the need for certain operational aspects (e.g., control and monitoring) of the middle management role has been reduced, the need for other traditional middle management functions, such as planning, recognizing strategic opportunities and alternatives, synthesizing information, and re-allocating resources to implement top management strategies, has not gone away. We suspect the comparative "youth" of IT Departments, as well as the focus on production among IT professionals, has contributed to the lack of "bureaucracy" in these departments. In several IT Departments with which we are familiar, the administrative function resides almost completely with the IT Director; other senior IT staff are primarily dedicated to production tasks. This is a situation that warrants further attention.

Introduction

The primary purpose of SISP is to better align the IS/IT function with agency goals and priorities. Stated simply, strategic information systems planning (SISP) involves:

- Assessing where you are.

- Envisioning where you want to be.

- Devising an implementable path to take you from "here to there."

An important benefit of SISP is the recognition by senior managers of emerging trends or themes, so that "flowers" can be nourished and "weeds" uprooted. In order to be successful in the long-run, the planning process should encourage strategic thinking and thoughtful reflection outside the press of day-to-day crises and deadlines.

Available research suggests three primary causes of SISP failure:

- *Lack of agency executive "buy-in" of the final product.* This happens when the agency executive does not directly participate in the process and either the planning team's (or consultant's) vision of agency mission and priorities are out of step with the executive's vision, or the "reach" of the SISP proposed projects exceeded the agency's fiscal "grasp."

- *The planning process takes too long or makes excessive demands on agency resources.* SISP processes that extend beyond one year and/or require excessive fiscal resources or time commitments by senior managers and users outside the IS/IT function rarely lead to implemented improvements, and all too often are never even completed

- *Lack of first-order benefits to other agency functions.* A SISP process which emphasizes outputs that will only provide "long run" benefits to other agency departments is unlikely to receive necessary support.

The SISP process outlined in this template addresses these concerns. The top-down, six month process is expected to lead to three primary benefits:

- *A shared understanding among the senior management team of the role of IS/IT in the agency.*

- *A recognition of existing IS/IT strengths to be exploited, weaknesses to be addressed, and identification of beneficial trends and patterns where additional investment and experience is likely to be rewarded.*

- *A prioritized list, based on agency goals, of tightly defined business initiatives where further investigation is most likely to lead to implemented IS/IT applications with a high return on investment.*

What SISP is Not

<u>SISP is unlikely to lead to fundamental changes in strategy.</u> Situations rarely call for dramatic shifts in course. SISP should not lead to change for the sake of change, nor is it a rubber-stamp for current directions, past actions, or preconceived notions of how things should be.

<u>SISP is not the final written document, a detailed implementation plan, or a budgeting exercise.</u> It is a learning process that should result in an improved, shared vision of the IS/IT function among senior managers and identification of a select group of potential business initiatives which, after further review, may afford opportunities for high returns on investment.

<u>SISP is not something that can be contracted out</u> to external consultants. The strategic plan must be "owned" by agency executives, critical stakeholders, senior agency managers, and senior IT staff. A consultant's report can be (and often is) rejected by agency executives and critical stakeholders. Although consultants may provide useful assistance at various points in the planning process, extreme care must be exercised lest the result be theirs and not yours.

<u>SISP is not a technical exercise</u> to create a unified data architecture or extensive, explicit models of all of the agency's business processes (at least not as the term is used here). Although such long-term, time, and resource intensive ventures may be worthwhile, they are not a part of the SISP process described here.

Participation

Given the practical problems of competing claims on the time and resources available for the planning process, we believe a top-down approach to developing the plan is most appropriate.

The IT Director inevitably serves as the hub in this exercise; this role is too important to be delegated to others. He or she must find a way to elicit "buy-in" and active, thoughtful participation in the process from the agency executive, critical stakeholders, senior agency managers, and senior IT staff. The IT Director also must take into account the needs of other groups, in particular end users and IT staff. The methods he or she uses to accomplish this will vary depending on agency culture.

We recognize the advantages claimed by those who support a bottom-up, fully participatory approach to SISP, but believe the costs outweigh them. Among those costs are the agency resources consumed (time and money), the necessarily extended duration of participatory planning exercises, and the tendency of such processes to reach consensus, rather than implementable decisions that provide a high return on investment.

There are, however, three key aspects of the process that require broader participation (in one form or another):

- An accurate assessment of the current situation requires careful attention to the concerns of a wider set of stakeholders, as well as the opportunities they may present. Alternate methods of eliciting such information will be considered below.

- Senior managers in agency departments directly affected by activities proposed in the plan must support those activities.

- If IT staff are not active participates in creating the plan, time must be taken to ensure they understand not only the activities they will be asked to perform, but also the rationale behind those activities. Giving each member of the staff a copy of the completed plan will <u>not</u> satisfy this concern.

