Rational software

Wanted: Project Management Skills, for Immediate Start

How many times have we started a sentence with 'if'? As in: "If only I had done…" or "If only I had said…" While we'll never know the outcome to any of the above, we can at least achieve the next best thing - learn from our past experiences, to positively affect the future. That's exactly what Manpower, the world leader in the staffing industry, did in 1998.

That's when the EMEA division of the human resourcing company undertook an extensive IT re-engineering exercise. The objective - to unify IT application strategy across EMEA, by providing an extensible, component-based front-office system, for deployment to half of its 4,000 offices in over 60 countries around the world.

This sounds (relatively) straightforward on paper but in reality, the international aspect of the project increased its complexity. Changing parameters such as legal jurisdictions, user-interface adaptations and variant business workflows across all of EMEA made this one of the most challenging IT undertakings in the company's 54-year history.

Manpower EMEA had the opportunity to reflect on previous experiences within the company of similar re-engineering programmes. Therefore, Manpower EMEA made a decision to adopt the technology and processes of Rational Software, as an integral part of its project management process.

Managing a project from the beginning

Rational recognises that managing a project is often a skill in itself. The positive outcome of any project is obviously dependent on all the parties working towards a common goal, but in today's information age, where projects can cross national and international borders and involve teams of staff across multiple sites, this can be difficult to achieve.

To that end, the company's solutions have been specifically designed to improve the speed, quality and predictability of software projects. The company's full life-cycle solution combines software engineering best practices, market-leading solutions and professional services.

Gary Cleal, Chief Architect at Manpower in Belgium, continues the story: "We had a complex task ahead of us, so even before the project kicked off, we were very clear in our requirements. We needed a means to ensure effective collaboration, structure, as well as a methodology to keep the project on track, so that we, in turn, could safely deliver on time and on budget. For each of these requirements, Rational provided a solution which became a key element in our overall strategy."

Effective collaboration

"Access to the architectural models, and the code structure of the application, are highly interdependent, and what used to happen was that the team members, dealing with different aspects of building the application, worked in relative isolation," Gary continued.

To combat this lack of an integrated solution, the Manpower team turned to Rational Rose®. Rational Rose is a model-driven development solution, which unifies software development efforts through modeling based on the Unified Modeling Language (UML), the standard for modeling or communicating software architecture. In a nutshell, this software enabled all the team members to use one solution and one language to communicate and understand the complexities of the application effectively.

Rational Rose has been designed so that individuals can operate in private workspaces that contain a personal view of the entire model (with the ability to modify his or her own piece of the model) until it is ready to be

shared. It is this common language which enabled Manpower's staff to not only develop their portion of the project individually, but then go on to communicate collaboratively (and therefore deliver software more closely aligned to the business requirements).

Indeed, this collaboration was a critical part of the project's success.

"Rational's solutions are designed to ensure that the end product gets delivered, but in the process, it keeps all team members in the loop. That includes the developers, as well as the executives. All too often in this type of project, 'management' and the IT team become disengaged, because neither can appreciate what the other group wants or needs."

"The end user can clearly state, early on, what features they'd like to see in the finished product, the accountants can keep a rein on budget, and the developers can explain what is, and what isn't possible. Fundamentally, it's about managing expectations and outcomes."

Structure

Because software development is a team effort, it is vital that all the team members taking part in the project understand the goals and deliverables.

Getting the requirements down in a standardised and manageable way was high on Manpower's wish list, and it still is today. Understanding customer needs is not a 'nice to have', it is a 'must-have'. It is therefore critical to create applications that will respond to these needs when the applications are deployed to the end-user community. So, gathering, managing and documenting requirements is the first and foremost step to take in building applications, which can handle the impact of ever changing business needs.

That is the thinking behind Rational® RequisitePro®, the requirements management software.

Moreover, managing the resourcing and requirements issue early on in the project prevents 'features creep' - i.e., the process during which both users and developers start asking for the impossible, or the impractical.

Keeping the project on track

A project inevitably goes through a number of changes in its life cycle, whether it's timescale, objectives or teams. All of these must be managed, without losing sight of the schedules or quality.

That is why the Rational® ClearCase MultiSite® solution was also used. Rational® ClearCase® is the only proven, high performance solution for geographically distributed project teams; Rational ClearCase MultiSite is the industry standard for remote, team-based collaboration.

