White Paper : Semi-Automated Structured file naming and storage

eXadox

A simple strategy for more effective document management

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Introduction

Overview

As we increasingly adopt paperless-office practices, it becomes readily apparent that the quantity and types of documents that need to be accessed and managed daily are ever increasing. In addition to Microsoft Office documents, we need to cope with the cornucopia of e-mails, scanned images, graphics, photographs, drawings, PDFs etc… The task can be especially challenging when working with shared files that originate from various sources that were created by "*someone"*, named "*somehow"* and stored "*somewhere"*.

Everyone does their best to avoid potential chaos but one's best may not always be enough especially when having to operate in a collaborative work setting. Standardized file naming, file indexing and file storage policies are essential to ensure optimum efficiency and productivity in any organisation. However, enforcing such policies without the proper software tools can be extremely difficult. eXadox helps address these issues by using a semi-automated structured file naming and storage strategy that is easy to implement and exceptionally affordable relative to conventional document management systems.

Indexing and storage of documents

Most document management systems are designed to manage the storage and retrieval of documents after they have been scanned-in, received or created. The strategy for indexing the document for subsequent retrieval is generally based on metadata that the user must manually input for each document. Metadata is a very useful method for the indexing and subsequent retrieval of documents; however for most corporate environments, implementing a policy of structured file naming and storage would be both more effective and efficient. That extra step of having to index each document using metadata would be minimised if not totally eliminated when using this approach.

eXadox semi-automated structured file naming and storage solution

Semi-automated structured file naming and storage is a simple strategy that can be utilised for no-fuss document management or as a complement to a conventional document / records management system. The rationale is that if you have assigned a meaningful well structured name to your file, stored it in a prescribed location, everyone can easily locate the specific document and immediately also identify that it is the proper document.

The interesting challenge is how to enforce and implement a structured file naming and file storage strategy across a team, a department or a company? The first action item is to bring everyone onboard by letting them understand the concept and the underlying benefits for the day to day operations. They will then appreciate that with minimal effort they could improve their productivity and ultimately that of their team and the company. The next step is to install eXadox on each participant's computer. The number of participants is not an issue because eXadox is scalable. Furthermore, there are no expensive IT infrastructures and deployment efforts involved because eXadox is a stand-alone collaborative application that takes advantage of the standard Microsoft file management system of the stations/servers in the network. Of course, some initial effort would be required to decide on the file naming and storage policies in the organisation but setting up eXadox Profiles to maintain policy adherence just takes minutes.

White Paper Scope

The purpose of this White Paper is to: introduce the concept of structured file naming and storage; discuss the implementation issues and benefits; describe the eXadox solution.

Structured File Naming Concept

Background

Prior to 1994, file naming in the Microsoft world was restricted to a Short File Name (SFN) format consisting of eight characters with a three letter extension (8.3 File Name format). Since the arrival of Windows NT 3.5 we have all been able to take advantage of the current Long File Naming (LFN) scheme consisting of up to 255 characters. It has been useful in providing a means of including longer descriptions within the file name itself. On the other hand, it has also lead to a mishmash of methods for naming files where everyone believes that their method is the most sensible way. The file naming methodology always makes sense to the individual but may not be as appreciated by the colleague sitting in the adjacent cubicle. To resolve this lack of file naming conformity some organisations have tried introducing the notion of structured file naming conventions that everyone with the best of their ability should follow. Unfortunately, it is quite difficult to encourage adherence without a support tool, therefore companies often have had to either abandon the practice or simply developed a "hope for the best" attitude.

To address this problem, MultiCIM Technologies Inc. introduced eXadox DT (DeskTop) in 2007 as an easily deployable solution for implementing semi-automated structured file naming within the organization. (Note: it is "semi" as opposed to "fully" automated because some user input is required to auto-generate a file name and to auto-store the file.) The solution's strength was in facilitating structured file naming to scanned documents but with sufficient flexibility to name any electronic file(s) within any working folder. More recently MultiCIM introduced eXadox MSO that provides structured file naming directly from within Microsoft Office Suite applications (MS word, Excel and PowerPoint). The reason for this product's introduction was that there was clearly a need for a more streamlined and efficient method to name files directly from an MS Office application.