Planning Horizon

The planning horizon usually adopted for strategic exercises in five years. In the case of SISP, however, we believe a variety of horizons must be used.

In terms of looking at long-term technology trends, envisioning the future, the appropriate horizon is between five and seven years out. The identification of long term trends is important because they help decide technology directions today. For example, with today's move toward client-server based systems and away from mainframe systems, an agency should carefully consider a variety of alternatives before upgrading existing, overburdened "big iron."

In terms of major technology and communications infrastructure systems, given the level of investment in such systems, and the time required for planning and implementation, the appropriate time frame is five years. For software applications and smaller technology systems, given the pace of technological and policy changes, it probably doesn't make sense to look much beyond three years.

Planning Team

Usually the IT Director will assemble a planning team comprised of the agency executive (or his or her direct designee), two or three senior managers from other agency departments, and the IT director and one or two senior members of the IT Department. The planning team also may include one or two representatives from important stakeholder groups such as oversight bodies.

The planning team should actively participate in the strategic reflection and formulation aspects of the process; they are responsible for approval of the direction and initiatives coming out of the exercise. The time required of planning team members is outlined in the next section.

Planning Process

It is useful to distinguish three stages in the planning process: pre-planning activities; formal planning; and post-planning activities. The SISP process discussed here can be completed in three months, although six months is more likely to be the norm. The process should not take over nine months.

As used here, the *formal planning stage* refers primarily to activities of the planning team. Given the constitution of the planning team (*e.g.,* the agency executive and selected department managers) it is important to minimize both the total amount of time each must expend, and the

amount of time spent in meetings. This is accomplished by having high-quality materials available for review by project team members prior to meetings.

Participation on the project team will require a total time commitment of between five and seven days. The time will be approximately equally divided between time spent in team meetings and individual preparation (review of draft materials) for those meetings.

A plausible meeting schedule for the planning team might include:

- A preliminary meeting (½ day) to review the "planning plan" and documents used for pre-planning activities, to review and discuss the draft statement of agency mission, priorities, and goals, and identify the organization's internal strengths and weaknesses, and external opportunities and challenges.

- A meeting (½ day) to finalize the statement of agency mission, priorities, and goals; review the draft status of existing projects, applications, and technology and the draft technology vision; clear up questions on descriptions of business initiatives; and, ensure all understand the process for prioritizing them.

- A meeting (1 day) to reach agreement on an initial priority list of potential business initatives to be thoroughly evaluated for investment.

- A meeting (2½ hours – ½ day) to finalize the prioritized list and review the draft of IT Department mission and goals.

- A final meeting (2½ hours – ½ day) to review the final planning document.

The first and last team meetings belong to the pre-planning and post-planning stages respectively. In some situations, they can be replaced by individual meetings between the IT Director and team members. The three middle meetings are part of the planning stage, and are best completed within a month (*i.e.,* they should be scheduled approximately 2 weeks apart).

Helpful Hint: A critical aspect of the IT Director's role is drafting key materials for project team review. In most cases, these materials are sections of the final planning document. We do not believe this task can be delegated, there is too much opportunity for "discovery" in the writing process. However, unless the IT Director is an extraordinary writer, a professional quality editor should be used to revise (and even re-write) the Director's preliminary drafts. In order to minimize the time required by planning team members, the materials they receive for review must be clearly and concisely written and in "final form."

The *post-planning stage* involves production of the final document, and explaining the document to interested constituencies. Depending on how you choose to implement the process, key stakeholders may be given an opportunity to comment on the penultimate draft.

Although it requires a minimal commitment by the planning team, the *pre-planning stage* will consume approximately two-thirds of the time and effort of the entire process. The pre-planning stage prepares the foundation for the rest of the process. It is discussed in detail in the next section.

Pre-Planning Stage Activities

The IT Director faces three critical challenges in *leading* the SISP effort during the pre-planning stage:

- *Keeping an open mind.* Above all SISP should be a learning experience for the IT Director; SISP is not an exercise to validate past activities and current directions. He or she needs to remain open to information that challenges the impressions and intuitions on which day-to-day operations have been based, and to recognize emergent trends and themes that will challenge the IS/IT function in the years to come. Despite the hectic pace, it is important that the Director take sufficient time for reflection during the process. Depending on his or her style, the Director may involve senior members of the IT staff, either formally or informally, in this aspect.

- *Managing stakeholder relations.* Beyond the obvious need to manage relationships with the agency executive and other members of the planning team, the IT Director also is responsible for providing a conduit for participation by other stakeholders. In particular, during the pre-planning stage the IT Director will elicit input from agency department managers and other key stakeholders, often in face-to-face discussions. This approach serves three purposes: it allows the Director to learn first-hand the agency's needs and challenges; it provides an opportunity for stakeholders not formally involved on the project team to have a sense of participation in the process; and, it shields the project team from excessive demands on their time. (Of course, it is the IT Director who must absorb the time demands to cushion the other project team members.)

