Imaging and Document Management Solutions from Edge Systems, L.L.C.

Introduction

Before phrases like "The Paperless Office" and "Knowledge Management" became commonplace, Edge Systems pondered an interesting question: What if there were a way to provide – from any worker's desktop – full access to the complete informational assets of an organization? Access not only to data that resided in the rows and columns of a database; but full and unconditional access - regardless of location or format - to ANY INFORMATION OBJECT, be it electronic data, paper documents…even voice and video?

It was our quest to answer this question that has culminated in the delivery of *IMEDGE* Object Management System (OMS), a robust Imaging and Document Management Solution that delivers on the "Paperless Office" promise of the past.

What is *IMEDGE*-OMS?

More than just a software product or consulting service, *IMEDGE*-OMS is a total information resource management solution. *IMEDGE*-OMS provides powerful control over the acquisition, management and delivery of your company's vital information assets. *IMEDGE*-OMS equips today's knowledge worker with the tools to navigate through a sea of data to find a single nugget of information. Information that can make the difference between success and failure in today's competitive marketplace.

IMEDGE-OMS Solutions Model

From a software point of view, the *IMEDGE*-OMS Solutions Model consists of three major components: *Object Manager Core Technology, Edge Reusable Technologies and Third Party Technologies.* See Figure 1.
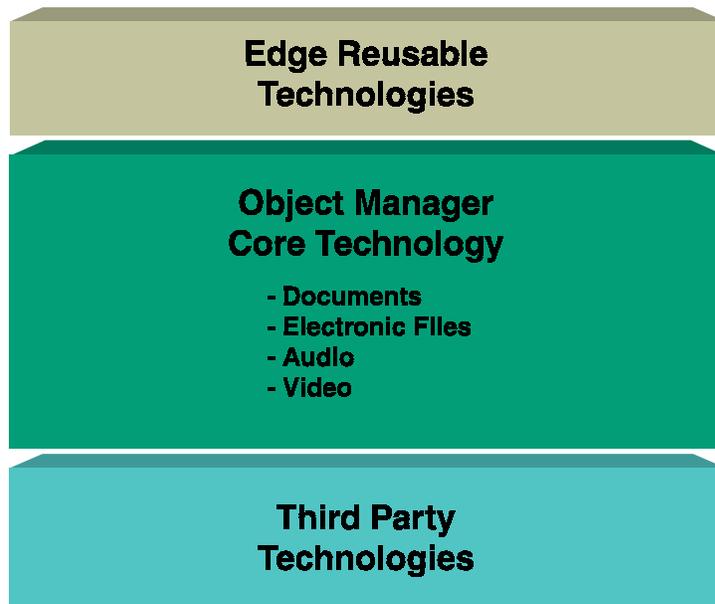
The *Object Manager Core Technology* is a software toolkit that manages the storage and retrieval of all of the "objects" that reside in an enterprise's information repository. These multimedia

objects include scanned images of paper documents, electronic files, such as spreadsheets, and even audio and video clips. When each of these multimedia objects is submitted to the **IMEDGE**-OMS system, it is given an "object handle" which identifies what it is, where it resides, and what format it is in. When the object is retrieved, the object handle tells the system how to display the document to the user—either through launching the object's native application, or through an image viewer or other means. The Object Manager Core technology is highly scalable—it is being used in single server and workstation applications as well as 3500-seat installations.

The Second major component of the **IMEDGE**-OMS Solutions Model consists of *Edge Reusable Technologies*, which include a variety of software application modules that tie directly to the Object Manager. See Figure 2.
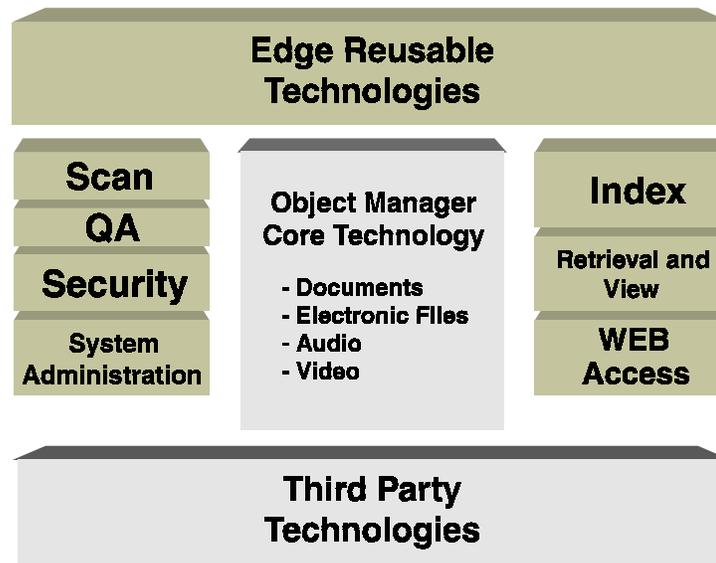
These application modules support a variety of basic document management functions, including:

Scanning - the scan module supports 60 different devices, from the most inexpensive single-sheet scanner to full duplex scanners used in high-volume production environments.

Indexing – Indexing information can be keyed in manually or input through automated means such as bar-code readers.