What exactly is structured file naming?

Interestingly, many people use structured file naming without even realizing it. When we make a conscious effort to assign a meaningful name that consists of at least two information segments we are effectively creating a structured file name. Some simple examples are:

SUPPLIER_INVOICE_NUMBER.PDF   or   CLIENT_CONTRACT_NUMBER.PDF These would look like:

PETES-PLUMBING-INC_INVOICE_T45632.PDF   or   RUTHERFORD-MICHAEL_CONTRACT_99546-2.PDF

For a smaller file name footprint it is advantageous to abbreviate these as follows: PPI_INV_T45632.PDF or   RUTH-M _CON_99546-2.PDF The advantage to abbreviating is that we can see more information at a glance without having to scroll the file name from left to right. It is a more efficient method.

Why structured file naming?

It is the simplest non-obtrusive method for document indexing, searching and retrieval. When it is applied diligently in conjunction with structured file storage, it is the most affordable method of managing documents for collaborative document sharing.

Some hurdles with manual structured file naming

Although the structured file naming concept is rather simple; there are some common difficulties that arise particularly when the number of descriptive segments increases. When using a manual method of composing a structured file name, some of the following problems may occur: the order of the segments can be unintentionally compromised; there could be inconsistencies in what is entered in each segment e.g. misspelling, bad abbreviation, wrong type of data, etc… The other important element which creates difficulties is that entering this information takes time and some users can find it rather tedious without a tool to help bypass some of the repetitive keying. This problem is further exasperated when the user must also key the folder name as a prefix in the structured file name.

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Structured Auto-Storage of Files

Concept

"Structured Auto-Storage" is a MultiCIM concept created for efficiently storing documents in folders and sub-folders in context to the eXadox solution. It consists of eXadox auto-creating the folders and sub-folders and auto-naming them using the information in smart lists supplied by the user. This concept was specifically designed to complement the eXadox structured auto-file naming approach. It is tightly integrated with structured file naming to the extent that eXadox users have the option of prefixing the folder and/or sub-folder names as part of the file name. The results are such that the **folder name(s) automatically appears as a discrete segment(s) in the final file name. For example, if the** prefix option is set to ON and a user is in the process of assigning a file name, POLICY_47696.PDF, to be saved into the SMITH-J folder, the resulting structured file name would be auto-generated as: SMITH-J_POLICY_47696.PDF. Prefixing the sub-folder name is very important for documents that are mobile.

Benefits

The following are just a few of the key benefits to eXadox structured file storage:

- **Quick and efficient deployment** – some organisations wish to replace their paper filing system with an electronic eXadox based filing system. They may need to create several thousand folders – a very time consuming process that could take days of effort. Those several thousand folders and sub-folders can be auto-created instantly by eXadox if the client can provide a smart list(s). The lists can be names of clients, suppliers, employee, patients, etc…

- **Fast and simple document storage / retrieval** – the user never has to browse to save or retrieve a file because the folder and sub-folders are accessed directly via the smart list entry that was used to create the folders. The user just starts keying; the search-as-you-type feature instantly highlights the possible folder name of interest in the smart list pull-down; then the user clicks to make the final selection. This feature is especially useful in operations that have a huge number of folders e.g. hundreds or more of clients, suppliers, employees, projects etc…

- **Flexible but controlled document filing** – all organisations have different filing needs based on department. The folder structure and folder names are different between departments. Accounts Payable does not file or name documents in the same manner as Human Resources. In eXadox the folder structure and folder names for each department are distinguished using specific Profile definitions. The Profile definitions will point to their own smart lists and also define the rules for the structured file naming. Therefore each department transparently files in their designated folders using their specific file naming structure.

- **Integration with structured file naming** – as organizations head towards workflow and paperless operations the volume of document movement becomes ever increasing. Document transfers are being done through various means such as e-mailing, FTP and mobile technologies. In many cases multiple file transfers are involved, making it difficult to distinguish between files. As a result, there is a huge value in the automatic prefixing of folder names as part of the documents structured file name. It makes it extremely easy to properly identify when a document has been routed as an attachment or the user has to access it independent of the original filing system.