- *Managing the process activities.* In addition to the two "minor" challenges presented above, the IT Director also must manage the logistics of the entire process and keep things moving. An organization's attention span is short, the more quickly the planning process moves forward the more likely it is to be successful. The Director is well advised to have most of the material he or she will be expected to produce prepared (at least in draft form) before making initial contact with stakeholders outside the IT department.

Planning for Planning

This step encompasses all the activities that can be accomplished, in whole or in part, before the SISP process officially begins. Because success is closely tied to expedient execution and the Director's time will be in high demand, preparation is key — even to the extent of having a formatted template (filled-in to the extent possible) of the final planning document.

Initiation and agency executive commitment

Commitment of the agency executive to the SISP exercise is the single most important key to planning success. Every effort must be made to have the agency executive as an active member of the planning team. Research shows that even an agency executive initially committed to the concept in theory is likely to be disappointed in, and fail to support, a plan in which he or she was

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not actively involved. If the situation makes it impossible for the agency executive to participate, a designee who speaks with the executive's voice must be found.

The process set out in this template is designed to facilitate participation by the agency executive (or a suitable designee). *If the agency executive is unable to participate on the project team, and a suitable designee is not available, we recommend the top-down process outlined here not be used.* An alternative process, based on bottom-up, grass roots support, should be adopted instead.

If the planning effort is initiated by the IT Director, he or she must be prepared to push for agency executive commitment — and participation on the planning team — when the issue is first raised with the executive. At this meeting, the Director also will need to outline the proposed process and seek executive approval for the approach. Careful attention should be paid to identifying stakeholders who should be consulted during the process (*e.g.,* oversight bodies). The Director and executive also should discuss likely suspects for membership on the project team. After receiving executive sign-off on the approach, the Director must proceed expeditiously to prepare the necessary materials for the process to move forward.

If the planning effort is initiated by the agency executive, the IT Director must push for agency executive commitment — and participation on the planning team — on the spot. The Director has more leverage to negotiate the agency executive's participation on the planning team at this point then he or she will have later. Assuming some approximation of the process described in this template is followed, the IT Director has enough information to advise the executive of the effort that will be required.

Assessing Agency Mission, Priorities, and Environment

Because agency mission and priorities are ordinarily an "input" to SISP, uncovering this aspect of the current situation is primarily a pre-planning activity. This task is not likely to be as easy as it sounds.

Because of the important role IS and IT can play in an agency's strategy for achieving its future goals, in a perfect world, SISP is undertaken concurrently with agency strategic planning. In most instances, however, the IT department's planning follows an agency effort, or is undertaken without benefit of an overall agency strategic plan.

Even when an agency strategic plan exists, there are at least three reasons it should not be relied on as the sole source for information about the agency's priorities and goals.

- Unless it was recently completed, it may not reflect current thinking by the agency executive and senior managers. Changes in the external environment, experience under the plan, or changes among agency leadership or key stakeholders may have left portions of the plan out of date.

- A written strategic plan serves many purposes, including as a "for public consumption" description of the agency agenda. Depending on the type of participation involved in the original planning exercise, it may only reflect consensus views. Research suggests

that it is not unlikely that aspects of the written document are left intentionally vague or do not completely reflect challenges facing the agency or the goals of key stakeholders. An example of a critical understanding that might remain unwritten (and, perhaps, unspoken) is the relative importance of service enhancing activities versus those that will generate savings.

- Even if the document was intended to accurately reflect the agency's agenda, it is at best only a synopsis of the discussion and reasoning behind its creation. More detail is likely to be required in order to determine how IS and IT can best be used to accomplish agencies objectives. Unless the IT Director was actively involved in the formulation of the agency plan, additional discussion and clarification will help fill in the entire picture.

Thus, unless the agency planning effort was very recently concluded, IS/IT was considered an active part of the agency's strategy, and the IT Director played an active role, it is best to review agency strategy with the agency executive, critical stakeholders such as oversight bodies, and the planning team before using it to identify plausible business initiatives.

Preliminary meeting with agency executive

As a first step, the IT Director should prepare a draft statement reflecting his or her perception of agency mission, goals, and priorities. The draft should be formatted as it will appear in the final planning document. It should be based on whatever written documentation is available, as well as the IT Directors best judgment.

If a formal agency strategic plan is not available, the mission statement often can be derived from enabling legislation or annual reports. Regardless of the flowery language they are embedded in, an agency's strategic goals usually boil down to three main points (not necessarily prioritized in the order shown) —

- Improving service to the agency's clients.

- Reducing operating costs (efficiency).

- Responding to external mandates.