Quality Assurance – the QA modules offers the ability to enhance scanned images, including de-skewing, sharpening, de-speckling — or reroute them for re-scanning.

Retrieve/view – Files retain their native format and when retrieved a viewer or native application is launched.

WEB Access – Document management system features can be extended to the Internet or corporate Intranet for remote accessibility and application deployment flexibility.

System Administration – All aspects of system set-up, including logins, security, audit, trails, backup etc. can be controlled by the system administrator.

Security – Multiple levels of security can be configured by the system administrator, including access to a single document, group of documents, as well as security at the object level.

The third major component in the **IMEDGE**-OMS solutions module, are *Third Party Technologies*. See Figure 3.
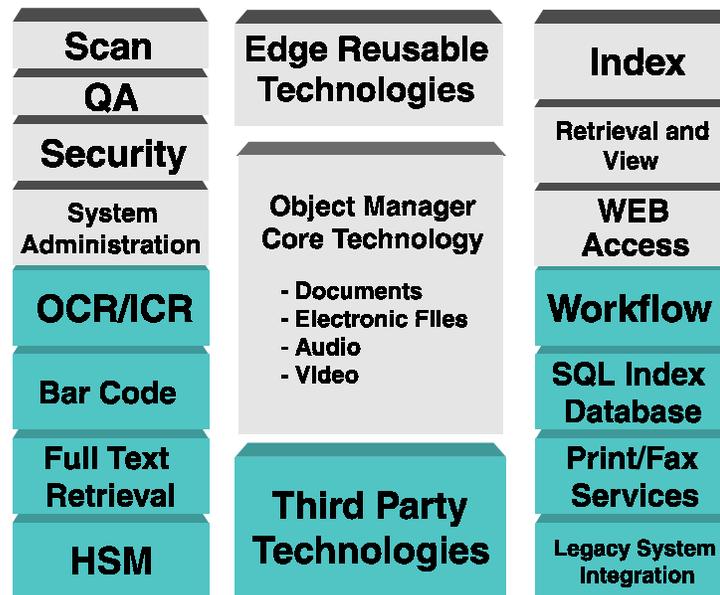
Tied directly to the Object Manager Core through application programmer interfaces (API's), these Third Party Technologies consist of best-in-class products, that can be deployed to provide specific functionality for a given application. These technologies include, but are not limited to:

OCR/ICR—The **IMEDGE**-OMS solution can be configured with powerful forms processing/intelligent character recognition (ICR) and Optical Character Recognition (OCR) technologies to provide automatic capture of hand and machine printed information.

Workflow – The **IMEDGE**-OMS Solution can be configured with a variety of workflow options from simple ad-hoc document routing to rules-based automated workflow.

Bar Coding – The **IMEDGE**-OMS Solution can be configured to operate with industry-standard bar code readers.

SQL Index Database – The **IMEDGE**-OMS Solution works with major SQL Compliant databases such as ORACLE and Microsoft SQL Server

Full Text Retrieval – The System can be configured to search on the full text of all documents stored in the system, providing powerful search and retrieval capability for litigation research and other applications.

Print/Fax Services – Documents can be output to paper on any standard printer. FAX Server capability allows for automated faxing of documents.

HSM -- A full complement of Hierarchical Storage Management Solutions are available.

Legacy System Integration – Using a variety of third party tools. *IMEDGE*-OMS can interface with legacy systems, such as IBM AS400, etc. And support the transfer and retrieval of data from these systems.

Business Process Analysis

Using Customer Involvement to its fullest

Because the *IMEDGE*-OMS solution involves the automation of a client's business process, the solution is developed and implemented through a participative relationship with the Customer. This relationship begins with our comprehensive Business Process Analysis (BPA) which involves the analysis of a client's business to identify areas in which process improvement can be obtained through the application of *IMEDGE*-OMS technology. A typical BPA includes:

Discovery:
Discovery incorporates RFP specifications, site visits, interviews, and review of existing processes into a cohesive view of the solution requirements. Edge Systems Business Process Analysts and System Architecture Analysts team-up to create a "Requirements Definition" document, which is developed in cooperation with the Customer.

System Model Development:
Using the Requirements Definition as the high-level road map, the BPA team develops a Solution Model, Based upon the *Object Manager Core Technology, Edge Reusable Technologies and Third Party Technologies* described earlier. See Figure 4.

Project Implementation

Logistics:
After the BPA, and when the parameters of the *IMEDGE*-OMS project are completely known, the Edge Systems Project Manager will develop an execution logistics document (statement of work) and a corresponding time line. By this phase, all parties are aware of the project scope and understand the challenges that lie ahead.

Project Management:
The implementation effort starts with an orientation meeting between Edge staff and the Customer to develop an implementation plan. The key activity of this meeting is to establish Document Management System Implementation (DMSI) Teams; a consortium of Edge and Customer individuals to execute the plan. DMSI Teams include:

Project Management DMSI: Oversees the full scope of the project, sets up the detailed time line and generally coordinates the activities of all other DMSI teams.

Facilities DMSI: Responsible for the physical plant; e.g., site preparation, electrical requirements, etc.

