SURVIVE THE IT PLANNING CRUSH

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ABSTRACT

IT planning continues to be very important at all levels of the organization. Today, with the limited resources colleges and universities have, increased expectations are placed on IT. Furthermore, IT is not immune from financial justifications and budgetary cutbacks. These combined pressures create an urgent need to leverage IT resources and, in particular, the time of IT specialists. Central IS groups, by bringing knowledge and experience to the end-user community and having them assess their own IT situation, can improve both efficiency and effectiveness of the planning process. To successfully complete this assessment and develop appropriate action plans, end-users require both a framework and guidance. This paper describes the experience of a smaller faculty in a medium-sized university in carrying out such an “IT Needs Analysis.”
INTRODUCTION

IT and IS provide a great deal of support to universities at the operating (teaching and learning, research, and administration), managerial, and strategic levels. Those responsible for IT management must constantly decide between short-term urgent and long-term important issues and make appropriate tradeoffs. Thus effective IT planning, resulting in appropriate goals, priorities, resource allocation, and responsibility assignment, is critical.

An important component of the planning process is ensuring alignment between IT goals and those of departments, faculties, and the university. Alignment between organizational and IT plans is foremost in the minds of most IS executives today – aligning IS and corporate goals has headed Computer Sciences Corporation’s critical issues list for the past two years. Tapscott and Caston (1993, pp 263-264) identify eight symptoms of an organizational alignment problem. Equally important is aligning individual unit IT plans with those of the entire organization. Through cooperation and partnership, with everyone pulling in the same direction, much more can be accomplished.

Given today's constrained campus environment, there is a strong need to leverage limited IT resources, and in particular the time of IT specialists. The central campus IS group faces increased expectations from customers, no longer has monopoly control over the selection and purchase of h/w and s/w, faces the challenge of maintaining standards and procedures under such circumstances, and is not immune from the continuing budget crunch facing most institutions. End users generally have limited planning and technical expertise; however they have other resources available and are usually eager to capitalize on the advantages IT brings. Yohe (1996) argues that the current crisis in IT support services is really an opportunity. His call for distributed responsibility and collaboration applies equally to IT planning.

Baltzer (1994, pp 5-6), in discussing customer communities, lists three things that IT leaders beginning a strategic planning process must do: (i) determine who their customers really are; (ii) determine their customers’ needs; and (iii) establish ways to measure the success of the IT organization in the customers’ eyes. With limited resources, and plentiful demands, how can Central IS do this?

One way is to enlist the help of customers. The central IS group, by bringing knowledge and experience to the end-user community and having them assess their own IT situation, can make the planning process both more efficient and effective. To successfully complete this assessment, end-users require appropriate frameworks to follow, along with ongoing guidance and advice in their application. It has been said that plans are nothing while the planning process is everything. In a time when there is often friction between the central IS group and end users, this approach not only builds good will and makes better use of scarce resources, it also develops an incentive for users to carry through with implementation of their newly developed IT plans.

OVERVIEW OF IT PLANNING

Many planning models are available in the literature, and workshops on IT planning have been held by CAUSE and EDUCOM. Penrod and West (1989) focus on IT planning. Martin et al (1994, pp 497-526) provide an overall scheme for IS planning, including assessment, visioning, and plan construction. Thomas and Jones (1993) provide an overview of the strategic planning process and extend this to strategic budgeting for IT. Shirley (1988) provides a model for planning in higher education. Rhimes and Kelley (1993) provide an overview of how one university applied IBM’s Information Planning Study Methodology to develop and implement an IT plan. The Learning Action Plan (Baltzer, 1994) details an approach to IT planning that can be applied to colleges, universities, and other organizations.
The concept of alignment between an organization’s business and IT strategies first emerged in the 70s. It was further developed by Harvard Business School faculty, including Warren McFarlan and Michael Porter. A more recent strategic alignment model has been developed by Henderson and Venkatramon (1993). Their model comprises four fundamental domains of strategic choice: business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes. Two types of integration – strategic and operational – are required. Furthermore, different organizations require emphasis of different domains.