After completing his or her initial draft of the agency's strategy, the IT Director should review it with the agency executive, making revisions as suggested. This meeting also presents an opportunity to elicit the agency executive's view on the organization's internal strengths and weaknesses, and external opportunities and challenges. These characteristics of the internal and external environment may be added to the draft.

It also is wise to jointly determine with agency executive if the draft should be cleared with oversight stakeholders before being presented to the remainder of the planning team.

Initial Meeting With the Planning Team

The primary agenda item for the preliminary meeting of the planning team is to reach joint agreement on the draft of agency strategy, and to elicit their views on the organization's internal

strengths and weaknesses, and external opportunities and challenges. This initial gathering also should be used to review the planning process and to allow the planning team to revise and approve documents or protocols the IT Director intends to use to gather information during the pre-planning stage.

Recall that in order to expedite the meeting, an agenda and high-quality versions of the documents for discussion should be made available beforehand.

Assessing the Current State of IS/IT

An accurate, up-to-date assessment of the current condition of information systems and technology in the agency — both within and outside the control of the IT Director — is important for three reasons:

- For the IT Director, information on the state of systems within the purview of the IT department provides an important check on his or her existing assumptions and intuitions. Information on the state of systems used in other parts of the agency, and on user perceptions of systems controlled by the IT department, is not necessarily acquired during the Director's normal routine.

- Other members of the planning team must develop their own holistic impression of the scope and current state of the agency's IS/IT function. Without sufficient background "facts," their view is likely to be based on the portion of the whole with which they must often interact. In their role as planning team members, they need to be familiar with the extent of IS/IT throughout the agency.

- The information is needed for preparation of the final planning document.

Status of existing information and technology systems

Background on the current status of mission-critical information and technology systems is gathered in two phases. In the first phase, IT staff identify existing critical systems and evaluate them, perhaps using forms similar to the examples shown in Appendices A and B. (Although optional, this would also be a good time to document records retention issues related to each system.) IT staff should identify the names and locations of all major end users of each system for use in phase two. In order to expedite the planning process, the first phase should be initiated as soon as the agency executive has approved the SISP exercise. It can begin before the initial meeting with the project team.

The second phase should not begin until the IT Director is prepared to take the SISP planning exercise to the rest of the agency. This will probably occur shortly after the preliminary meeting with the planning team. In this second phase, evaluations are sent to the end users identified in the first phase. An example evaluation format is shown in Appendix C.

At the same time inquiries should be made to other departments in the agency regarding mission critical information and technology systems they maintain. If any are identified, their systems professionals should complete forms "A" and "B," and their end users form "C." Although

optional, this also provides a useful opportunity to collect information on paper-based record systems that are critical to a department's function.

A similar procedure should be followed to document current technology assets. Collection of information on technology under the control of the IT Department should be straight-forward. A format similar to the example shown in Appendix D might be used to collect information on technology utilized in other departments.

Training needs

Training, both for systems professionals and end users, is an often overlooked aspect of strategic information system planning. A form similar to the example shown in Appendix E can be used to assess agency-wide training needs. Depending on the results, the IT Director should consider creating one or more IS/IT training-related business initiatives and submitting them to the priority setting process.

Current development efforts

The only thing likely to come to a halt during the planning process is the personal life of the IT Director — the rest of the world continues to move forward, including IS/IT projects currently underway. A format similar to the example shown in Appendix F might be used to capture the current status of major on-going IS/IT projects, within the IT and other agency departments.

Information on existing systems, as well as summaries of the system professional and end user evaluations, should be included in an appendix to the final planning document. The planning document also should include a summary of training needs and a breakdown of on-going, major projects. A draft of this section of the report should be prepared for review by the planning team before their first "planning stage" meeting, with regular updates provided as more information arrives.

If time or other resources devoted to the planning process do not permit extensive data collection (or, when information is simply not available), the IT Director should use his or her best judgment to provide information on the current state of information and technology systems, and agency training needs, to prepare a report for both the planning team and the final report. The basis of this report should be noted in the final reports section documenting planning method and assumptions.

Envisioning the Future State of IS/IT

The IT Director, in conjunction with senior IT staff, should prepare a summary of long term trends related to information system development, technology, and communications. This perspective is critical for the planning team to understand before they begin the task of prioritizing business initiatives. The summary / vision statement also should be included in the final planning report.

Identifying Potential Business Initiatives

The potential business initiatives the planning team will prioritize during the next stage are initially identified by department managers as providing opportunities for the application of IS/IT to improve client services, increase department efficiency, or respond to external mandates. Business initiatives are different from technology initiatives. For example, "reduce the time it takes to process an application" instead of "expand the use of client/service technology."

Business initiatives can be big, small (within reason), or in between, as long as they can be justified in terms of agency priorities. In order to assist the project team in its task, information on each business initiatives should be recorded in a standard format similar to the example shown in Appendix G.