Integration DMSI: Installs all software, configures and certifies software with the Customer equipment currently installed, etc.

Trainer/Tutor DMSI: Conducts formal training on the completed system for the administrators and knowledge workers.

The advantage of significant participation by the Customer on the DMSI teams is realized during transition as Edge Systems scales back participation and turns the reins of the solution over to the Customer staff. In this fashion, DMSI teams never really leave the Customer; the members just change.

Service and Support

AfterCare Support Program

Edge's *AfterCare* support program provides the support necessary to keep our clients' *IMEDGE*-OMS Systems up and running. Whether it's preventive or remedial, in the field or at our facilities, our support staff provides a single point of contact, 24 hours per day, 7 days per week, if required.

AfterCare services provided by Edge's National Support Center are in addition to the warranties provided by the original equipment manufacturer or software developer and can be specifically tailored to meet the requirements of any end user organization.

Edge customer support engineers provide technical assistance on all *IMEDGE*-OMS hardware and application software. The "Help Desk" is a convenient point of contact via toll free hotline for problem determination, dispatch, and tracking for all *IMEDGE*-OMS installations.

We have structured our *AfterCare* support program to include the following features:

Application Support
Toll Free Help Desk Support
Remote Dial In support from National Support Center
All calls logged to Maintenance Tracking and Reporting System
Software Updates within Version

Hardware Support
Toll Free Help Desk Support
Remote Dial-in Support from National Support Center
All calls logged to Maintenance Tracking and Reporting System
Four Hour On-site Response for Hardware Maintenance

System Tuning and Monitoring
Toll Free Help Desk Support
Remote Dial-in Support from National Support Center
All calls logged to Maintenance Tracking and Reporting System
System Parameter Tuning, Configuration Support and Modification

Success Stories

Client: IRS
Synopsis: Document Management System for Litigation Research

Edge Systems provided the IRS with a customized litigation support system that is used to analyze millions of pages of information. This client/server-based solution included business process analysis and workflow re-engineering.

Client: Office of Inspector General, USDA
Synopsis: Nationwide Directives Document Management System

Edge Systems provided the Office of the Inspector General with a client/server-based document management system that provides immediate and "current revision" access to directives on a nationwide scale.

Client: USDA Rural Utilities Service
Synopsis: Document Management System and Backfile Conversion

Edge Systems provided the USDA with a centralized imaging system designed for the storage and retrieval of business documents.

Client: US Fish & Wildlife Service
Synopsis: Hand-Print Intelligent Character Recognition (ICR) System

Edge Systems provided US Fish & Wildlife with a custom ICR system to process hunter survey forms for the agency's Harvest Information Program.

Client: Aon Services Company - Combined Insurance of America
Synopsis: PACflow Automatic Payment Authorization System

Edge Systems provided a client/server-based forms processing solution that allows Aon to automate the processing of thousands of forms weekly.

Client: Tobyhanna Army Depot
Synopsis: Image Capture/Storage/Retrieval System

Edge Systems replaced Tobyhanna's outdated filing system with a client/server-based optical imaging system.

Client: State of Maryland Board of Nursing
Synopsis: Forms Recognition/Storage/Retrieval System

Edge Systems replaced a manual license processing and archiving system with a client/server-based automated forms recognition and optical storage system.

IMEDGE-OMS Specifications:

Content Types
Supports the routing of simple, complex and compound objects in any format. Native formats and file names are also conserved.

Storage Management
Supports magnetic, WORM, MO, CD-R storage devices including mirroring capabilities; Hierarchical storage management; Automatic or on-demand caching and pre-fetching; Import/export of data; Automatic object clustering and relocation

Content Management
Revision control, allowing access automatically to the latest version; Check-in/check-out control, preventing multiple users from editing the same object simultaneously; Referential count integrity across multiple applications and nested complex objects; User authorization assigned at the object level

Document Management
Annotations/markups/sticky notes on images; On-demand and batch scanning; OCR/ICR/IMR and barcode integration; Forms and template processing

User Applications
Windows-based foldering schema; Image viewer for monochrome and color images; Batch scanning, QC and commit; Template editor

System Management
Transaction journaling for operations and data, with replay selection based on time slices; Windows-based installation procedure, client/server configuration module and administration module; Automatic backup and restore for catalogs, cache and work-in-progress partitions, and storage devices

Supported Server Platforms
Windows NT, Sun Solaris, Hewlett Packard HPUX, IBM AIX, Data General Intel DG/UX, SCO UnixWare, NCR UNIX SVR4.

Supported Client Platforms
Microsoft Windows, Windows 95/98/2000, Windows NT, UNIX.

Supported Network Environments
TCP/IP, SPX/IPX, UNIX NFS, SNA, Token Ring, Ethernet

Supported Database Management Systems
Any SQL Database: Oracle, Microsoft SQL Server, MS-Access, Informix, Sybase

Supported Storage Devices
Data types can be stored on magnetic disk, RAID, WORM optical disk, and magneto-optical disk.

Supported Web Environment
IMEDGE-OMS can operate with any Web browser and Web server and is compliant with ActiveX server components and CGI scripts