The planning and alignment processes needs to be applied at both the macro (institutional) and micro (faculty or similar unit) level. Centralized IS can oversee the big picture, while faculties and departments look after smaller pieces of the jigsaw. When top down planning is lacking, bottom up or middle out is an alternative.

FRAMEWORKS

Frameworks aimed at end-users need to be relatively simple to explain and comprehend, focused on items of major importance, and easily applied. Therefore a few standard frameworks will suffice, providing they are properly applied. The project itself needs to be organized and executed (framework #1). An evaluation of the current state of IT within the user department, identifying how IT is being used, what works well, and what does not, is needed (framework #2). Besides evaluating where the department is, consideration must also be given to where the department is going and how IT will support this change (framework #3). Finally, basic principles that will help a department's IT decision-making need to be articulated (framework #4).

Framework #1 – Project Plan

Fundamental to any project is the project plan, which provides a road map of what is to be accomplished, how, by whom, and when. The project plan is a working document, and is updated as the project proceeds. It is a means to the end, rather than an end in itself. An initial project plan will state the project’s purpose, identify specific deliverables, list the major tasks required to complete the project, and identify resources (both needed and available, so any shortfall is known and can be dealt with). Subsequently, the project plan will expand as tasks are expanded into further detail and a Task Breakdown prepared, a Responsibility Assignment Matrix prepared (showing who is responsible for which tasks), and a Project Timeline developed. Central IS has considerable experience with project planning, and can work with end-users in developing their plan, using the project planning framework that is standard for the institution. A side benefit is that end-users can use this framework in future projects. Appendix 1 provides an example of an initial project plan.
Framework #2 - PAT (People, Applications, Technologies)

The second framework focuses on the current state of IT within the department – what h/w and s/w is being used by whom, how often, how satisfied users are, etc. People in the department have job responsibilities. In carrying out these job responsibilities, they make use of IT applications (such as word processing, e-mail, accounting systems, spreadsheets, databases, etc.). Technologies (h/w and s/w platforms) are used to support these applications. Therefore the acronym PAT (people, applications, technologies).

The first step in applying this framework is to define generic positions filled by people in the department. Think of major responsibilities people have and classify them accordingly. In a university there are faculty and staff. Faculty can be divided into full-time, part-time and administrators (with overlap possible). Staff can support administrators, faculty and/or students, can have specific academic or non-academic responsibilities, and can be managers. Once users are categorized, consideration can be given to the applications and technologies used by each group. A list of all IT applications available is then developed. Some may be specific to the department, while many will be available across the institution. Finally, a list of all h/w and s/w platforms that support the various applications is developed. Often an inventory of both applications and technologies exists; sometimes this must be generated.

Departments also need to consider key external groups, or individuals, that they either depend upon or have responsibilities to. For example, academic departments rely upon the library, the Registrar’s office, and other central support groups (including IS).

The next step is to develop questionnaires for each position group. Each questionnaire lists the various applications and technologies, asking for feedback on whether or not they are used, how frequently, and how satisfied users are. Appropriate satisfaction dimensions (such as response time, availability, ease of use, data accuracy, output quality, departmental support, and organizational support) need to be determined and listed on the questionnaire. Feedback should also be obtained re training, support, manual operations that are possible targets for computerization, and likely future changes. Space for comments can be provided. The questionnaire should give users an opportunity to explain why they are dissatisfied with particular applications or technologies.

Questionnaires can be administered in a variety of ways. Sometimes interviewing individuals or groups is best. In other cases a mass mailing will be sufficient. Typically a variety of survey methods will be used. While it is time consuming to interview individuals, the quality of information received is high, explanations concerning particular responses can be immediately pursued, and probing is possible.

Framework #3 - GAP Analysis

Application of the previous framework provides a picture of where the unit currently stands with IT, and identifies problem areas requiring attention. This next framework provides a picture of the “gap” between the present situation in the unit, and the future (say three to five years beyond).

