GitHub

GitHub is a Distriubted Version Control (DVC): it stores the entire history of the files on each and every machine locally and also sync the local changes which made by user back to the server when required. All the changes can be shared with others which result in a collaborative working environment. There is another type of version control which is Centralised Version Control (CVC) which all files are kept in the server that users have access to from their local machines. One example of CVC is SVN. DVC are more advance since it offers better performance, offline capability, backup, maintainability and also more flexibility.

Benefits

* Facilitate Collaboration: GitHub allows multiple developers to work on a project using the same repository. Using Github requires developers to actively communicate with others so they can minize the case such as merging conflict. Developers have to make comment whenever they commit changes or push something. It teaches developers to use meanningful comments so they are understandable by other developers. GitHub also provide places for people to comment on the group works, it is a good place for discussion, sharing experience and encourage people. Specialised repositories can also be created in order to communicate with other departments.
* Support Continuous Integration (CI) development: CI is a software engineering practice of frequently merging all developers work copies with a shared main branch. It is getting more common especially for Open Source Software (OSS) development. GitHub is currently the largest code host in the OSS world. Automated CI services such as TRAVIS-CI is integrated with GitHub itself automates the process of integrating many out-side contributions which can bring lots of potential benefits. Anyone with an account can submit their own changes with just a few clicks. However, not many projects utilize this service of GitHub as it is reported to be underused. (Vasilescu , Schuylenburg , Wulms, & Serebrenik , 2014)
* Backup: GitHub repository is a backup it self. By having all the works in the GitHub respository, all the codes and other documents are safe and secure. Moreover, every developer has a copy of the repository with a full history. Therefore, the chance of losing data due to sever failure is really low. Nonetheless developers have to remember to push their works regularly to minimise the risk of losing codes.
* Project tracking: GitHub provides a simple way to keep track of different versions of your works by providing easy access to different repositories over time. In case of the current code does not work well and begin messy, developers can always move back to the last commit for a fresh start.
* Offline capability: developers work locally most of the time without network access. Tasks such as commits, create branches are not required internet connection. All the updates can be uploaded later until connection is up.
* Maintainability: restructuring can be done on a copy repository before being trainsmitted to the original repository.

There are so many reasons and advantages of using GitHub to develop software. This regards to project communication and collaboration, project tracking and quality assuarance. Therefore, the capability of using GitHub should be compulsory for any developers thus this could be a challenge for the firm. However, GitHub has a friendly design and easy to begin with. With a proper learning session, the organization can quickly upskill its developers.

Microsoft Project 2016

Microsoft Project 2016 is the world’s most popular project management software which developed and sold by Microsoft. It is a tool widely used by project managers to sketch a project plan, tracking progress and assign resources to task. It also helps to manage the firm budgets. All 5 project management process groups can be effectively managed by using Microsoft Project.

Benefits

* Project Intiating: using resource sheet view in Microsoft Project, the project manager can easily make a list of people that are going to work for that project. Microsoft Project also assists in classifying different types of resources and assign distinct wages rates for every category. This process also aids the project cost estimation aspect as resources usage cost is a significant part of any project.
* Project Planning: project manager can generate a project schedule using a Gantt Chart, tasks resource assigning is completed effortlessly by just a few clicks with the resouce sheet had been prepared. Another handy feature is Microsoft Project notifes users when there is an overlapping resouce assigned. Project plan is then visualized by switching to Network Diagram view. A critical path is automatically generated in Microsoft Project showing the path which the project can be finished in the shortest time. Total resource cost is also done following a Schedule Baseline. User can always come up to test different scenarios to find out what something more suitable by quickly modifying Microsoft Project features. This is called “what-ifs scenario”.
* Project Executing: with automatic scheduling feature, changes are relatively easy to be made in Microsoft Project as one modifed tasks leads to other automated correlatively changes. Therefore, required updateds and adjustments to the schedule, rescheduling uncompleted tasks are simple to be implemented.
* Project Monitoring & Controlling: tracking the project progress is obvious in Microsoft Project. All charts and diagrams are visualized and easy to switch views among them. Additionally, project milestones and deliverables are also specified regularly throughout the project.
* Project Closing: actual project works can be compared to what have been estimated and planned using Microsoft Project at this time. A lesson learned report can be drawn to identify what has gone well and what needs to be improved in later projects.

Microsoft Project 2016 is undoubtedly one of the best project management tools available in the market. Microsoft is a large company and its products are renowned and proved for their reliability and efficiency. Therefore, Microsoft Project is indeed a worth investment for long term. Microsoft offers an excellent post-purchae service, constantly updates its software and releases new version every couple of years which is another advantage. We strongly recommend the organization to use this project management software.