- **Quick-switching between personal / common storage:** – the general intent is that shared documents be stored in commonly accessible folders; however there are instances when documents are not ready to be released for shared access. In such cases eXadox enables users to quickly opt to store and name their documents in their own personal (**MY**) storage in the exact manner as they would in the common (**MAIN**) storage destination as per the specific eXadox Profile.

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e**X**adox Solution

Benefits

Some of the general benefits to eXadox structured file naming and storage solution are as follows:

- **Accurate and fast document indexing, storage and retrieval with little effort and cost.**
- **Reduced operating cost via increased efficiency.**
- **Better document sharing through standardized structured file naming and storage.**
- **Enhanced paperless workflow operations.**
- **Increased information asset value because of improved document accessibility.**
- **Complements conventional electronic records / document management systems.**
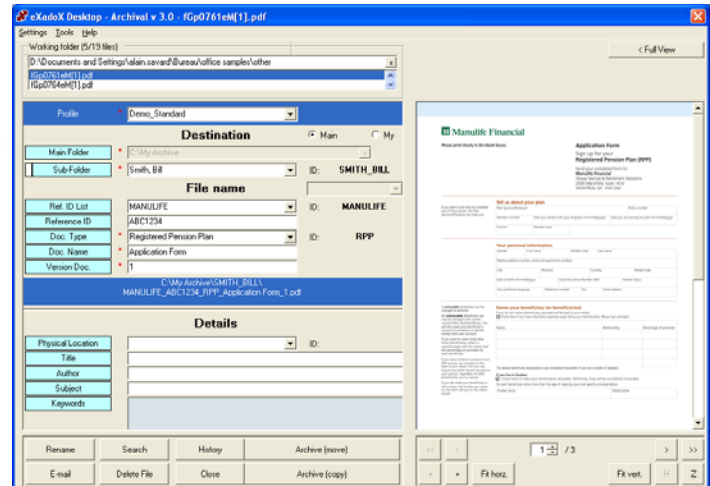
Description

The eXadox solution brings an innovative non-obtrusive approach to document management that costs very little to deploy and operate. It was designed with emphasis on simplicity and especially targeted for organizations that require immediate results but do not have IT resources to dedicate. Maximum benefit can be realized in cases where there are multiple business units that need to share documents collaboratively and efficiently and also wish to enforce their own specific file naming and storage policies and conventions.

The eXadox document management approach consists of a semi-automated structured file naming and storage strategy. The resulting structured filename is the only critical information required for indexing the document and for subsequent rapid accurate retrieval. The usual metadata input required for indexing in conventional document management is facilitated but not necessary in eXadox.

General Characteristics

Regardless of version, the all encompassing general characteristics of eXadox are as follows:

1. Ease of use – simple intuitive interface with auto-file naming based on user smart lists
2. Accuracy – use of smart lists for auto-building structured file names, auto-storage and retrieval
3. Simple install – collaborative stand-alone app with no special IT infrastructure required
4. Quick deployment – Auto-generation of folder structures based on user smart lists
5. Personalization – Multi-profiles to support multiple file naming and storage policies
6. Customization – interface tools for field: types, quantities, names and tool tips
7. Scalable – single user, team, department or company-wide
8. Flexible – basic to advanced structured file naming / storage to handle diverse requirements
9. Functionality– essential practical (no frills or fuss) production oriented operations
10. Efficiency –quick document file naming, storage and retrieval using smart lists
11. Affordable – low cost solution with undemanding software or hardware pre-requisites

Presently, there are two seamlessly compatible and complementary eXadox applications available to help address different user needs. These are eXadox DT (DeskTop) and eXadox MSO (Microsoft Office). A description of each follows.