Department managers will be responsible for identifying and justifying potential business initiatives within their agency. The managers must understand that the majority of IS/IT efforts supported during the next several years will come from among the business initiatives prioritized by the planning team — it is in their best interests to put substantial effort into this process. A brief training session ($\approx$1 hour) should be provided that emphasizes this point; shows department managers how to complete the business initiative form and write their justifications; and provides pointers for identifying likely candidates for initiatives (see, for example, the conceptual tool discussed in Appendix H). An optional variation at this point would be to have department managers rank their initiatives in terms of overall benefit.

After the department managers have had an opportunity to assemble their initiatives (approximately four weeks), and if time permits, the IT Director should meet with each agency department manager (and perhaps one or two senior staff) to review their proposed business initiatives and help them, where necessary, improve their descriptions and justifications. In this role, the IT Director adopts a supportive role, serving as a consultant to help the department make its best business case for each initiative. This effort provides several benefits —

- It helps department managers become better informed about technology — both its possibilities and limitations.

- It helps the IT Director better understand the business issues the agency confronts, and identify agency-wide trends and themes. (An analogous situation occurs when senior managers in the private sector accompany sales representatives visiting their customers.)

- It prepares the IT Director to respond to questions about the business initiative that project team members may raise during their review.

- It will help "level the playing field," reducing variation in the quality of the written justifications provided by different departments.

Planning Stage Activities

After the background information is available, and all of the proposed business initiatives are collected, the real work of the planning team begins. The planning stage revolves around three meetings of the planning team —

- The first ½ day meeting focuses on developing a shared understanding of the current situation, a long-term vision for the future of IT, and to prepare for the prioritizing stage by clearing up questions on the proposed business initiatives and ensuring everyone understands the process that will be used.

- A second meeting (1 day) requires the planning team to reach agreement on an initial priority list of business initiatives.

- During the final meeting (2½ hours – ½ day), the project team reviews the initial priorities in light of possible synergies and emergent trends, considers additional IS/IT initiatives to support those trends, finalizes the prioritized list, recommends a set of small projects for immediate implementation, and reviews and approves the draft of the IT Department's mission, goals, and priorities.

Understanding the Current Situation and Areas of Potential Investment

Agency mission, guiding principles, an accurate and thorough assessment of the situation, and a future vision of technology directions provide the foundation on which a well-thought out approach to the future can be built.

The purpose of the first planning session is to develop among planning team members a shared vision of the situation the agency faces, and the meaning of the proposed business initiatives. Of course, reasonable minds can disagree, and thoughtful men and women place a different interpretation on the facts. At some point, values will differ — *de gustibus non disputandum.*

Research and group decision making experience suggest that such theoretical disputes over values often have no affect when participants are asked to evaluate a limited set of alternatives. What is important in the first planning session is to ensure everyone has access to the same information, and avoidable misunderstandings are minimized. Remember, an important part of the reason for using a planning team is to encourage evaluations from differing perspectives.

Prioritizing Business Initiatives

At this point it is important to reiterate that the output from this part of the planning exercise will be a prioritized list of business initiatives — relatively narrow areas where further investigation and feasibility studies are likely to reveal opportunities, well-aligned with agency priorities, that offer a high return on investment. This is not a list of projects that will be immediately implemented.

There are two reasons for this approach. First, it makes no sense to conduct expensive and time-consuming feasibility studies on all the business initiatives proposed; it is best to wait until the process reveals those well-aligned with agency priorities. Second, waiting for the results of feasibility studies, even for a select set of initiatives, would cause the planning process to drag on beyond its useful lifetime.

It is critical that the planning team firmly grasp an often misunderstood rule about ordering a set of potential investments — investments should be ordered by decreasing *rate of return* (benefit/cost ratio), not by benefit alone. Initiatives that provide the largest "bang for the buck" should be selected first. Although a more expensive initiative often provides greater benefits than a less expensive one, several less expensive initiatives, taken together, often will cost less and provide greater total benefit.

The problem in the present situation is that a determination of the actual IS/IT solution to be used to address a given business problem is unknown — it won't be clarified until a careful feasibility study can be completed. This makes a determination of benefits, and especially costs, difficult. Even under these conditions, research and experience suggest that planning team members will be able to adequately subjectively assess relative benefits between initiatives by comparing the anticipated outcomes with agency goals and priorities.

Estimating initiative cost is more difficult, especially when the actual solution that will be adopted is unknown. Expert judgment is required, and even the expert's assessment is likely to be hazy. A solution that has worked in the past is to have the expert (in this case, the IT Director, perhaps in conjunction with other IT project team members) assign the initiatives to approximately five categories, from low cost to high cost, and provide an estimate of the approximate cost of each category. (The difference between categories should increase with expected cost.) Five categories with estimated average costs has been sufficient to help decision makers make priority judgments in previous priority setting investment exercises.

