Selecting Software Development Lifecycles

## **Group 1**

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1. An organization is rewriting its Accounts Payable system to move it from an old batch-type mainframe system to a Web-enabled system. No new functionality will be added. The statement of work calls for conversion “as is”. Only the input and output systems will be altered for the new environment. Because it is a financial application, testing and verification will be emphasized within the development activities. The schedule allows five months for the project, with two people working on it. What do you think is the most appropriate life cycle approach? What is the advantage of this approach for this project?

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| Characteristic | Score | Explanation |
| Goals & Values | Plan- Driven Home Ground | Predictable, high assurance (since financial system) |
| Industry | Plan- Driven Home Ground | Stable |
| Organization | Agile Home Ground | Agile organization (since they are open to moving from a legacy system to a web-enabled system) |
| Customer / Product Owners | Agile Home Ground | Few, dedicated, co-located (Accounts payable system is used by Accounting team) |
| Software Requirements | Agile Home Ground | Fixed scope, Single project focused (Since no new functionality will be added; only input and output systems will be altered) |
| Software Application | Plan- Driven Home Ground | Legacy app (Since existing mainframe system needs to be migrated to a web-enabled system) |
| IT Team | Agile Home Ground | Small generalists |

The project should be a **Hybrid/Iterative** one.

The Software we are trying to build here is a financial application and requires high assurance since it will be used by the accounting team and needs to be accurate from day one. The Financial Industry is a stable one where the accounting rules don’t change that often. The Organization seems to be Agile since they are trying to level up and moving towards a Web-enabled system. Since this software will be used by the Accounting Team, which is co-located and few, Agile Home Ground suits this characteristic. Also, since no new functionality will be added and only the input and output systems are changing, we can assume it’s a fixed scope project. The original system is a legacy system; so, we are safe to assume that it has a huge code base. Since only 2 people will be working on it, it’s a small team of high performing and knowledge sharing individuals. Some addition benefits of using this approach are being able to continuously testing to ensure the accuracy of the application. It uses an iterative approach to identify issues and test to resolve them fast and efficiently. Any modifications throughout the project this way allows the project plan to continue without disrupting the other processes. Overall, there is a balance between flexibility and planning.

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2. An electronics company has recently decided to venture into a business area developing smartphones. The smartphone will be designed to run on high-speed networks. The company has considerable previous experience with low cost, voice and text only, mobile phones and believes that a cheaper price could present a value-added challenge to the smartphone market. It would like to have a working model to present at a national electronics fair coming up 90 days from now. What do you think is the most appropriate life cycle approach? What is the advantage of this approach for this project? **(Omkar)**

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| Characteristic | Score | Explanation |
| Goals & Values | Agile Home Ground | Rapid, Responsive delivery of value because they are aiming to deliver in 90 days at a national electronics fair. |
| Industry | Agile Home Ground | Turbulent/ Rapidly evolving as the smartphone industry evolves rapidly with lifecycle of a version of a smartphone often just a year and requiring pivots. |
| Organization | Agile Home Ground | Agile organization (able to transfer what was learnt from making low cost, voice, and text only mobile phones and applying into making smartphones designed to run on high-speed networks) |
| Customer / Product Owners | Plan-Driven home ground | The customers for the smartphone will be many, not dedicated and not co-located as they are targeting the smartphone market. |
| Software Requirements | Agile Home Ground | Small/flexible scope as the smartphone development market scope depends on what new technologies are available, low development interdependence as the development of the smartphone software isn’t dependent on anyone, low clarity as the electronics company does not know if they will make it, low stability over time signifying the challenges that my arise given the development cycle going on for too long. |
| Software Application | Agile Home Ground | Small code base as the company recently decided to venture into developing smartphones, non-strategic/non-critical as the only thing at stake is the position of the mobile company in the market, which won’t suffer as much as the company has considerable experience with low cost, voice and text only, mobile phones. |
| IT Team | Agile Home Ground | Small, generalists, co-located, high-performing, stable/cohesive, using tacit/shared informal knowledge as the team will have to be comprised of highly skilled individuals with a wealth of experience. |

The Project should be an **Agile Life Cycle one**.