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eXadox DT – is intended for environments that require the flexibility of naming and storing all types of documents: e.g. scanned images, graphics, MS Office documents, emails and PDFs. The DT version supports the notion of a working folder where any document that appears listed can be given a structured file name and stored in the folder structure designated by a selected Profile as defined by the team or department. It can be integrated with scanner software applications.

eXadox MSO – is an eXadox add-in to the Microsoft Office Suite intended for users who predominately require eXadox semi-automated structured file naming and storage instantly and directly from within a Microsoft application (MS Word, Excel, PowerPoint); the only documents supported are those supported by the MS Office application itself. In the MSO version the user can only give a structured file name and store a document that is currently opened within the MS Office application.
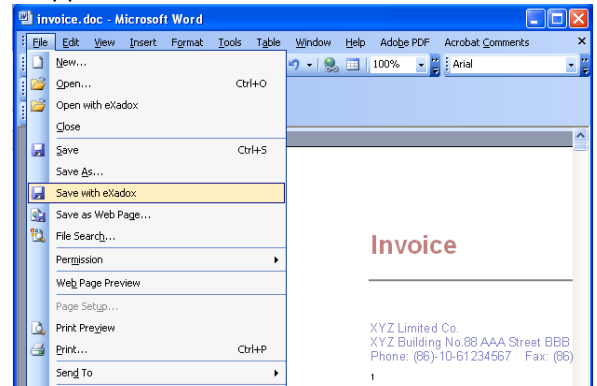
Other than the operating context and the restriction on document types specific to the MSO version, the two applications generally have the same input interface / functionality. The eXadox DT has more operations and flexibility than eXadox MSO but the MSO is more convenient for heavy MS Office users. In order to cater to user requirements based on options and pricing, three flavors of each product is available: Basic, Standard and Advanced. For a distinction between each please refer to Appendix A.

eXadox DT and eXadox MSO <u>common features</u>
- Structured file naming and storage of Microsoft Office documents
- Viewing of Microsoft Office entire documents without opening
- User control of input field properties and smart list pull-downs
- Create multi column smart lists from imported data (CRM, Excel, Business systems)
- Up to 3 lookup columns and one ID column for abbreviated entry
- Editing and adding data into smart lists
- Use of smart lists for folder structure auto-generation
- Use smart lists for selecting proper storage destination folders and sub-folders
- Search-as-you-type from smart list pull-downs for quick and accurate input
- Semi-automated file-name building using smart list data
- Personal (MY) and Common (MAIN) structured folders destination instant swapping
- Ad hoc working folder source selection
- User-controlled structured file naming and storage policy control via Profile
- Multi-profile support for creating and selecting unique folder and file naming structure
- Copying of Profiles
- Multi-file select for file naming and store operation
- Publishing Profiles for sharing
- Work with unlimited published shared Profiles
- eXadox MSO and eXadox DT Profile compatibility and sharing
- Automatic document version number control
- Document related activity or status tracking
- File Renaming
- Document emailing
- Quick Search for document retrieval
- Advanced Search using smart lists and filters

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eXadox DT specific features

- Name and store any and all documents
- Name and store any scanned image
- Attach and edit PDFs
- Preview images and PDFs without opening
- eXadox enabled operations via windows explorer
- drag and drop file(s) into eXadox
- Tight-integration with some scanning software applications
- Works with all scanning operations
- Move search results document list into any folder
- Paper document tracking associated PDF images

eXadox MSO specific features

- add-in for Microsoft Office Suite (MS Word, Excel, PowerPoint)
- Microsoft Office **Save As with eXadox** menu command for file naming
- Microsoft Office **Open with eXadox** menu command for file naming
- View MSO entire documents without opening

