

Case Study on SE Models

Objective: To identify the suitable software development model for the given case studies/scenario.

Identify the most appropriate SDLC model for these scenarios.

Case Study-1

“ABC” is a new enterprise recently started by a few young entrepreneurs, intended to develop robotic systems using IT based solutions. “TENZ” is a well-established automobile manufacturing plant, interested in automating some of the operations of the plant as first step towards automation, TENZ has decided to deploy a robotic arm to pick and place large number of bolts from one tray of a conveyer belt to another tray of a different conveyer belt. Moving one bolt at a time. TENZ has asked ABC for demonstration the robotic arm for the said purpose as a proof of concept. This is the first project being executed by ABC. TENZ would like to have a first experience of the robotic arm before signing the MOU (Memorandum of Understanding) with ABC. After MOU sign-off, TENZ would provide the complete set of requirements of the robot.

Case Study-2

ABC is an international software house. ABC is currently working on a project that is totally new for the development team and even the client is confused about the requirements of this project. Hence this company is facing difficulties because they fail to apprehend user requirements properly. For this project, it is decided to build a sample application and show it to the client for feedback. In the context of this above scenario as a project manager what will be the choice of the software lifecycle model?

Case Study-3

SMART_TECHY is a software development company working for online shop of electronic equipment. The different tasks that are expected from the teams in the company are as follows:

- The registered users must be allotted with an initial password after registration the user should be able to change the password keep his/her account secure.
- The people who are browsing through the shopping website, want to subscribe through the mailing list so that they can get updates about discount, availability of the product and they can buy the product.
- The graphics on the website must be catchy, to the point and must be optimized for memory and time.
- The admin must give security support so that there is no unauthorized access by earlier employees or other intruders.
- The shopping must be available on mobile app, so that all the data can be saved on cloud, and it can be accessed from anywhere.
- Finally, all the information should be stored in a database in a proper data model

Suppose you are a project manager for a software product in a new and growing market with your competitors who are also developing a product will be the same product. Which model to select and why? How will you decide the tasks and the assignment to the team members?

Case Study-4

There is a software project called “Election management system” and we want to choose a process model. What do you think is the suitable one? The software requirements are clear.

Case Study-5

Video-Rental LTD is a small video rental store. The store lends videos to customers for a fee, and purchases its videos from a local supplier. A customer wishing to borrow a video provides the empty box of the video they desire, their membership card, and payment – payment is always with the credit card used to open the customer account. The customer then returns the video to the store after watching it. If a loaned video is over due by a day the customer’s credit card is charged, and a reminder letter is sent to them. Each day after that a further card is made, and each week a reminder letter is sent. This continues until either the customer returns the video, or the charges are equal to the cost of replacing the video. New customers fill out a form with their personal details and credit card details, and the counter staff give the new customer a membership card. Each new customer’s form is added to the customer file. The local video supplier sends a list of available titles to Video-Rental LTD,

who decide whether to send them an order and payment. If an order is sent, then the supplier sends the requested videos to the store. For each new video a new stock form is completed and placed in the stock file.

Case Study-6

To develop the Home Health portion of General Hospital that keeps track of the billing and Medicare requirements and payments. The current system was not scalable to the growing needs and transformation within the environment. Thus, in addition to specific desirable criteria of the chosen software, our explicit purpose in helping General was twofold: 1) to modernize their operations with current technology; and 2) to provide the best patient care available to their clients in the Home Health arena.

Case Study-7

The Income tax filing portal, will undergo changes as and when the change in the income tax rules come into effect. The requirements are clear and already existing systems may have to undergo changes.

Case Study-8

The required LMS is a digital learning environment used to support learning in schools with students from age 4 to 18. It is intended to replace an existing system (Glow) that was specially built for the purpose and which includes its own applications for e-mail, etc. Clients are from non-technical background. Users did not care about the system requirements and did not have time to interact with the development team. Secondly, stakeholders simply did not understand the terminology or approaches used – terms such as use-case simply made no sense to them.

Case Study-9

Airbus 340 flight control system is a safety critical system that implements the fly-by-wire flight system on the Airbus. The Airbus A340 is a long-haul aircraft that includes a critical fly-by-wire flight control system that mediates pilot commands and controls flight surface actuators. This is a development of the first fly-by-wire system which was introduced in the Airbus A320 aircraft.

Case Study-10

You are interacting with the MIS department of a very large oil company with multiple departments. They have a complex regency system. Migrating the data from this legacy system is not an easy task and would take a considerable time. The oil company is very particular about processes, acceptance criteria and legal contracts.

Hint: Below table will assist in making a proper selection of process model.

Factors	Waterfall Iterative	V-Shaped	Evolutionary Prototyping	Spiral	Iterative and Incremental	Agile
Unclear User Requirement	Poor	Poor	Good	Excellent	Good	Excellent
Unfamiliar Technology	Poor	Poor	Excellent	Excellent	Good	Poor
Complex System	Good	Good	Excellent	Excellent	Good	Poor
Reliable system	Good	Good	Poor	Excellent	Good	Good
Short Time Schedule	Poor	Poor	Good	Poor	Excellent	Excellent
Strong Project Management	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Cost limitation	Poor	Poor	Poor	Poor	Excellent	Excellent
Visibility of Stakeholders	Good	Good	Excellent	Excellent	Good	Excellent
Skills limitation	Good	Good	Poor	Poor	Good	Poor
Documentation	Excellent	Excellent	Good	Good	Excellent	Poor
Component reusability	Excellent	Excellent	Poor	Poor	Excellent	Poor