Requirements Management Software Project Saver or Party Favour?

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Even with the development of new methodologies and processes, it would be acknowledged by many that managing requirements, while universally agreed as key to a successful project, is one of the areas in a development life cycle that gets a woeful lack of attention.

In their book Use Cases – Requirements in Context, Daryl Kulak and Eamonn Guiney propose that one of the reasons for this is the lack of flashy tools to make the task more interesting. Could they be right? With the drive to produce excellent software in short timescales, there is no room for mistakes. Could improved requirements management ensure more development is right first time? Well with the increased awareness of requirements management packages on the market, I was asked the question why should a company spend money on these development project tools?

So firstly what does requirements management (RM) software do? At the heart of a RM system is the ability to store, amend, and track changes to requirement details from initial concepts through the development and entire product life, thereby increasing constructive collaboration between all project participants. There are several big packages on the market, each with slightly different functionality and extra features. The ones I have come across most often are CaliberRM (Borland), RequisitePro (Rational) and DOORS (Telelogic), but that does not mean that other offerings are not worth a look.

Lack of communication during development, between project managers, developers, analysts and end-users is often blamed for project overrun and failure. No matter how good the analysis is, requirements do change during a project and when these changes are not communicated effectively there is often a difference in system expectation between project team members. If the business requirements change due to market pressures or legislation, or system constraints force a review of the user requirements, these changes must be communicated quickly and effectively to the right people, in order to prevent wasted development time and frustrated stakeholders.

Central to RM systems is the need to improve collaboration and this is achieved in different ways. Many systems automatically email all responsible team members if there is a change in one of their requirements. Usually these emails contain details of the change so that people can quickly see if they need to examine this change further. A second feature that many RM system use, is newsgroup-style discussion boards. These are excellent places to store information about why there might be a change in requirements and if used effectively can replace the historical email trail that bounces around between selected team members. By storing a discussion, all project members can be aware of any issues surrounding a requirement and an audit trail of those issues can be maintained.

Not only do good RM systems track changes but they also offer version control, analysis of a requirements history. and some form of base lining – where a "snapshot" of the requirements can be taken. One of the project tasks I have always hated is the struggle to get the relevant stakeholders to sign off on requirements documents. It seems that despite clear and unambiguous verbal approval, when it comes to getting a physical signature - the horse nearly always shies at the fence. Alternatively you end up making endless small changes to a document as each person wants to add their little alteration, resulting in the signoff process having to start from the beginning again. So for me one of the benefits of some RM systems is their electronic sign-off functionality which is assisted by the systems communication tools mentioned before.

The key to the usefulness of requirement management software is their ability to display the data relevant to different project roles from one central system. For the stockholders or senior managers the key features of their system can be viewed and read in an understandable format or produce beautifully formatted documents. For the analysts they can flag which requirements they are most interested in or have ownership of. System and business analysts can mark on the system how their requirements depend on one another – thereby increasing communication and understanding. Search and filtering facilities make finding requirements and viewing those relevant to a particular role much easier than with huge word documents, which tend to form the core of more traditional requirements management techniques.

Project Managers can also use these RM tools to monitor progress. They can also ensure that no requirements have been missed in the development and that system requirements have not been added that do not have a supporting business requirement (aka "gold-plating" the solution).

A key to good project management is managing change and with traditional requirements documents that can be very difficult. The idea behind RM software is that the requirements become the centre of focus for what is actually managed. The documents are merely an output of the system and requirements process. Many of the RM systems have very configurable document generators that can produce requirement details in well formatted styles or company templates. These systems can often import documents as well, allowing a project team to transfer a project in progress without re-keying.

One of the areas that traceability (the linking of a requirement to other requirements or external documents) helps project managers and analysts is impact analysis. By demonstrating the impact of a change in a requirement, the team can ensure that all relevant test procedures, user manuals and dependent requirements are checked to see the effect of the change. Some systems provide good graphical views of impact analysis and can be useful in explaining why "just adding another button" will cost the company more than 1-days effort.

So in some ways investing in a RM system is buying a flashy tool – however it appears that this tool can help people perform their job faster and more efficiently as well as encouraging more people to put more effort into the requirements gathering and on-going requirements change processes. Being an electronic system and not a huge pile of paper to wade through tends to encourage people to review requirement changes more thoroughly and not put that task on the "to do later" pile or in many cases the "someone else will do it" pile. Well worth the investment.

So to conclude, I feel that requirements management software is a central tool to enhancing project team communication and ensuring a common view of the requirements of a project. That being said it must be clarified that RM software can only help you manage the requirements put into it – it cannot help analysts gather the right requirements!!

References:

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