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Assignment 1 of Subject Software Process and
Management

Assignment Title	SWEN90016 Software Process and Management Assignment 1
Subject Number	SWEN90016
Subject Name	Software Process and Management
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1. Identify a major goal for the initial development of the software product.

(Initialization: business needs analysis, analyse constraints and stakeholder analysis.)

The major goal is the business need which is to solve the problem about the slowness to update information and hard to use in the existing football platform websites, and let the user can get the immediate information about their favourite football teams.

2. Identify the value of the software product to a stakeholder.

Simon and Jamie can earn considerable income through subscription fees and build their strong relationship because they are fully accessible to the football interest.

The development team from UoM can gain the experience and skills during the process.

The fans of football, they can obtain their teams information updated on the website and communicate with like-minded people.

3. Identify four high level features.

Requirement	Priority	Justification
To provide information on the different football leagues on the YFootball	High	Without the basic information of each football league, the website does not have the most basic data. The core information and the key points to attract users must be established as soon as possible ¹ .
To let users log in the website to store their personalized data settings (username, password, postcode) and then show the information based on the time and date at the home location by accessing users' location function	High	With the user and its customized data, the website can further allow users to make choices and deliver information based on data analysis about them. The users are the foundation of the website, so this feature must be completed first.
To let users choose three favourite teams and give them a notification of new information about their teams.	Medium	This function is the main personalized feature of the website and the key to attract users and distinguish it from other websites

		of football. Completing it can help the website attract participants, who are users, as soon as possible.
The YFootball website should display live data of all matches from reliable news source in a user-friendly way.	Low	This function can enrich the content of the website, and at the same time can increase user stickiness. Furthermore, it can become one of the reasons why users repeatedly browse the website.

4. Identify two challenging characteristics.

- a. Obtain the location function permission of all users:
As more users care about their privacy, it becomes more difficult to obtain user device information. For the YFootball platform, users may not understand why the platform about football needs personal location information when registering, so the location function is not authorized. The time of the information presented to those unauthorized users in this way may not match the user's local time, which makes user feel that the information is confusing. Making a fuller explanation of the reasons when applying for accessing can help more users authorize the website to obtain the location function.
- b. Information integration and screening:
For YFootball website, it integrates team information from multiple football leagues and constantly updates the content. The algorithms and AI involved in updating information will be difficult. For example, for a team 's playing list, some information may be accurate, and some may be guesses about the list. In addition to this, the information obtained by the users may be repeated, such as getting the final score of the match multiple times. Converging accurate information and not repeatedly pushing it to users is one of the challenges.

5. Identify two risks.

- a. Legal disputes about news citations (business risk):
Since YFootball is a for-profit website, it must obtain their permission to use the news, information or data of other senior institutions. If the process of negotiation and getting permission is not smooth, the website will not have reliable information which

would cause users churn.

A proactive action is to ensure the professionalism of the legal personnel employed can avoid the illegal use of information from sources outside the website. And website can also purchase information from major and trusted news sporting outlet, such as ESPN and etc., to ensure that the website can grasp the first-hand information of football matches and update them to users.

b. Website data storage pressure (software risk):

Since the website needs to quickly update the various information of each team, the exponentially increasing amount of information will have a huge pressure on the storage capacity of the server. Crashes may occur due to overload.

Proactive actions: pre-screen data before store it (buffer); the website only stores the users' core information, and the football news is stored in the cloud such as onedrive and apple cloud; using a distributed system².

6. Discuss two possible lifecycle models you would consider for the project SDLC model. This should include the pros and cons of each of your choices referring to specific project characteristics and risks you have identified. Use case study references to support your argument. Use at least 2 references to strengthen your argument.

a. Incremental SDLC Model:

In this case, the incremental model can be used with various advantages.