Using this scaleable, high-performance solution, the teams were able to go beyond version control to include tracking every single detail in the software development cycle, including changes to every file and directory. The team from Manpower were also able to quickly roll back to any previous version or configuration, when they needed to.

What makes this achievement more impressive however, is the fact that it was replicated across all of the participating countries. As Bart Rondou, Manpower EMEA's Configuration Manager explains: "ClearCase MultiSite enabled Manpower to establish a distributed development framework, in which the different countries were able to develop their own modifications to the core Manpower application."

"Other key benefits to come out of the Rational ClearCase solution includes the 'openness' of the Rational ClearCase API (its ability to plug in wherever required); its close integration with the development environment, and its easy configuration and implementation, which saved valuable time," Bart continued.

All of these gave Manpower much sought after control, combined with an equally important flexibility.

Edo Sartini, Development Manager, IT EMEA, at Manpower continues: "Rational ClearCase provided us with a mature, working model for assuring consistency in, and collaboration between, the individual deliveries of a huge group of developers, analysts, designers and testers in multi-million dollar projects."

Quality from the beginning

One of the key drivers in getting an application adopted and rolled-out is end-user satisfaction. Therefore, the quality of the application needs to be controlled throughout the entire development lifecycle of the iterative releases of the application.

Gary adds: "Discovering bugs after the product has already shipped is a waste of time and money, and it's something we weren't prepared to put up with. Making quality assurance an integral part of the project was a key strategy adopted from the Rational Unified Process® (RUP)®. We knew that, in the long run, we were saving time and money, while also ultimately raising the quality of our final product."

In order to fulfil these needs, the team also relied on Rational® TestManager and Rational® Robot (both part of Rational Suite® TestStudio®). These provide a seamless testing process, test automation and test management. Integrating these components with the Requirements Management environment was natural, as in the end, it is the end-users' specifications that needs to be tested. Rational RequisitePro and Rational TestManager are tightly integrated; this ensures that re-use of requirements, in the development of test cases, is maximized.

Integration is key

While all of these solutions contributed significantly to the project's positive outcome, their impact is that much greater because they have been designed with full integration in mind.

An integrated tool set establishes complete traceability, from the requirements capturing, design and development phase, right through to the testing and change control procedures.

Edo Sartini adds: "The complete Rational Suite enabled us to coordinate distributed development centers by automating the software development cycle, reducing to a minimum the communication overhead, all in a 'language-neutral' way."

Share a common process

In addition to Manpower's project team, external consultants were on hand throughout the integration exercise. Inevitably, given the number of people working on the project (over 50), suggestions and different methodologies were debated.

However, it is testament to the flexibility of the Rational toolset that recommendations from different teams could be incorporated and used within its perimeters. In any event, Gary also found that the consultants and staff always reverted back to the Rational Unified Process (RUP), choosing it out of their own volition as the over-arching development process framework.

The result

Jorg Stehr, Program Director for this project, concludes: "Complexity and magnitude of the program required constant adaptations: Team members joined and left, requirements enhanced over time and even the scope was enlarged, when MANPOWER decided to make the system its global solution. In Rational we had a partner that enabled us to deal with these adaptations. Elaborated knowledge is readily available to the team and will be utilized and adapted during the lifespan of the system. Our decision to build on Rational's complete toolset was difficult as we had to replace the formerly used tools, but it was instrumental in ensuring that delivery was accomplished in time and within budget."

Gary concluded: "The processes and tools that we put in place to support our project helped ensure that there was a common vision and design; that the teams had access to the resources they needed, and that quality assurance took place as a matter of course. Ultimately it helped us to deliver on time and on budget and to mature our internal development process capabilities."

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– Jorg Stehr,
Program Director

"The solutions that Rational provides are indispensable in this industry. You've only to look at the difference in our own organisation. Using Rational, we've brought in a project at half time and a tenth of the cost of a similar project, within our organization."

EMEA's project, which started in 1999, was successfully completed three years later, in 2002.

"Most of us know how to run a project in theory, but Rational takes all the things we've learnt and facilitates their practical application."

About Rational

Rational provides a software development platform that improves the speed, quality, and predictability of software projects. This integrated, full life-cycle solution combines software engineering best practices, market-leading tools, and professional services. Ninety-six of the Fortune 100 rely on Rational tools and services to build better software, faster. This open platform is extended by partners who provide more than 500 complementary products and services.

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