How e**X**adox works
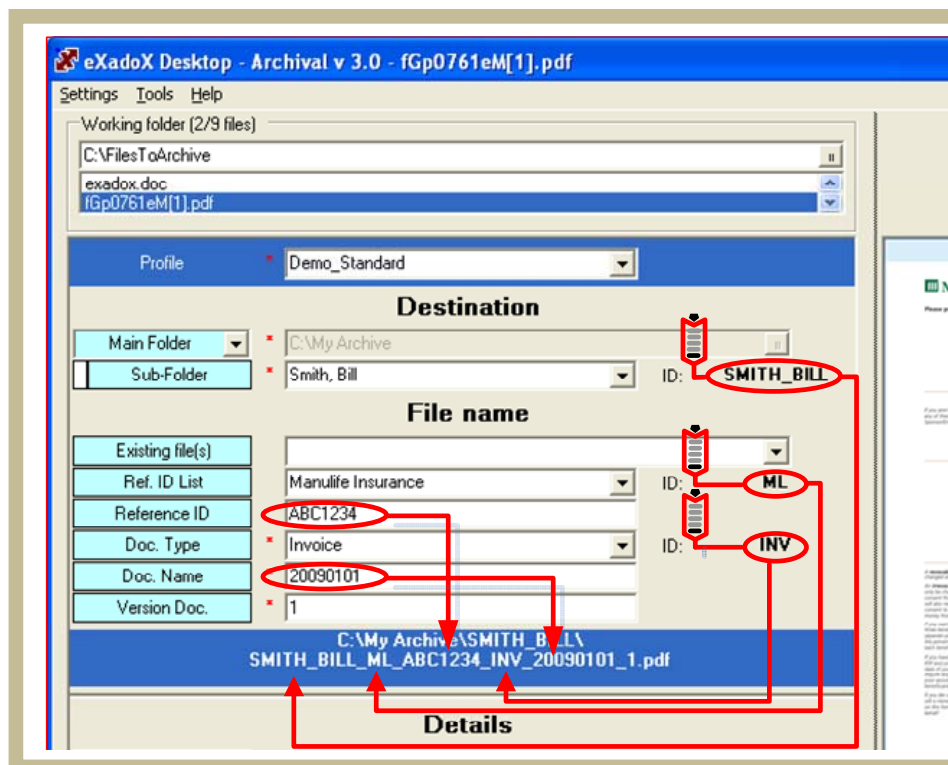
Structured Naming and Storage

eXadox uses a structured file naming and storage strategy to index and file electronic documents for fast and accurate retrieval / identification of targeted documents. The illustration above demonstrates how the structured file name is semi-automatically generated by taking advantage of various input fields. All the list-enabled fields automatically convert user input based on smart-list content. The entry in the smart-list is used to auto-populate the applicable structured file name segment. The content in the free-text input fields is injected as is into the structured file name. The file naming structure and the folder storage structure policies and conventions are controlled via a combination of: user-created Profiles, user created/imported smart lists and input field control. The following describes their functionality:

Profiles

Profiles provide users the flexibility of personalizing their structured file naming and storage operation. It also provides an efficient mechanism for quickly switching between document naming / storage policies in multi-disciplinary or multi-tasking work environments. Profiles promote consistency and eliminate the guesswork on how to name the file and where to store the file. The following is a summary of Profiles key functionality:

- Used to conveniently differentiate between different filing requirements based on industry or department.
- Provisions for designating unique smart lists that are used to minimize manual data input and human errors when auto-building the file name and storing the file.
- Quantity of profiles supported is unlimited. Number and type of Profiles that can be created depends on specific eXadox version. (i.e. Basic, Std, Adv)
- Used to define specific file naming and folder storage structures.
- Used to define and control (e.g. disabled, enabled) input fields for naming and storing a file.

Smart-Lists

Smart-lists are used to help personalize all of eXadox pull-down lists tied with field inputs. Field inputs are either used to build file names or to select the proper destination sub-folder without having to browse. If the data or text is in the smart list, the user may simply click on the entry from within the pull-down list. The alternative is to take advantage of the search-as-you-type feature to instantly jump to the desired entry. Smart lists ensure that there is data input consistency and that the user is not subjected to keying the same text repetitively.

Smart-lists consist of data that may be either imported from CRM or from other business systems. They can also be created and managed from within eXadox itself. A smart list can consist of up to 4 columns of data or text where the first column is always the ID. The text in the ID column gets embedded into the filename or is used to auto-create and name folders. The user may specify and use any column in the smart pull down lists as the lookup column to locate the desired entry. The ID text may be the same as that within the lookup column and is a convenient way of shortening the number of characters in a structured file name (e.g. Quotation => QUO)

Input Fields

The eXadox user interface is split into four input areas.

General area: The first general area enables the user:
- To browse and select the working folder for the files to be named /stored.
- Filter and select the document(s) of interest that requires naming and storage.
- Select the Profile associated with the required naming / storage policy.

Destination area: The second input area is dedicated to input fields required to determine the proper storage destination. These input fields take advantage of smart pull-down lists that are used to directly select the destination sub-folders without the need to browse.

