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MICHAEL ALDRICH

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DOCUMENT IMAGE PROCESSING...SEEKING THE HOLY GRAIL

by Michael J Aldrich, chairman, ROCC Computers Ltd

The IT industry has long had its fads and fashions. In the early 1980s, for example, the idea of the paperless office took a firm grip on the imagination of everyone with experience of handling paper. From the paperless office concept came the office automation strategy, out of which came word processing, e-mail, spreadsheets, some greatly improved copiers and - ironically - more paper!

Document image processing (DIP) is a hangover from the paperless office concept. As a commercial technology, it only became a realistic option in the early 1990s when low-cost scanning and cheap videodisc storage coincided with cheap, powerful 32-bit microprocessors, compression techniques to reduce the number of bits in each document, and wired networks to move the images of documents around for processing.

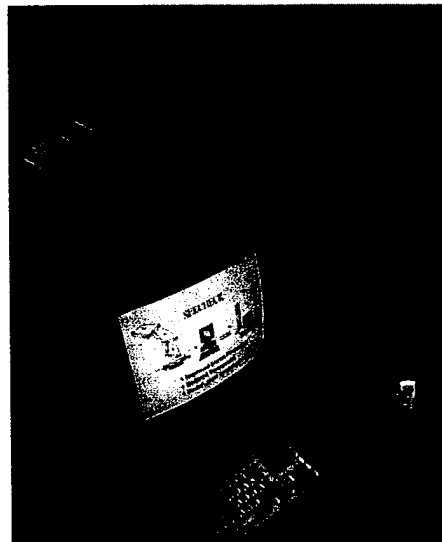
The beginning of the 1990s also brought economic recession and much business heart-searching about step-function changes in administrative cost structures for securing survival and future prosperity. DIP was well positioned to offer a technological 'quick fix' for many business administrative problems. And yet DIP did not take off to become a ubiquitous mass-market presence as had happened with word processing. Unravelling the reasons for this failure is not easy, but it may be instructive.

There is no doubt that the technology available for scanning, storing, retrieving, managing and routing documents is impressive. Some of it may have been fragile five years ago but it has matured well. The early products were expensive and not always easy to use, but in this respect they did not differ from previous new technologies. There have to be other reasons for the slow take-up.

Conceptually, DIP must have resembled a Holy Grail for institutions groaning under the excesses of their paper-driven processes and procedures. In principle, DIP could begin in the mailroom by opening the mail, then proceed to registering, batching, scanning and routing the paper. Images would be harder to lose, tear and wrinkle than paper. They could be moved around electronically and, as a result, paper trollies would be wheeled out to the junkyard and we would all live happily thereafter.

Unfortunately, this did not happen. The sharper buyers did their sums and found that investment in DIP could not be cost-justified. The wiser buyers, who understood the human dimensions of existing paper-driven systems, realised that the sociological implications were much more challenging than the technological innovations. The smart buyers recognised that the conceptual approach of DIP was best suited to greenfield projects. Existing operations needed an iterative change process. Gradually, therefore, harsh reality overtook the concepts and the dreams.

But DIP, while experiencing distinct lack of success as a solution in its own right, was to have a second chance. This came about when a simple law concerning automation was elevated to the status of a religion. The law stated that the key to automation is not to automate what you are doing but to try to find out what



you should be doing and automate that. The religion became known as business process re-engineering (BPR), and numerous organisations underwent total submersion treatment to find out what they were doing and why they were doing it.

As teams of inquisitors roamed far and wide through these organisations they found much evidence of strange, irrelevant, outdated work processes but, more importantly, they found no infrastructure to permit self-assessment of systems and procedures. Much that was inefficient was inefficient because management and supervisors were not focused on appropriate efficiency goals and metrics. They had no mechanisms for continuous improvement and so their systems decayed.

Where there were overwhelming strategic reasons sanctioned from the boardroom, BPR led to deep structural changes in organisations. Mostly, however, BPR turned out to involve fashionable but nonetheless welcome improvements to existing work processes.

In this context, BPR and DIP were well-suited bedfellows. Conceptually, DIP could provide the technology to change a business,

process. Many organisations attempted this, and many organisations failed. In general, the cause of failure was not the technology; it was in the human dimensions of using this technology.

The technologists did not understand the human dimensions. It seemed perfectly rational, for example, to look at three departments that were involved in processing documents and to devise a single computer system and a single department to replace them. Only gradually did managers discover that cross-functional integration, to borrow a term from social science, is actually one of the most difficult management tasks to implement.

So where does all this leave DIP? There is no arguing that its success to date has been limited. On the other hand, many useful lessons have been learnt from the experience of the last few years, and it is perhaps time to put them into practice more widely.

One discovery is that DIP systems tend to work best when implemented within one existing department and under one departmental manager. In this context accountability is straightforward, and the systems can be scoped, costed, controlled, and monitored.

Secondly, to make commercial sense of DIP, the market for imaging and document management systems has to be segmented, the two largest segments being forms and documents. Cost-effective solutions must then be applied to each segment. Regrettably, many buyers and suppliers do not understand market segmentation, and mismatches are therefore frequent.

Thirdly, to demonstrate the cost-effectiveness of DIP, existing costs must be identified. Unless an organisation is performing activity-based costing, it is often hard to cost an existing activity and therefore difficult if not impossible to cost-justify an alternative such as DIP. Activity-based costing in turn depends on an organised work flow.

DIP technology, properly focused and sensibly implemented, provides organisations with the business administration improvements they most actively seek - improvement in service, productivity, accuracy and so on.

While DIP is not a Holy Grail, in the right circumstances it is both useful and necessary. To work well, however, it needs activity-based costing, avoidance of prematurely radical administrative change, implementation of technology appropriate to the application, and a simple focus.

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Magazine for Public Sector Office Buyers 23