



Document Management solution for MatrixView

Business Transformed: Infinity build a virtual printer front end for document management solution

"Infinity's ability to deliver a solution to a technically challenging problem in a short span of time has helped us a great deal. I am impressed with your agility and look forward to growing our relationship with many future projects."

- Parimal Aswani, SVP Engineering

MatrixView Pte Ltd

Customer Introduction

MatrixView [ASX: MVU] a leading core technology company specializing in providing data compression and optimization solutions. The company is developing its patent-pending Adaptive Binary Optimization (ABO) technology for mission critical industries such as medical, financial services, security, entertainment and defence by addressing the current unmet technology needs in these industries.

MatrixView ABO-enabled technology solutions represent a paradigm shift in digital content management and will change the way in which data is managed, stored, retrieved and transmitted by removing the technical complexities and challenges of existing IT infrastructure and continuously breaking digital technology barriers.

Business Situation

MatrixView were looking to build a document capture, scanning and archival front based on their compression technology. This solution was to be developed for a customer in the healthcare industry, to be then reused as the front end solution for other customers in the insurance and other targeted verticals.

Infinity was chosen to develop this application due to its agility and knowledge of quickly putting together various technologies required to build this as explained below.

The Challenge

The Document management solution required the following 4 components:

1. Capture, compress and encrypt documents
2. Storage of compressed/encrypted documents
3. Search and Retrieval
4. Decompression and viewing stored documents

The DMS had to be implemented to achieve same level of compression as compact document formats like PDF and PS and integrate with MatrixView's compression technology.

Infinity's Solution

Infinity came up with 3 interfaces for the DMS.

1. Batch capture – in which all documents in scanned image format would be compressed and loaded into the DMS. Tagging with certain parameters was implemented to assist in search and retrieval from the DMS.

Case Profile

MatrixView Document Management and Virtual printer system

Duration:: 6 man months

Environment:: Windows 2003 Server System, Visual Studio .NET 2003

Technology used:: Windows Driver Development Kit, .NET 1.1, Compression technology, 3-DES Encryption, PDF, PostScript, Managed C++ Interop.

Services:: Product Design and development

Results:: Optimized compression solution, proposed multiple interfaces to document capture, successfully integrated with various technologies.

2. **Virtual printer interface** – the user can use the “Print” function from any Windows application to print to a “Virtual printer” that creates compressed/ encrypted documents using ABO technology. “Virtual printer” is similar to the Adobe PDF printers, and creates a file instead of printing to an actual printer. If the user saves these files into a network folder, a background batch process, picks up the files and loads them into the DMS.
3. **Individual file conversion and upload** – The user can convert-compress-upload individual scanned images. The batch capture application was installed on one server machine, connected to a high-speed scanner. The scanned documents were directly picked up and used by the batch capture utility.

How were the components implemented?

1. **Batch capture utility:** was developed as a .NET 1.1 Windows Forms application. The application monitors a specific folder on the scanner server. As and when files are scanned, they are compressed, encrypted and uploaded to the DMS. The users also have the option to manually select a folder or a set of files to compress and upload. An advanced Windows application, it provides the user progress feedback while the compression process is going on. The interfacing with the compression algorithm libraries (DLL) was done using Managed C++ interop.
2. **Virtual Printer:** This involved several technologies : Visual C++ 6.0 was used to develop the essential printer components (a printer driver and the port monitor), using the Windows Driver Development Kit. Advanced Windows API functions were used to provide the user with various options to change the properties of the “printed” document such as Colors vs Black and White, Portrait Vs Landscape, Resolution of the printed document etc.

3. **Decompression utility:** This was also a .NET 1.1 Windows Forms application, but developed from scratch using Managed C++. The viewer allowed the user to download and browse the documents. Functionality for zooming into documents, rotating them, and support for multiple pages was also provided.

The resulting ABO file type was integrated into the Windows system, by creating an ActiveX plug-in to even view the file in Internet Explorer.

Infinity further optimized the solution for reduced file size by separating out the text and images in a document. This resulted in much better compression as compared to compressing every page in the document as if it was an image bitmap.

These optimizations and the procedure to implement were initiated and developed by Infinity, value adding to the solution

Solution Highlights and value adds

- **Optimized solution:** which resulted in *better compression than traditional image capture solutions*
- **Developed a configuration tool:** To install and configure various components in the system (virtual printer, batch capture and compression utility)
- Highly skilled Driver Development Kit (DDK) was done in a *period of 3 weeks from start to finish.*
- **Integrated with a number of technologies** - Windows Driver Development Kit, .NET 1.1, Compression technology, 3-DES Encryption, PDF, PostScript, Managed C++ Interop.

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