File Name area: The third input area is used to build the structured filename. The number fields in this area are a function of how many segments are required in the structured file name. The user decides on which fields and how many are required at Profile creation time. The user also decides on whether they are mandatory (to be filled) or optional (may stay blank) fields. In the File Name input area there are three types of input fields:
- Smart fields – these are smart-list enabled and take advantage of the search-as-you-type feature. They automatically pass the ID corresponding to the lookup text to the file name builder function. If the lookup text does not exist in the smart list, an authorized user is given the option to include it in the smart list. No field input entry is possible if the lookup is not present in the smart-list.
- Free text fields – the user may key in any legal Microsoft filename characters. This text is used to include more details within the file name.
- Version field – this field auto-increments if the file name being auto-generated already exists. The user has the option to accept the new version or make a decision to replace the old file with the new one. The user may overwrite the version number with any alphanumeric text to create a new version number. The text will be auto-incremented numerically for numbers and alphabetically for letters.

Details area: The fourth input area is provided for optional metadata that the user may wish to include and embed within a Microsoft Office document or PDF file. The metadata may be e.g. Keywords, Author, Date, Subject. It is possible also to have an optional tracking field that could be used to record where the associated paper document is physically stored (e.g. BOX172). This field is smart list driven so the user may maintain additional information on the list itself. It can also be used to track activity or status. For example in an accounts payable Profile, an invoice document can be encoded with a Received Status, Entered Status, Paid Status. The user has the flexibility of choosing how to use it.

Structured file naming based on industry

A structured filename typically includes several segments where each segment in the filename has a specific meaning to the organisation or department working with the document. A well structured filename has sufficient information to facilitate the searching and identification of the targeted document. As an example the file name: DRAXCO _567930_ INV _MFG.PDF   would enable us to quickly locate and identify invoice number 567930 from a supplier named DRAXCO for goods ordered by the Manufacturing department. In an insurance brokerage firm, the file name may look like: SMITH-J _MANULIFE_A744532_ LTR_EXT2012.pdf. This is a letter requesting an extension to John Smith's Manulife insurance policy number A744532 until the year 2012.

The actual filename structure can vary greatly depending on industry; however, the common thread is that the resulting filename must instantly have meaning to all the staff within the organization accessing those types of documents. Therefore the first and foremost initiative is to institute a file naming policy and ensure that everyone understands the reason for it. Each business unit within the organization can then be given the responsibility of developing a Profile with their own file naming convention based the general purpose structure segmented as follows:

SUB-FOLDER NAME_REF ID LIST_REF-ID_DOC TYPE_ DOC NAME_VERSION. EXT

If or how each file naming segment is exploited depends on industry and business unit activity. For greatest efficiency and accuracy it is wise to gravitate towards smart list-driven segments. Including the sub-folder name as a prefix is especially useful for documents that are mobile. See examples below:

Structured File Naming Samples Based on Industry

Profile	SubFolder Name (List)	_	Ref ID (List)	_	Ref ID (Text)	_	DocType (List)	_	DocName (Text)	_	Version (Text)	.	Ext
Insurance Brokerage	**Client Names**		**Insurance Companies**		**Policy Numbers**		**DocType**		**Expiry**				
Long	RUTHERFORD-PETER		MANULIFE-INSURANCE		AZ65984		POLICY		TERM2012		1		PDF
Short	RUTH-P		MLI		AZ65984		POL		TERM2012		1		PDF
Wealth Mgmt.	**Client Names**		**Securities Companies**		**Contract Numbers**		**Investment**		**Maturity**				
Long	JACKSON-GEORGE		BANK-OF-MONTREAL		759665G		REGISTERED – SAVINGS-PLAN		GIC2011		A1		PDF
Short	JACK-G		BMO		759665G		RSP		GIC2011		A1		PDF
Building Contractor	**Pojects**		**Sub-Contractors**		**Contract Numbers**		**Trade**		**Start Date**				
Long	METROMEDIA - COMPLEX		SUPER PLUMBING		000563		PLUMBING		09-11-15		3		DOC
Short	METCOM		SUPERPL		000563		PL		09-11-15		3		DOC
Legal Firm	**Client Name**		**Dossier**		**Contract Numbers**		**DOCTYPE**		**DATE**				
Long	SMITH-JOHN		DOMESTIC		08-244		PRENUPTIAL-AGREEMENT		08-07-25		2		PDF
Short	SMITH-J		DOM		08-244		PRENUPT		08-07-25		2		PDF
Accounting Services	**Client Name**		**Fiscal Year**		**Unused**		**DOCTYPE**		**DATE**		**Unused**		
Long	DORALEC DOORS		2008				FINACIAL STATEMENT		Q3				XLS
Short	DORAL		DOM				FS		Q3				XLS