The cost estimates should be completed and included on the initiatives when they are provided to team members at the first planning session. Instances in which the range of possible costs is especially wide should be noted on the initiative. The categories and criteria used for estimating cost should be carefully explained by the IT Director, and documented for the final report.

In order to expedite the team's priority setting process at the second planning meeting, it is recommended that between the first and second meetings team members determine their (individual) priorities for initiatives *within* (but not between) each department. If the second meeting begins with the team reaching joint agreement on priorities *within* each department, then conflict and complexity will be reduced when they begin to assign priorities across departments. When initiatives are ordered within departments, the "next" initiative to be added to the agency-wide priority list must come from the top of one of the department's piles.

Various group decision support techniques are available that might be used to assist the planning team in reaching agreement on initial priorities. An example of one that was used for several years by college vice-presidents to divide discretionary funds among competing projects is described by Milter (1986, copy attached). With minor variations this procedure also has been used in a more

ambiguous and political setting to help a nationally appointed, blue-ribbon commission select among programs designed to improve the air quality in Budapest, as well as in other, public sector, group decision making situations.

Identifying Synergies and Recognizing Trends

The initial priority ordering developed by the planning team treats each initiative as an independent entity. But it is likely that several sets of high ranking items will raise similar issues, allowing developed expertise to be used in more than one effort, and perhaps allowing technology sharing as well. Such synergies may make certain initiatives less costly than initially expected, and move them up on the list of priorities.

Between meetings of the planning team, the IT Director (perhaps in conjunction with other IS/IT members of the planning team) should review the list of priorities and make a preliminary identification of synergies and emergent trends among the high-ranking initiatives.

After the IT Director has identified synergies and trends, he or she should prepare additional IS/IT business initiatives that would specifically support these agency-wide patterns. (The initial set of proposed IS/IT initiatives were ranked along with those from the other departments.) The IT Director should prepare a report for the planning team analyzing the synergies and trends, and explaining their relationship to the special set of IS/IT initiatives to be considered for inclusion in the priority list during the next planning meeting. He or she might consider reviewing this report with the agency executive prior to sending it to the rest of the planning team.

A number of small, well defined projects and minor technology investments are likely to surface near the top of the prioritized list. Most of these will affect other departments. To the extent they can be quickly completed by IS/IT personnel and/or funded within the existing agency budget, they should be immediately addressed. The IT Director's report to the planning team should identify these initiatives as well.

Attending to these small items will demonstrate benefits from the SISP plan (while buying time to procure the funding or undertake the feasibility studies required for larger efforts) and will generate good will among other department managers and end-users. The agency executive and IT Director should ensure credit for these activities is shared among all participants, direct and indirect, in the SISP process.

In the interim between the two planning team meetings the IT Director also must prepare a draft of the IS/IT functions mission, goals, and priorities for review by the planning team and eventual inclusion in the planning document. This step has not been taken before, because it is critical that the agency's business needs and mission drive the goals and priorities of the IS/IT function, and not the other way around. Holding off until this point allows the IS/IT mission to reflect the agency's direction and needs.

Post-Planning Stage Activities

Now this is not the end.
It is not even the beginning of the end.
But it is, perhaps, the end of the beginning.
— Sir Winston S. Churchill, 1942 —

If all has gone well in prior stages of the planning process, only a small amount of clean-up work remains in this stage. But, as Sir Winston Churchill notes above, the end of the planning process is just the conclusion of the prelude to the even larger tasks that follow.

There are only three activities required during the post-planning stage —

- Production of the final version of the planning document.

- Meetings with IT staff to review the rationale behind the plan.

- Meetings with other critical stakeholders to review the findings and recommendations of the study.

The priority list of business initiatives provides a flexible tool for initiating the requisite feasibility studies. As resources (both personnel and funding) become available the next initiative is selected from the list.

As time passes, the list will come to less accurately reflect the current situation, business needs, and currently available technology. This could occur within a year, and strains are almost inevitable after two. If this situation arises before a new SISP exercise can be undertaken, one approach is to reconvene the planning team to reexamine the priority list.

The planning team also can be reconvened from time to time to help select among the alternatives generated by subsequent feasibility studies.

Links to the Budgeting Process

As feasibility studies are completed, analysis of plausible alternative approaches to the business initiative will enter the budgetary process. There they will compete against other IS/IT initiatives and non-IS/IT business priorities in pursuit of the scarce funding resources.

Research suggests this is not an entirely unfortunate occurrence. While some reorganization of priorities is almost inevitable as the result of the on-going interplay among organizational forces, there is evidence to suggest that strategic plans that are linked to the budget process have a better track record in terms of receiving funding for implementation in the recommended order than those that stop at the agency executive.

The SISP process proposed in this template is designed to maximize the success of IS/IT initiatives in the budget process. First, by making every effort to ensure agency executive buy-in.