- (1) Compared with the waterfall model, the incremental model has smaller and easier modules. Although the student group from UoM has successfully developed software project, this YFootball project is still quite difficult for a non-professional group. Smaller modules can make everyone in the team have fewer learning tasks and complete more efficiently. For example, team members who have experience in big data storage or distributed systems can solve risk of data storage pressure.
- (2) With the demand to complete the project in next three months, releasing initial modules earlier can provide the team with more time to complete the project.
- (3) Because the initial requirements of the project are already very clear, stable and precise, the incremental model can be used to divide the requirements into small segments to make the project more detailed, which is easy to project team to complete the work.
- (4) With the use of the incremental model, the project team can get

feedback earlier. If the requirements of the project change, only part of the process will be affected, and most of the segments are still being developed in an orderly manner, which greatly avoids the impact of change on the project process.

Cons including:

- (1) The YFootball project already lacks sufficient manpower, except for the student team of the University of Melbourne, only Simon and Jamie manage the whole project. More segments mean that product owners need to invest more energy to update the project process and control the quality of the project, which is hard for a father and son pair.
- (2) Dividing requirements into many smaller segments means the developers (students of SWEN90016) need partition skill to ensure that everyone can play to their strengths in the developing.
- (3) There is also integration risk when each partition is rigid. The function and algorithm of each requirement may not match. For example, the time of the location information obtained from the users' device and the information obtained from a reliable message source, such as ESPN, cannot be converted to each other due to different formats, resulting in an error in the time display.
- (4) In addition, excessively detailed segments will increase the required manpower and the difficulty of managing integration, which will increase the cost³.

b. Agile SDLC Model (scrum):

Scrum is a method to organize working teams with merits in each sprint:

- (1) Transparent productivity due to fast releases is one advantage. The SDLC can enable each member of the project team to continuously invest in the process. If some pages of the website and functions are not ideal after integration, both the UI and the programming department can make adjustments in the process which ensures the productivity of the entire project.
- (2) In addition, agile encourages continuous product improvement or change and timely feedback after new requirements emerging. In the YFootball platform project, future enhancements will be continuously added to the development. The profitability of the website is also awaiting further development. So there are still many needs to be kicked out. The agile can make users can quickly see a baseline architecture version of the product when the project enters the stage of substantial development iteration so that the product is more user-friendly.
- (3) And the agile also make the process efficient and code simple

which is a brilliant way for student team to gain the skills and experience during the developing⁴.

Drawbacks:

- (1) Giant “TODO” list lacks design overview which is a double-edged sword. On one hand, agile can make the product meet the users’ constantly updated needs, make the users’ early satisfaction improve, and shorten the cycle of the entire project. On the other hand, continuous adjustment and updating will make the project lack overall planning and time schedule, and there is no specific milestone to complete, resulting in the increase of project time. This is undoubtedly worse for the project with only three months of budget⁵.
- (2) Agile has a great test for the ability of product owners and development engineers (student team). Agile pays attention to the communication of people and ignores the importance of documentation. If the project staff is very mobile, it will bring a lot of difficulties to maintenance. When there are more novices in the special project, the old employees are more tired. For a student team, that could be a great problem. Furthermore, agile needs product owners (the father and son pair) with strong experience in the project, otherwise it is easy to encounter bottleneck problems in large projects, such as manpower coordination, integration progress, and release of indicators, etc^{5,6}.

7. Choose the most suitable SDLC and justify your choice referring to specific project characteristics and risks you have identified.

The SDLC selection has some criteria and parameters:

team size and skills; stakeholders’ priorities; distributed teams or not; software size and complexity; project type; risk and quality insurance; etc..

From my perspective, agile SDLC model is most suitable one.

Since the YFootball platform also has constantly increasing requirements, the project requirements are constantly changing. Agile SDLC can better meet the demand of changing needs. And in the initial project characteristics, the requirements have different priorities. With the daily scrum, showcase review and sprint retrospective, the product owners (Simon and Jamie) can ensure that the features with higher priority be completed as soon as possible.

The agile method can also do a good job in terms of cost constraints to ease the pressure and risk of cost. Moreover, if a possible risk occurs, for example, the storage system crashes due to too much information, using agile can more quickly find and correct problems,

and can specifically control and resolve risks by responsible people. Since the team members are all students of the University of Melbourne, scrum team members can have daily meeting so that the product can get more iterations and improvements which can control and response known or unknown risks.

References

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