THE ROAD TO SUCCESSFUL ACADEMIC SERVICE LEARNING PROJECTS: MAKING THE RIGHT CHOICES

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ABSTRACT

This paper provides several thoughts and suggestions regarding the appropriate choices that need to be made in creating and managing an Academic Service Learning project through to a successful implementation. Success is defined as having a satisfied user who has received the designated deliverables of high quality on a timely basis and students who have gained by the experience. Choice is the key word here and appropriate matches must be made regarding:

- which non-profit can be supported by what type of project?
- which technologies will be utilized versus those available?
- which tasks will actually be included?
- what will be the timeframe? A semester or less? A full academic year?
- how does the instructor select the most promising students?
- who are the users who will be involved; at what levels and what will their responsibilities be?

Making the correct choices will enhance the project's chance of success but not considering all of the choices that need to be made or making the wrong choices can doom the project to failure hurting the reputation of the school, negatively impacting the non-profit and confusing the student volunteers.

INTRODUCTION, BACKGROUND AND OBJECTIVE

Academic Service Learning (ASL) can be defined as a student simultaneously devoting time to a service related activity, usually at a non-profit organization, while enrolled in a related college level course. Administration and management of the activity, called a project in this paper, typically falls to the course instructor who would set the project's objectives, define the deliverables, create the time frame and document the responsibilities of all participants. Service learning projects usually run for the duration of an entire semester or even two full semesters and must be carefully defined and managed since there will be significant interaction with the selected organization and the project will have an impact upon its operations. [2]

ASL projects can be very beneficial all around, or to use an extended catch phrase, is "Win-Win-Win" for the three major parties involved. First of all the non-profit or the organization realizing the benefit of the effort, will receive some sort of an Information Technology product such as a new database, a new transaction entry system, reporting system, etc. The non-profits will not have the IT resources, the technologies or financial resources to implement an IT project on their own. Secondly, students gain experience by interacting with users just as they will after graduation and can apply class principles, such as database design, to building a real world database. Thirdly, the school, including the

instructor, gain recognition and build good will [7] by providing resources and guiding the project through to a successful implementation.

THE NON-PROFIT AND THE ACADEMIC SERVICE LEARNING PROJECT

The non-profit organization is metropolitan New York based and provides immigration services to neighborhood Latinos, Irish citizens and Irish immigrants. Immigration services may include counseling, assistance in acquiring green cards and/or citizenship as well as helping to resolve immigration issues with the federal government. It is privately funded but also receives assistance from a foreign government, New York City and New York State. Its IT resources are limited to a modest contract with an IT service organization which provides basic software, hardware, networking and support services.

Operations are currently conducted by utilizing numerous unrelated Excel spreadsheets including one major one which includes both client and transactional information. The input for such spreadsheets is manually gathered on input forms and a variety of unrelated reports are produced from the spreadsheets as the sole type of output. There is no simple way to determine if a client is receiving multiple services or if a donor is supporting multiple programs which provide multiple services. Also, it is difficult to immediately determine which services are being utilized and if they are meeting the funding criteria of the donors/governmental organizations.

A centralized database has been designed to hold client and transaction information as it is generated at the receptionist's desk. It also contains program and services information including regulatory reporting requirements and funding information. All related reporting and inquiries can be made utilizing the single source database. Thus the non-profit can determine which clients are utilizing which services and can identify the related program. Clients utilizing multiple services can also be identified and duplicate entry of client information will be eliminated. Transactions can also be studied and analyzed by date, client, service, and program or funding entity.

DISCUSSION - THE CHIOCES THAT NEED TO BE MADE

The Non-Profit and the Candidate Project -

The school's Academic Service Learning office should be helpful in making the match, or choosing, a non-profit organization that will be the beneficiary of the ASL project. [9] When selecting a non-profit several questions must be asked regarding the choice:

- Is there a valid need for the school's ASL assistance and how great is the need?
- Is the size of the non-profit suitable for rendering assistance? Too large and the non-profit will most likely have sufficient IT resources and, too small, the non-profit may become overly dependent upon the school over the long term for continuing assistance.
- Is the non-profit truly desirous of assistance? Are they eager for the help? Is there a champion or sponsor of the project at a sufficiently high level within the organization?