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About MultiCIM Technologies

The Company

Founded in 1986, MultiCIM Technologies Inc. develops, promotes and supports business process automation solutions. MultiCIM is the developer of the eXadox RAD (Rapid Application Development) technology that was used to develop eXadox applications described in this white paper and is also the developer of eXtractoflex automated data capture software.

Your Success is Our Objective

Our constant commitment is to ensure that our clients achieve their automation goals. We have a long record of successfully providing our clients with business process automation solutions that reduce costs, improve productivity and maximize ROI.

MultiCIM solutions methodology

For over 20 years MultiCIM has been using a simple and effective methodology to assist clients in fulfilling their process automation needs We are pragmatic, so we propose automation only if the implementation is feasible and the ROI makes sense. Cost and time is of the essence; therefore we will whenever possible automate processes using existing software tools that are easily customizable before embarking in new software development efforts.

An experienced team at your service

MultiCIM's resources include diverse professionals, experienced in implementing technologically advanced process automation solutions. Our experience from projects in various domains (manufacturing, hospitals, government, and distribution) means our team can quickly adapt to your particular environment.

Our raison d'être

We are predominantly a technology-based company therefore we welcome new and difficult challenges. It is through such challenges that we can pursue innovative solutions that are financially rewarding for our clients and also satisfy our own sense of accomplishment. We enjoy delivering on time and offer a full satisfaction guarantee. We take great pleasure in meeting and assisting new clients by delivering our product and services or by simply using our knowledge to provide direction. Your satisfaction and success is also ours !

About the author:

Vince Santaguida is the CEO and founder of MultiCIM Technologies Inc. He has over 35 years of experience in software engineering and application development for business process automation and simulation solutions. He is a strong proponent of paperless office practices and also promotes increasing productivity in paper-intensive processes through the use of automated data capture.

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Appendix - A

eXadox Product Family

eXadox MSO & eXadox DT

Feature	MSO Basic	MSO Std,	MSO Adv.	DT Basic	DT Std	DT Adv.
Microsoft Office (Word, Excel, PP) eXadox plug-in	✔	✔	✔	-	-	-
Microsoft Office Save As with eXadox file naming	✔	✔	✔	-	-	-
Microsoft Office Open with eXadox file naming	✔	✔	✔	-	-	-
Rename Microsoft Office documents	✔	✔	✔	✔	✔	✔
Rename any and all documents	-	-	-	✔	✔	✔
Archive and rename scanned images	-	-	-	✔	✔	✔
Convert images to PDF	-	-	-	-	-	✔
Attach and edit PDFs	-	-	-	✔	✔	✔
Preview MSO complete documents without opening	✔	✔	✔	✔	✔	✔
Preview images and PDFs before renaming	-	-	-	✔	✔	✔
Input field properties control	✔	✔	✔	✔	✔	✔
Advanced Class customization of user interface	-	-	✔	-	-	✔
Integration with scanning operation	-	-	-	-	✔	✔
Personal and Public destination folders selection	✔	✔	✔	✔	✔	✔
Working folder source selection	✔	✔	✔	-	✔	✔
Multi-file select for file naming and store operation	-	-	-	1	✔	✔
Standard Class Profile creation	1	✔	✔	1	✔	✔
Advanced Class Profile creation	-	-	✔	-	✔	✔
Copy Standard Class Profiles	1	✔	✔	1	✔	✔
Copy Advanced Class Profiles	-	-	✔	-	-	✔
Build Advanced Profile from a Standard Profile	-	-	✔	-	-	✔
Publish Profile for sharing	-	✔	✔	-	✔	✔
Work with published shared Profiles	✔	✔	✔	✔	✔	✔
eXadox MSO and eXadox DT Profile sharing	✔	✔	✔	✔	✔	✔