Second, by providing clear links to agency mission and goals, facilitating justification of initiatives. And, third, by allowing the time for thorough feasibility studies to help ensure that the best alternative method for implementing a given initiative is chosen.

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Appendix A
Information Systems Application Portfolio

INFORMATION SYSTEMS APPLICATION PORTFOLIO			
Business Application Title and Purpose	**Annual Requirements**		**Description of Opportunity for Change**
	Age (years)	**Last Upgrade**	
	FTE	**Funding**	

Adapted from: *1997-99 Information Resources Management Planning Instructions,* Strategic Planning & Review, Information Resources Division, Department of Administration Services, State of Oregon.

Appendix B
System Questionnaire for System Professionals

SYSTEM QUESTIONNAIRE

System Name: _____

As a system professional familiar with this system, please complete
this questionnaire regarding its importance and performance characteristics.

	Importance (1=not important; 5=critical)	Performance (1=snore; 5=the best!)
Ease of development & maintenance	1 2 3 4 5 n/a	1 2 3 4 5
Ease of changing data or applications	1 2 3 4 5 n/a	1 2 3 4 5
How well this system integrates with other systems and data	1 2 3 4 5 n/a	1 2 3 4 5
Level of training received	1 2 3 4 5 n/a	1 2 3 4 5
System documentation	1 2 3 4 5 n/a	1 2 3 4 5
Vendor (hardware or software) responsiveness to problems	1 2 3 4 5 n/a	1 2 3 4 5
Internal controls	1 2 3 4 5 n/a	1 2 3 4 5
Overall Rating	*1 2 3 4 5 n/a*	*1 2 3 4 5*

Your ideas are important.
Do you have any suggestions on how this system can be improved?

Please return completed forms to: _____ **By:** _____

Adapted from: *1997-99 Information Resources Management Planning Instructions,* Strategic Planning & Review, Information Resources Division, Department of Administration Services, State of Oregon.

Appendix C
System Questionnaire for Program Managers and End Users

SYSTEM QUESTIONNAIRE

System Name: _____

**As a system professional familiar with this system, please complete
this questionnaire regarding its importance and performance characteristics.**

	Importance (1=not important; 5=critical)	Performance (1=snore; 5=the best!)
Ease of development & maintenance	1 2 3 4 5 n/a	1 2 3 4 5
Ease of changing data or applications	1 2 3 4 5 n/a	1 2 3 4 5
How well this system integrates with other systems and data	1 2 3 4 5 n/a	1 2 3 4 5
Level of training received	1 2 3 4 5 n/a	1 2 3 4 5
System documentation	1 2 3 4 5 n/a	1 2 3 4 5
Vendor (hardware or software) responsiveness to problems	1 2 3 4 5 n/a	1 2 3 4 5
Internal controls	1 2 3 4 5 n/a	1 2 3 4 5
Overall Rating	*1 2 3 4 5 n/a*	*1 2 3 4 5*

Your ideas are important.
Do you have any suggestions on how this system can be improved?

Please return completed forms to: _____ **By:** _____

Adapted from: *1997-99 Information Resources Management Planning Instructions,* Strategic Planning & Review, Information Resources
    Division, Department of Administration Services, State of Oregon.

Appendix D
Department Technology Profile

DEPARTMENT TECHNOLOGY PROFILE				
Desktop Devices				
Type	*# In Place*	*Purchases Forecast*		
		FY 97-98	**FY 98-99**	**FY 99-00**
386 PCs				
486 PCs				
Pentium PCs				
Macintoshes				
Unix Workstations				
Terminals				
Scanners				

Microcomputer Operating Systems (Now and in the Near Future)							
	(Percentage should total 100% for each period)						
Estimated Percent as of:	*Win 3.1x*	*Win 95*	*Win NT*	*OS/2*	*Mac OS*	*Unix*	*Other*
July 1997							
July 1998							
July 1999							

Network Services

Network Operating Systems (check all that apply)
☐ Novell   ☐ LAN Manager   ☐ Win NT   ☐ Banyon   ☐ Apple Share   ☐ Other

LAN Topography (check all that apply)
☐ Ethernet   ☐ Token Ring   ☐ AppleTalk   ☐ ArcNet   ☐ Other

e-Mail Access				
e-Mail Products	*Installed Mailboxes*	*Mailboxes Forecast*		
		FY 97-98	**FY 98-99**	**FY 99-00**

Web Browsers				
WWW Browser	*# Installed*	*Browsers Forecast*		
		FY 97-98	**FY 98-99**	**FY 99-00**

Adapted from: *1997-99 Information Resources Management Planning Instructions,* Strategic Planning & Review, Information Resources Division, Department of Administration Services, State of Oregon.

Appendix E
Organizational Capacity Assessment

ORGANIZATIONAL CAPACITY ASSESSMENT		
Department: _____	**Completed by:** _____	

The goal of this form is to assist you in assessing the skill levels and training needs for technical staff, management, and technology end users in your Department.

