

Case Study Assignment #1 – Solution

1. A software house has developed a customized order processing system for a client. You are an employee of the software house that has been asked to organize a training course for the end-users of the system. At present, a user handbook has been produced, but no specific training material. A plan is now needed for the project which will set up the delivery of the training courses. The project can be assumed to have been completed when the first training course starts. Among the things that will need to be considered are the following:

- Training materials will need to be designed and created.
 - A timetable will need to be drafted and agreed.
 - Date(s) for the course will need to be arranged.
 - The people attending the course will need to be identified and notified.
 - Rooms & computer facilities for the course will need to be provided for.
- a. Identify the main stakeholders for this project.

Solution:

Main stakeholders might include:

- Client management – concerned that they have an effective accounting system and one aspect of this is that staff can use it effectively; also concerned about costs
 - User management – at a lower level than the above, they would share the higher management concerns, but also have operational ones such as cover in the office when staff attend training courses.
 - Users – they must feel that training is effective and relevant, concerned that it should not be inconvenient in terms of travel, timing etc.
 - Trainers – that appropriate training materials are produced that will meet the expectations of users etc.
 - Technical support – that a version of the new software is set up in a training environment suitable for use on the courses on time
- b. Draw up a statement of the objective(s) for this project.

Solution:

Objectives goes something along these lines:

“To have in place by (dd/mm/yyyy) all the materials and arrangements needed to enable the delivery of the training courses relating to the user of the accounting package ABC at organization XYZ within the budget specified”. Note that the

actual delivery of the material and training of staff is just outside the boundary of the 'project'.

c. For the objective(s), identify the measures of effectiveness.

Solution:

A checklist that can be used on dd/mm/yyyy that the necessary arrangements are in place. e.g.

- Rooms and equipment booked.
- Delegates notified.
- Training materials prepared.
- Etc.

d. For each objective, identify relevant sub-objectives or goals and who would be responsible for each of them.

Solution:

The checklist mentioned above could also be used to identify goals, e.g. • Rooms booked – training administrator, premises manager. • Dates/times of course notified to selected delegates: training administrator.

- Training materials prepared: trainer.
- Catering booked: training administrator, catering manager. • Installed software: technicians.
- Training materials copied: reprographics.

2. Most of the time, the need for defining what is to be learned from a prototype and the way that it will be evaluated to obtain the new knowledge are strongly required. Outline the learning outcomes and evaluation for the following:

a. A final year degree student is to build an application that will act as a "suggestions box" in a factory. The application will allow employees to make suggestions about process improvements and will track the subsequent progress of the suggestion as it is evaluated. The student wants to use a web-based front-end with a conventional database. The student has not previously developed any applications using this mix of technologies.

Solution:

Here it would appear that the prototype is mainly a technical one to learn how to connect a web front-end to a database:

- i. It should also examine how well such a configuration works in a real operational environment.
 - ii. Further questions relate to what would be an effective and easy-to-use web interface for use in a factory environment.
 - iii. The application could be implemented in one factory first for a trial period to see if employees were willing to participate in the scheme.
 - iv. The student would need to be careful in making clear what the main focus of the project was.
- b. An engineering company has to maintain a large number of different types of documents relating to current and previous projects. It has decided to evaluate the use of a computer-based document retrieval system and wishes to try it out on a trial basis.

Solution:

- i. Does the package meet its requirements?
 - ii. Is it easy to use?
 - iii. Does it have all the functionality that they need?
 - iv. Is it secure?
 - v. Etc., etc.
- c. A business which specializes in 'e-solutions' – the development of business applications that exploit the WWW has been approached by the computing school of a local university. The school is investigating setting up a special website for its former students. The website's core will be information about job and training opportunities, and it is hoped that this will generate income through advertising. It is agreed that some kind of a pilot to evaluate the scheme is needed.

Solution:

The learning objectives here seem to relate mainly to the business case.

- i. Would former students want to access the website?
- ii. Would employers want to put job vacancies on the site?
- iii. Would they be willing to pay to do so?

If you wanted to use a physical prototype you would have to get the system up and running and to have it well-publicized.

Preliminary surveys of former students and of employers might be a cheaper and safer way of getting the information you need.

3. Considering ONLY these SLC models: *Waterfall*, *V-Shaped*, *Spiral*, *Evolutionary Rapid Prototyping*, *RAD*, and *Incremental*; select the most

suitable lifecycle **models** for the scenarios below (provide your reasoning for each one):

- a. Developing an updated version of a factory operating system. The project includes the addition of 24 new functions, bug fixes, and enhanced UI. It is required to have at least 14 of the new functions ready for operation within 2 to 3 months, while the rest of the functions can be added in the next 4 months through one or two updates. Budget is reserved for the project up front and there is a chance for a good bonus if the whole project was delivered within 3 months. You are responsible for hiring the staff and determining their level of experience.

Solution:

- i. **Incremental:** This is the best match without considering the bonus. This is mainly due to the way the requirements are laid down: 14 core functionalities and 10 incremental ones over two updates. Also, the hiring is up to the supplier, so experienced staff can be hired as needed.
 - ii. **Prototype and RAD:** Those two allow for a very fast complete product to show up (within the desired 3 months), meaning the bonus could be within reach. This is applicable as most of the requirements are well-defined, budget is known (+ bonus), you (the supplier) can hire very experienced staff and use code generators, the requirements are designed to be divided into parallel streams, etc.
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- b. A new technology has been recently introduced for wireless transmissions. An electronic company (medium-sized) wants to design a new product that uses this technology and be the first one to do so. The company has previous experience in wireless communications, but this is the first time it tries an extremely new technology. Engineering teams will be assembled from the current staff, with a possibility of hiring up to 4 field-specific specialists. Training/education on the new technology will be provided by the designer of the new technology for 10 days. The company wants to show either a working product (with basic functionality) or a proof-of-concept prototype in an upcoming conference four months from now.

Solution:

- i. **Rapid Prototyping:** This would be a good choice. Experience is there but not for the new technology; so, using many prototypes seems

logical. Also, there is a good chance of having one of the prototypes as a proof-of-concept demo at the conference.

- ii. **Incremental and Spiral:** These also can be considered: The project has a high-risk factor, so spiral SLC can help ensure a successful project, if time was available. Incremental also can be used if the aim is toward presenting a working product with limited functionality. Money will be a lower risk for both as the payments will occur on stages.
- c. A company wants to create a modern version of its current sales system. No new functions are required except for allowing the addition of different discount schemes in the future. You, as the supplier, are required to provide one or two prototypes during your development of the software. However, it is all up to when the client company hires an experienced evaluator. The emphasis is on verifying the current functions of the software are successfully transferred to the new software.

Solution:

- i. **Variations of V-Shaped (Sharktooth or Sawtooth):** There is low client interaction requirement, the requirements are well defined and the emphasis on the verification, and the project is low-risk one. Based on all of this, the sharktooth variant of V Shaped SLC is the best approach. However, you can just use the V-shaped as is, if the client didn't hire the experienced evaluator.
- d. A software project where the client demands his continuous involvement in the project, as they have some experience and want to add to it for future collaborations.

Solution:

- i. **Rapid Prototyping, RAD, and Spiral:** The three SLC models need a lot of users' presence when developing a software project. However, Spiral is only considered when time is not a problem and the project is of a higher risk.