Regarding the choice of the candidate project:

- The match must be made of the non-profit's needs to the school's abilities to satisfy those needs. We are also seeking a close correspondence between the non-profit's IT needs and the course content. For example a Database Design course's students and instructor should easily be able to support the creation of a database for the non-profit,

but could a Software Engineering or Systems Analysis classes' students support such an effort?

- The size of the project must be carefully chosen or designed. [5] If the project is too large it will not be completed on time and it will most likely be complex which increases the chances of failure. Too small a project may not be worth the effort.
- It should be focused on a specific function. For example a database or an on-line transaction data entry system, or a redesign of a local network.

Resources -

The pool of human resources may include the students, instructor, the users from the non-profit and possible resources from the school's IT department and also the non-profit's IT vendor. The choices to be made here include:

- choosing people from the school's IT staff who have the appropriate technical skills, time, devotion and freedom to be involved in the project
- choosing whether to ask for assistance from the non-profit's IT vendor. This type of involvement should be kept to a minimum because it may be expensive and may cause some ongoing issues after project completion.

Non-human resources must also be considered. [9] To what extent do we employ development tools, testing software, project management software, etc. The suggestion is to keep things simple and utilize the bare minimum resources that are free to the user (non-profit), user friendly, and already extensively proven to be reliable in industry. Remember, we want to assist the non-profit by implementing a focused, easy to develop and easy to use system that they can rely upon independently for many years to come without excessive dependence upon the school.

Technology -

- New cutting (or bleeding?) edge vs. proven and mature technology regarding operating systems, programming languages, database management systems and network operating systems?
- Older, current or newly released versions of the above?
- Older, current or new hardware?
- Fitting to the non-profit's current hardware and software operating environments or redesigning or replacing them?

Most often it is prudent to try to install the new product or service with minimal changes to the user's technical and office operating environments. This increases the chances of success while reducing the impact of the project to a minimum on the part of the user. [5]

Tasks/Deliverables -

This area of choices and match making may, in fact, be the most important one. First of all, the scope of the project must be well defined and remain static over the course of the effort. For example, are we simply converting the Excel spreadsheets to a database management system or are we also redesigning the daily data transaction entry system? The scope of the effort, that is, what are we actually creating and delivering versus what are we not touching, not doing and perhaps handling in a future project? [7] Once the scope is defined which specifies the major functions of the project then the tasks and deliverables can be documented within a project plan. Tasks appearing in a project plan should:

- have a clear and meaningful name
- include a description
- include what will be delivered upon the conclusion of the task
- be assigned to a specific person(s)
- have a begin and end date
- include any dependencies

A final few considerations regarding the project plan and the tasks contained therein include:

- take care to include all relevant tasks in the plan
- the durations assigned to the tasks for an individual are often too short and optimistic and do not take into account the percentage of a person's weekly schedule that he/she may be available to work on the project.
- task dependencies are often not taken into account
- the task deliverable must be well defined to the extent that the assigned person is aware of what she needs to "put on the table" at task completion time.

Timeframe -

The choices regarding the timeframe of the effort are, perhaps, rather clear cut and include:

- Less than a full semester
- Full semester
- Two semesters or an academic year

The recommendation here would be to go with the full semester whenever possible and to even take steps to shape the scope of the project in order to fit it within one semester. [4] The single semester timeframe is recommended so that the project may employ one small set of volunteer students throughout without worrying about re-staffing with new students for the second semester. A sixteen week semester should be short enough for keeping everyone focused and involved with the effort and yet long enough to successfully complete the tasks laid out in the project plan.

We also need to address choices relating to people selection and most experienced software project managers will advise us that the success of a project significantly depends upon those people assigned to it. So let's take a look at three categories of human resources and how might we choose the best people for the job at hand.