In the first section, assess the current skill levels in each staff category relative to the tasks each group needs to perform. In the second section, indicate the training required to move each staff category to at least the adequate" level.

Section 1: Skill Levels. Indicate the number of staff and "median" skill level by category.

Category	# of Staff	Median Skill Level				
		Low		Avg		High
Secretarial/Admin. Support		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Facilities Support		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Professional Staff		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Technical Staff		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Program Managers		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Secretarial/Admin. Support		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Section 2: Training Needs. Appropriate training can be very different between user groups. Using the list below

Training Need	# in Need	Priority		
		Low	Medium	High
Desktop/End User		☐	☐	☐
Accounting/Spreadsheet		☐	☐	☐
Desktop Publishing		☐	☐	☐
Database Management		☐	☐	☐
Internet/e-Mail/HTML		☐	☐	☐
Methodology/Project Management		☐	☐	☐
Application Development		☐	☐	☐
Network Operating Systems		☐	☐	☐

Section 3: Barriers and Strategies. Describe barriers to recruiting and retaining technology-qualified staff. Indicate any strategies you have adopted to improve your success.

Appendix F
Project Summary

PROJECT SUMMARY						
What						
Project Title:						
Why						
Project Objective:						
When						
Schedule (start date and end date):						
How						
Current FY Funding:						
Costs	FY 96	FY 97	FY 98	FY 99	FY 00	*Total*
Personal Services (New staff or contractor services)						
Services & Supplies (New training, travel, maintenance, etc.)						
Capital Outlay (New investments for HW, SW, or facilities)						
Total Costs for Development and Operation (in $s)						
Total Staff Time Required (in hrs)						
Describe any risks or adverse impacts on reverse side.						
Benefits	FY 96	FY 97	FY 98	FY 99	FY 00	*Total*
Cost Savings (Reductions)						
Revenue						
Reimbursements						
Total Monies Recovered (in $s)						
Total Staff Time Saved (in hrs)						
Describe new products, services, or capabilities on reverse side.						
Net	FY 96	FY 97	FY 98	FY 99	FY 00	*Total*
Dollar Difference						
Hours Difference						

Adapted from: *1997-99 Information Resources Management Planning Instructions,* Strategic Planning & Review, Information Resources Division, Department of Administration Services, State of Oregon.

Appendix G
Business Initiative Description and Justification

IS/IT Business Initiatives
(To Be Completed by Requesting Department)
Description
(Describe the business problem the initiative addresses. Outline the result desired through the use of IS/IT.)
Customer
(Who will benefit? How? Why?)
Justification
(How does the proposed initiative address agency priorities?)
Possible Consequences
(Identify any risks involved in this initiative. Describe significant changes that will be required in your existing workflow, in your organization or by your clients, e.g., facility, forms, training.)

IS/IT Business Initiatives **(To Be Completed by IT Director)**	
Please check all appropriate boxes that **might** be used to address the business issue.	
Productivity/Reengineering	
☐ Imaging/Workflow	☐ Outsourcing/Professional Services
☐ Electronic Data Interchange (EDI)	☐ Systems Integration
☐ CASE Tools	☐ Downsizing/Migration
Client Applications	
	Public Access
☐ GIS/Mapping	☐ Internet Applications
☐ Design/Engineering	☐ Intranet Applications
☐ Database Management	☐ Interactive Voice Response
☐ Publications/Pre-press	☐ Kiosks
☐ Electronic Mail	
Information Systems	
☐ Network Development	☐ Security/Disaster Recovery
☐ Network Management	☐ Client/Server
Education, Training, and Management	
☐ Training/Education	☐ IRM Planning
☐ Software Asset Management	☐ Project Management
Other Initiatives?	
☐	☐
☐	☐
Other Comments/Limits on Solutions to be Considered	

Adapted from: *1997-99 Information Resources Management Planning Instructions,* Strategic Planning & Review, Information Resources Division, Department of Administration Services, State of Oregon.

Appendix H
Identifying Opportunities for Information Sharing

Information sharing using IT, whether within a department or an agency, or across the organization's boundaries, often provides important opportunities for improving customer service, reducing costs, or meeting external mandates. But these opportunities often remain unrecognized. The diagram below can assist managers in thinking through all of the ways an improved information flow might help their organization.

When using the diagram, it is important to take the perspective of the entity at the head of the arrow. For example, put yourself in the clients shoes when you ask how the client could benefit from receiving certain information from the department in electronic form.

Emerging trends make this analysis particularly important. Increased access to the Internet, electronic funds transfer, and the promise of electronic commerce all suggest such solutions will become increasingly viable. And, as the federal government increasingly embraces both performance measures and electronic data interchange, they are likely to mandate the electronic provision of performance information.