The electronics company should adopt an Agile life cycle approach for developing smartphones. There is a need to meet short deadlines (90 days) and deliver a completed product or a working model to present at a fair. There is a need for highly skilled individuals who can understand and learn the older knowledge the company has from its experience with low cost, voice and text only mobile phones and apply them to the new project. With the pace that the smartphone market is changing, they also need to pivot onto new technologies quicky and effectively. Agile methodologies in this case allow for the smartphone to be developed in sprints of maybe 1 week or less to help them track how far they have come and how much more work is required to complete the task. Agile also allows the software development to be flexible and allows the process to be flexible, changing aspects of the process to meet the customer and market demand. By using Agile, the electronics company can create a working model within 90 days (about 3 months) for the national electronics fair and generate more valuable feedback from the conference. The advantage of this model is it gives the electronics company the necessary agility to pivot from its experience in low cost, voice and text only mobile phones to something completely opposite, a smartphone working on high-speed internet networks. Week-long sprints can give them the necessary progress needed to achieve making a working model to present at CES in 90-days. An agile approach will also allow the company to pivot according to market needs, internal feedback, new alignment quicker to achieve the product they need. -------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

3. A leading consumer goods company has recently completed a 3-year process to develop a global configuration management system. It is now ready to move into the next phase, where new releases will be issued approximately every three months. An average of 12 new features and an appropriate number of bug fixes will be included in each release spread across teams composed of one to three engineers, located in India, Russia and the United States. Development times for the new features can range from one to five months. Some features can require multiple releases for full implementation. What do you think is the most appropriate life cycle approach? What is the advantage of this approach for this project?

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| Characteristic | Score | Explanation |
| Goals & Values | Agile Home Ground | Rapid, responsive delivery of value (releasing a new feature every 3 months) - iterative |
| Industry | Agile Home Ground | Turbulent/rapidly evolving (with new global config management system) and phases between releases |
| Organization | Agile Home Ground | Agile organization (adaptability to change and develop between different teams) |
| Customer / Product Owners | Agile Home Ground | Few, dedicated, co-located (engineers in different regions – agile emphasized cross-functionality) |
| Software Requirements | Plan- Driven Home Ground | Large, fixed scope, high stability over time (stable number of new features) with bug fixes |
| Software Application | Agile Home Ground | New global configuration management system (manageable increments allowing flexibility) |
| IT Team | Agile Home Ground | Small generalists, high performing, shared knowledge |

The project should be an **Agile Life Cycle one**

The consumer goods company should adopt an Agile life cycle approach for this new global configuration management system project. There is a high need for frequent releases, the cross-functional teams are spread across diverse locations such as Russia, India and the US, and there is variable development times that range from one to five months. Agile methodologies in this case scenario really excel in accommodating these project characteristics by providing the flexibility to adapt to the changing requirements. Agile also allows for fostering collaboration among these cross functional teams and having regular delivery of incremental value to customers with the iterative approach. By using Agile, the company will have efficient responses to changing market dynamics, constant user feedback, and an overall customer-centric focus, which further would help with the project’s success.

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4. The marketing department of an investment management organization has created a new business division focused on developing a new mobile phone app and taking the app to market. Approximately 12 people will be transferred from key areas of the company to form the base for the venture. Given the competitive landscape, a primary goal of the team is to release the app as soon as possible. Significant enhancements and revisions are expected to follow after the initial release and last for a period of 12 to 18 months. What do you think is the most appropriate life cycle approach? What is the advantage of this approach for this project? (Siian)

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| Characteristic | Score | Explanation |
| Goals & Values | Agile Home Ground | Key Goal is rapid delivery |
| Industry | Plan-Driven Home Ground/Agile | Financial Services industry is mature, stable, and highly regulated  Mobile App landscape is highly competitive |
| Organization | Plan-Driven Home Ground | Investment Management firms are plan-driven value procedure, policies, and control due to its role with financial markets and investors. |
| Customer / Product Owners | Plan-Driven Home Ground | Mobile app customers are many and not co-located |
| Software Requirements | Agile Home Ground | Small/flexible scope; single project focus; significant enhancements & revisions to follow after initial release. |
| Software Application | Agile Home Ground | Greenfield- Mobile app from scratch; (manageable increments allowing flexibility) |
| IT Team | Agile Home Ground | Approximately 12 people will form base for venture and are specifically chosen; co located |

The project should be a **Hybrid/Iterative** one.

Considering the firm-industry and project mix, a Hybrid/Interactive approach should be chosen. The firm and industry are traditionally structured so the organization would lean towards a plan driven execution. Meanwhile, the project itself intends a rapid mobile app launch with an expectation of continuous improvements for a short period of 12-18 months which signals a iterative process. Hence, a hybrid approach should be approached. A plan driven execution plan should be implemented for the first iteration; then, an agile approach should be applied for the improvements/enhancements based on customer feedback.