Students -

We need to match, select, or choose students who:

- have excellent grades in classes related to the project's technology
- are mature enough to meet commitments in a timely manner
- are good communicators who will be easily to carry on discussions with users.
- know enough about the technology to make a contribution yet are receptive to advice, direction and new technologies
- willingly have volunteered for the effort and have not been pushed into it by peers or the instructor

For a semester long project, typically three to four volunteer students will suffice. [7]

User -

Obviously the school or the school's representative does not choose the User who will be the main contact/liaison person for the non-profit. But we do have a responsibility to relate to the non-profit's management staff what kind of time commitments are involved, what user oriented decisions need to be made and what kind of business knowledge and experience are necessary. Optimally, a first line supervisor or second line lower level manager makes for an excellent User contact/liaison. They tend to know the operating details of the business area which will benefit from the project; they typically can roll up their sleeves and get involved in the details of the task and are the people who can easily see and realize the benefits of the project. They are also usually the most eager of all the users to participate in the project.

Some choices that need to be made in recommending a user contact/liaison:

- Which staff level? Clerical, supervisory or managerial?
- Extent of business knowledge needed in the affected area?
- Degree of overall computer knowledge required?
- Degree of eagerness to participate in the project?
- Amount of time available to devote to the project?

Project Manager -

The college or university is committing to the development and possibly the maintenance, of a production level application for a non-profit and so it is important that the institution is well represented and that it has the best Project Manager in place.

We need to make the match of the Project Manager to the project and some of the choices in making the match include selecting a Project Manager with the appropriate experience levels, including:

- software project management
- technical acumen
- liaison and planning skills
- user related business knowledge
- leadership abilities
- maturity, dependability and track record
- prior ASL experience

The Project Manager may, in fact, be the class Instructor, User Liaison/Contact person or an IT staff member from the college or university. When we review the broad skills set required and dedication to the project, the Class Instructor is most often chosen as the Project Manager. [3]

CONCLUSION

It may be tempting, in light of the fact that an institution is committing to guiding an IT project to conclusion for the benefit of a non-profit, to simply forge ahead in an eager and well meaning manner. After all, are we not giving of our time, people, resources, experience and talents in a noble effort to assist a non-profit organization which would not otherwise be able to conduct such a project?

But, temporarily placing our enthusiasm aside, we must keep in mind several important thoughts, including:

- that the non-profit has expectations and is dependent upon the institution
- the students' expectations need to be managed and met
- the project should pertain to the associated class
- regardless who may be the beneficiary and who may be leading the effort, it remains a software development project and should be managed as such

Essentially, a successful project outcome comes down to thinking about all of the choices and matches that need to be made; making the correct choices and leading the effort to the best of one's abilities for the sake of the non-profit, the school and the students involved.

REFERENCES

[1] Almstrum, V. Condly, S, Johnson, A. Klappholz, D., Modesitt, K., and Owen, C., A Framework for Success in Real Projects for Real Clients Courses, in Ellis, H., Demurjian, S., & Naveda, F., (eds) (2008). Software Engineering: Effective Teaching and Learning Approaches and Practices. Hershey, PA: *IGI Global*.

[2] Carter, Mary. A Profile of Service Learning Programs in South Carolina and their Responsiveness to the National Priorities. Ann Arbor, Michigan: Bell & Howell Company, 2009.

[3] EPICS Program, Purdue University, http://epics.ecn.purdue.edu/, 2008.

[4] Gibson, J. Paul and O'Kelly, Jackie, Software Engineering as a model of Understanding for Learning and Problem Solving, *ICER*, Seattle, Washington, October 1-2, 2005.

[5] Hatcher, Julie and Robert Bringle. "Reflection in Service Learning: Making Meaning of Experience," *Educational Horizons* (1999): 179-185.

[6] Murray, M. and Guimaraes, M., Expanding the Database Curriculum, *Journal of Computing in Small Colleges* 23, (3), 69-75, 2008.

[7] Olsen, Anne, L., A Service Learning Project for a Software Engineering Course, *The Journal of Computing Sciences in Colleges, 24*, (2), 130-136, 2008.

[8] Patterson, D. et al. *Spinning Interdisciplinary Service Learning Webs: A Secondary Approach*. Baltimore: Maryland Student Service Alliance, 2005.

[9] Silcox, Harry. *A How to Guide to Reflection: Adding Cognitive Learning to Community Service Programs*, Philadelphia: Brighton Press Inc., 2003.

[10] www.servicelearning.org

[11] www.wikipedia.org/wiki/Service_learning