IT'S ALL ABOUT PEOPLE POWER

How do you automate the sorting process when inconsistent or incomplete data characterises the mail?

The answer is PHRASE, the evolving recognition-based reasoning concept developed by Prime Vision that is proving to be the ideal springboard for numerous projects.

The first product of this new-thinking is a Last Coding Device (LCD) for TNT Post. As its name suggests, LCD is an end-of-line product that is designed to reintroduce every possible 'no-read' back into the automated sorting system. It processes every mailpiece that fails all previous scans, completing an eight OCR cascade from different vendors. And its effect has far exceeded expectations.

The technology that has been used to create LCD is unique in that it offers a solution for both machine-printed and handwritten text. It factors in everything that appears on the envelope. While comparable systems may offer similar functionality for printed addresses, Prime Vision's PHRASE technology now provides powerful reasoning for even the most difficult to read handwritten text too.

The PHRASE technology is a novel technique that recognises all address elements that appear on the mailpiece – city, postal code, street, house number, addressee, etc – and these details to find the best matching delivery point from the address database.

It is a completely holistic approach that factors in misspellings, neighbouring localities, alternative names, incorrect postal codes and missing information. All are taken into account and resolved. Indeed the Prime Vision LCD solution reads mail in the reject stream that none of the other seven OCR systems in the TNT Post process chain could read. LCD also corrects anomalies thrown up by these systems.

PHRASE is the technological development that has allowed this exceptional OCR performance. Its name is derived from 'Prime Vision Holistic Reasoning and ASsignment Engine' and this development has not only been used as the basis of the project for TNT Post but also

others that have called for end-of-line help with printed text handwriting or both. All these projects provide proof of how Prime Vision, with its huge in-house knowledge base, can swiftly create a custom solution that can be implemented and adapted for any customer.

Sprint finish LCD was a demanding project in terms of its complexity and the short length of time in which it had to be completed. Although PHRASE was at its heart, it needed a lot of custom

development to meet its aims to reduce by 10 percent the video coding of mail rejected by the other OCR readers. To achieve the seemingly impossible task, Prime Vision acknowledged that special measures would need to be taken.

Members of the R&D department had previously attended a workshop on the product development method Agile/Scrum and it was felt that this could be the ideal way to steer the Prime Vision team through the LCD development process. However such has been its success, that what started
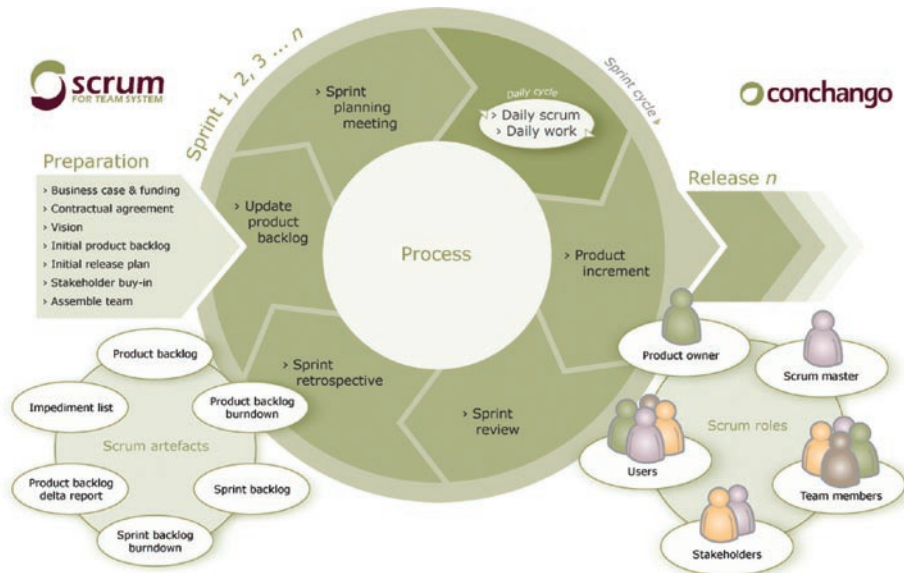
Overview of the Scrum process

essentially as an experiment has now become embedded in company processes.

R&D engineer Theo van der Donk explained: "The start of our first Scrum project was very promising but as colleagues were busy with other projects we had to get used to the idea of allocating dedicated time to the initiative. LCD was a major project so we assembled a big team and ended up with a lot of development streams running in parallel."

Working in relatively small self-determined project teams, with each responsible for an element of the whole, Prime Vision began to develop ideas. The prescribed modus operandi comprised a series of time-constrained development cycles or 'sprints' punctuated by evaluation periods during which the team assessed whether it was on the right track or needed to rethink its strategy. The process then started again, repeating until the common goal was reached. And to apply fresh eyes to different aspects of the project, some sprints involved participants only doing things that were new to them.

Group effort "What has really amazed me is that people at Prime Vision work at speed and with great efficiency when the going gets tough," comments Bert Smeets of Chaos2Work. His company was chosen by Prime Vision to implement Agile/Scrum

and it proved to be a pivotal move in focusing all this in-house talent.

"We have identified Prime Vision's DNA, the things that make it unique. Businesses that flourish manage to harness and nurture the drive, energy and potential that is naturally present in their organisation, teams and individuals. The Chaos2Work approach has helped Prime Vision tap into that source," Smeets added. "The solution is in its people. The energy released with each small change sparks the potential that is in everyone. It turns the people and the organisation into a powerhouse."

The department head sets the goals but it is the teams themselves that decide how to reach them. Smeets draws a computing analogy: "Instead of having just one processor, the system suddenly has three, four, five or more." It increases the intellectual input on the task enormously. The method works best with groups of three or more people but its lessons can certainly prove valuable even with just two people developing ideas.

"The Prime Vision culture has always been to look for ways to do things better," confirmed van der Donk. "The nature of our R&D projects is complex and there's often no clear way forward. Scrum offered the potential to create structure and also to experiment in an experimental environment. You really feel like a team

working under Scrum and it constantly challenges that team to be more effective. It's a great way to work efficiently and dynamically to meet the needs of the customer. It's also a good feeling to know that our team effort on LCD has created software that is able to read images that were previously unreadable by the existing OCR cascade."

There is no doubt that the team spirit and creative flow engendered by Scrum has resulted in a very positive outcome for TNT Post. The LCD project proved to be the ideal first candidate. It was a project that was challenging from the outset. Not only did it demand a lot of innovative thinking but it also needed to be completed, proven and operational very quickly. In fact by fully embracing Scrum the R&D team finalised the custom development in just three months, with the first release of the LCD software being completed on Christmas Eve December 2010.

Wider scope PHRASE maybe at the heart of the LCD project but it also offers considerable potential in the wider market. Morocco is a good case in point, where having no standard address layout considerably impedes automation.

Every element – the house number, street, district, city and postal code – appears in random order and not necessarily in single lines. It is therefore impossible to assume, for example, that the line above the postal code contains the street name. The holistic approach provided by PHRASE offers the perfect solution as each word is recognised and compared with the database separately.

Similarly PHRASE is proving an ideal basis for automation in countries such as Ireland, where postal codes are yet to be introduced. It is a powerful and highly flexible technology that can address the wide-ranging needs of the world's postal markets as they strive to achieve optimum productivity for minimum cost.

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