Information technology should help in both the running of units (efficient day-to-day operations) and building for the future (effectiveness). The following table lists several important categories, for which a list of appropriate sub-processes can be developed. While some customization is required, many documents exist which can be used to help in this task (e.g., CAUSE/EDUCOM Evaluation Guidelines for Institutional Information Technology Resources).
Framework #4 - IT Principles

Having principles is important (and at a minimum, guidelines) which can be routinely applied to the many IT decisions that departments make. To the extent standards exist, and are followed, the task of the central IS group is lightened. Within departments, users need to understand the rationale behind budget and technology choices. The development and publication of IT principles results in a common understanding among users and standard operating procedures for departmental IT personnel. Departments can be capably helped with this by having the central IS group provide a suggested set of principles as a starting point.

Four major categories that principles need to address are strategy, standards, support, and resource allocation. For strategy, an important issue is the extent to which IT people will be involved in the development of unit strategy. A strong principle would be that the unit’s IT Director (or equivalent) is a member of the unit's strategic planning group. A weaker principle would be to have the IT Director review and comment on strategic plans after they are drafted. Another strategic decision is the decision to lead or lag technology – will the unit be on the leading edge (which is expensive), or will it lag by several years (reducing financial costs, but limiting the use of technology in teaching and research). Another strategic decision is the amount of the unit's budget apportioned to IT, and how this portion is split between ongoing and new initiatives. All too often units become locked into funding ongoing costs, leaving no slack for needed changes. When units make strategic decisions about their IT budget, it starts them thinking about core competencies, possible outsourcing to the central IS group, and other means of leveraging limited resources.

Hardware and software standards are always a concern in the university and college environment. With so many faculty providing their own funding, financial controls cannot be used to ensure compatibility on campus. Nevertheless, incentives can be put in place to encourage those with their own resources to adhere to standards. An especially effective means is through limiting maintenance and training support to current campus-wide standards. An example of a simple yet effective standard is that the unit will adhere to all standards set by the central IS group.

Resource allocation deals with who gets what (faculty, staff, students), how often equipment is upgraded, how the budget is apportioned between personnel, hardware, and software, etc. This is always a contentious area, and having written principles goes far towards addressing the “squeaky wheel.”

Once principles are developed and accepted, it is essential that they be adhered to. Sometimes it becomes impossible to apply a principle, or the department chooses not to. It is much better to withdraw such a principle.
Wilfrid Laurier has some 5500 full-time students, of whom 10% are enrolled in graduate programs (mainly Masters). The School of Business & Economics (SBE) is one of five faculties. SBE’s 80 faculty and 25 staff support Bachelors and Masters programs in Business and Economics for 2000 undergraduates and 100 graduate students. It has a budget of approximately $9 million.

In 1994 the University went through the process of defining core values, developing a mission statement, and identifying six key goals for the year 2000. SBE’s Dean, in response to this Long Range Plan, initiated a Strategic Initiatives Team (SIT) to consider both the university’s goals and the problem of continuing budget reductions. One recommendation from SIT was to carry out an IT Needs Analysis for SBE. Subsequently a project proposal (Appendix 1) was submitted to, and accepted by, the Dean.

Our project team comprised four people, three internal plus an “external advisor.” The external person was critical, as we looked to him for the necessary frameworks and expertise. Unfortunately there was no such expertise within the university and so an outside advisor had to be found. It took six weeks to identify someone, obtain support from the organization, and arrange the initial project team meeting. The original person targeted from the external organization was not the person assigned to us. However he did bring the necessary knowledge and experience we required.

The advisor’s role was that of a consultant. He brought the PAT and GAP frameworks with him, gave much-needed feedback on our ideas, brought to our attention things we would have otherwise overlooked, and provided appropriate encouragement. All the “leg-work” was assigned to the three internal members of the project team. Appendix 2 outlines, in a very abbreviated form, the type of questionnaire developed and used. In hindsight, our team should have requested secretarial support for preparing the questionnaires, analyzing the data, and preparing the final report.

Results of the project were extremely positive. First, we clearly identified IT problems (immediate, short term, and long term), as well as broader faculty planning issues. Recommended solutions were made for all the immediate and short term problems, and projects were defined for addressing the longer term issues. A budget was prepared, which (for the first time) clearly put a cost on priority IT upgrades. All the recommendations were accepted and it did not take long for funding to be found. The report then became the “road map” for getting to our desired future state.

