Identify Which Process Model/Models/Combination Would Be Suitable For The Given Scenarios And Why

Screenshots,

QUESTION

Identify which process model/models/combination would be suitable for the given scenario and why, Aga Khan Hospital is planning to make a new system to record patient information who are suffering from mental disorders. It also keeps tracks of the treatments they have received, both medicinal and therapy related. Aga Khan wants to deploy this system in its city-wide clinics and can be accessed via laptop on a browser. This is so that it may be accessed and used from sites that do not have secure network connectivity. The reason for this being when the local systems have secure network access, they use patient information in the database, but they can download and use local copies of patient records when they are disconnected. The system is not a complete medical records system and so does not maintain information about other medical conditions. However, it may interact and exchange data with other clinical information systems. This system has two main purposes: a. To generate management information that allows health service managers to assess performance against local and government targets. b. To provide medical staff of the clinic with timely information to aid in the treatment of patients

ANSWER

A software process model is a digital or hand-written model that details the software development process. Process models help provide a visual representation of the development process for both the team and the customer to review [1]. There are different types of software process models, such as waterfall, prototyping, incremental, spiral, iterative, RAD (rapid application development), and agile [2] [3].

For the given scenario of Aga Khan Hospital's system to record patient information who are suffering from mental disorders, I would suggest using a **spiral** model or a **combination** of spiral and agile models. Here are my reasons:

- A spiral model is a risk-driven approach that combines elements of waterfall and prototyping models. It consists of four phases: planning, risk analysis, engineering, and evaluation. The project passes through these phases repeatedly in a spiral until it reaches completion [2].
- A spiral model is suitable for large and complex projects that require frequent changes and have high uncertainty. It allows for early identification and mitigation of risks, as well as user feedback and validation at each iteration [2].
- The scenario involves developing a system that can be accessed via laptop on a browser from sites that do not have secure network connectivity. This poses some technical and security risks that need to be analyzed and resolved before proceeding with the development. A spiral model can help with this aspect by conducting risk analysis at each cycle.
- The scenario also involves interacting and exchanging data with other clinical information systems. This requires integration testing and compatibility checks with different systems. A spiral model can help with this aspect by performing engineering tasks such as design, coding, testing, etc., at each cycle.

- The scenario also has two main purposes: to generate management information and to provide medical staff with timely information. These purposes may have different requirements and priorities that need to be balanced and satisfied. A spiral model can help with this aspect by evaluating the product at each cycle against the objectives and expectations of the stakeholders.

Alternatively, a combination of spiral and agile models can also be used for this scenario. Agile models are based on iterative and incremental development that emphasize collaboration, communication, flexibility, adaptability, customer satisfaction, and working software [2]. Some benefits of using an agile approach are:

- Agile models can deliver working software faster than traditional models by focusing on delivering small but valuable features in short iterations called sprints [2].
- Agile models can accommodate changing requirements more easily than traditional models by allowing for frequent feedback from customers and users throughout the development process [2].
- Agile models can improve quality by encouraging practices such as test-driven development (TDD), continuous integration (CI), continuous delivery (CD), pair programming (PP), code reviews (CR), etc., that ensure code quality and reliability [2].

A combination of spiral and agile models can leverage the strengths of both approaches by using a risk-driven strategy for planning and analysis phases while using an adaptive strategy for engineering and evaluation phases.

I hope this answers your question! 😊

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QUESTION

Identify which process model/models/combination would be suitable for the given scenario and why: HBL is shifting from a physical baking form to an online one via the use of a mobile application. Due to the competitive market, they need to launch their app as soon as possible. Since banks perform a variety of tasks for users like transfer of money, bill payment, phone balance etc, the app will have a variety of modules that can be added one by one. However, since a wide variety of users from different backgrounds will be using the app, their input is important, along with a simple design, good quality and good software practices. Since it is a banking app, high quality and testing is a must. After the app has been released and been updated with a certain amount of features, the bank wants to focus more towards improvement of the app. Provide three examples of software projects that could be done with waterfall model and why? Give three advantages and three disadvantages of incremental and agile process models

ANSWER

For the given scenario of HBL's mobile application for online banking, I would suggest using an **agile** model or a **combination** of agile and incremental models. Here are my reasons:

- An agile model is based on iterative and incremental development that emphasize collaboration, communication, flexibility, adaptability, customer satisfaction, and working software [1]. It consists of short iterations called sprints where small but valuable features are delivered to the customer frequently [2].
- An agile model is suitable for projects that have changing requirements, tight deadlines, high uncertainty, and complex functionality. It allows for frequent feedback from customers and users throughout the development process and accommodates changes more easily than traditional models [1] [2].
- The scenario involves developing a mobile application for online banking that needs to be launched as soon as possible due to the competitive market. This requires a fast delivery of working software that meets the customer's needs and expectations. An agile model can help with this aspect by focusing on delivering small but valuable features in short sprints [1] [2].
- The scenario also involves developing a variety of modules that can be added one by one to the app. This requires a modular design that allows for adding new functionality without affecting existing functionality. An agile model can help with this aspect by using practices such as test-driven development (TDD), continuous integration (CI), continuous delivery (CD), etc., that ensure code quality and reliability [1] [2].
- The scenario also involves getting input from a wide variety of users from different backgrounds who will be using the app. This requires a user-centric design that considers the user's needs, preferences, and feedback. An agile model can help with this aspect by involving users in every stage of the development process through user stories, prototypes, demos, etc., that elicit user feedback and validation [1] [2].

Alternatively, a combination of agile and incremental models can also be used for this scenario. Incremental models are based on dividing the development phases into various sections based on user feedback. Each section delivers a part of the system functionality until all requirements are met [1]. Some benefits of using an incremental approach are:

- Incremental models can reduce risks by delivering parts of the system early and getting feedback from customers and users before proceeding with further development [1].
- Incremental models can improve quality by testing each increment separately and integrating them gradually into a complete system [1].
- Incremental models can increase customer satisfaction by delivering working software frequently and meeting their expectations progressively [1].

A combination of agile and incremental models can leverage the strengths of both approaches by using an adaptive strategy for delivering increments in short sprints while getting frequent feedback from customers and users.

Some examples of software projects that could be done with waterfall model are:

- A project that has clear and stable requirements that do not change over time
- A project that has well-defined specifications and standards that need to be followed strictly
- A project that has low complexity and risk

Some advantages of incremental and agile process models are:

- They can deliver working software faster than traditional models
- They can accommodate changing requirements more easily than traditional models
- They can improve quality by testing each increment or sprint separately

Some disadvantages of incremental and agile process models are:

- They require more communication and collaboration among stakeholders
- They may not have a clear vision or plan for the final product
- They may not document enough details or documentation

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