Using an external advisor was extremely effective, and has become the norm for major projects where the School or University does not have appropriate internal expertise. This approach provided a hands-on training program for our internal staff and strengthened the Faculty's relationship with the external organization providing the expertise.

Finally, the clear statement of standards & principles made it easy to implement the IT upgrades. A minimum platform was defined, as well as a current platform (for new purchases). In our case, staff was given preference over faculty for hardware and software upgrades, since each staff person supports many faculty. Among faculty, those who were most self-sufficient were given priority. While the budget was insufficient to upgrade everyone to a current platform, the “trickle down” of older equipment resulted in everyone being upgraded to at least a minimum platform. People were encouraged to self-fund improvements to their assigned platform, and more than half the faculty took advantage of this.

The following table summarizes the major lessons learned from this project. Clearly end-users can take on responsibility for IT planning, and be successful.
LESSONS

Value of project planning
Value of frameworks
Value of external advisor/consultant
Opportunities generate resources
Appropriate support for project team
Need for project champion
REFERENCES


APPENDIX 1
SBE IT NEEDS ANALYSIS PROPOSAL

Purpose: To identify areas where IT enhancement can improve efficiency and effectiveness within SBE.

Deliverables

1. Analysis of current IT use in SBE, with identification of problem areas. Where possible, recommend a solution to each problem (otherwise, define a project that will result in a recommended solution). Identify areas where IT is being used appropriately. Include hardware and software standards in this analysis.
2. Consideration of the impact of the SIT recommendations and identification of the IT needs arising from them. Where possible, recommend a solution to each need (otherwise, define a project that will result in a recommended solution).
3. An analysis of the university's IT plan and the impact this will/should have on SBE IT planning (based on a 5-year horizon).
4. Consideration of the direction IT in general is taking, with a statement of implications for SBE.

Tasks

1. Set up a project team.
2. Find an external consultant to work with the project team.
3. Develop a detailed plan for carrying out the IT Needs Analysis.
4. Complete the Needs Analysis by June 30/95.
5. Plan and commence implementation of recommendations this summer.

Resources

People – members of project team; external consultant (free, charge?); ITC; Computing & Communication Services

Documents – past SBE IT plans; WLU IT plan (at draft stage?); SIT proposal and background material
APPENDIX 2
QUESTIONNAIRE FORMAT (Abbreviated)

SECTION A: TOOLS
1. For each Tool specified in the following table, please indicate the following:
   I. Do you use the tool? Tick the appropriate column (Yes/No)
   ii. How frequently do you use it? Tick appropriate column - Daily, Weekly, Monthly, once per Term or once per Year.
   iii. Your level of satisfaction - Low, Medium or High. Use the following dimensions to measure your satisfaction:

   SATISFACTION DIMENSIONS:
   - Response Time
   - Availability
   - Ease of Use
   - Data Accuracy
   - Data Accessibility
   - Support from SBE
   - Support from WLU

SECTION B: TECHNOLOGIES

SECTION C: TRAINING & SUPPORT
For the software packages/systems that are of most importance to you, please list them and indicate the following:

TRAINING
1) How would you rank your understanding of this software package/system: Beginner, Intermediate or Advanced.
2) Have you had training on this package? Yes or No
3) Do you feel you need (more) training on this package? Yes or No

SUPPORT
1) Do you use support from SBE or CCS (Computing & Communication Services)?
2) Rate your level of satisfaction with each source of support - Low, Medium or High.

SECTION D: COMMENTS

SECTION E: MANUAL (NON-COMPUTER SUPPORTED) FUNCTIONS
Specify the major manual functions you perform in the course of your duties. For each manual function, please respond to the following questions on Frequency and whether it is a candidate for automation, using the table below.

How frequently do you use this function? - Daily, Weekly, Monthly, once per Term or once per Year.
Is this function a candidate for Automation? Yes/No

SECTION F: FUTURE
This section will be discussed in more detail during the interview. Please think about these questions, in preparation.
(5 questions follow)