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1. Enterprise Imaging Platform Overview

This chapter gives an overview of the Enterprise Imaging Platform system, which from here on will be abbreviated to "EIP".

1.1. Overview

Businesses are under intense pressure to drive efficiencies by improving business processes.

Document-related processes are found across many different organizational functions, including accounting, marketing, legal, finance, and procurement, among others. In industries such as financial services, healthcare, education and legal, maintaining paper documents are an essential part of business operations.

To achieve true efficiency, ensure traceability of information, and minimize human error, document-based processes should be connected to business processes. Organizations need the ability to share information across various enterprise applications in order to provide users with real-time access to up-to-date information.

EIP is Canon’s middleware product based on SOA (Service Oriented Architecture) that combines Canon’s latest imaging technologies and Enterprise Application Integration (EAI) into one package and enables users to automate and streamline document related business processes. EIP is a platform that offers all the necessary functions to create a solution based on business needs. It provides the framework to integrate any enterprise information system to document processing devices to streamline and optimize business processes. EIP is equipped to quickly respond to your ever-changing business process requirements to deliver reliable, cost effective end-to-end enterprise imaging solutions.
1.2. EIP Components

EIP consists of the following components used to efficiently create complex business solutions that include input/output document processing and enterprise application integration:

<table>
<thead>
<tr>
<th>Category</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Adapter Document Image Adapters</td>
<td>Format Conversion Adapter, PDF Adapter, Form Adapter, Excel Form Adapter, OCR Adapter</td>
</tr>
<tr>
<td>Enterprise Application Adapters</td>
<td>Email Adapter, Salesforce Adapter (CRM interoperation), SharePoint Adapter (ECM interoperation), *Third Party Adapter (Not included)</td>
</tr>
<tr>
<td>File System and Input/Output Adapters</td>
<td>File System Adapter, Device Adapter</td>
</tr>
<tr>
<td>Management Adapters</td>
<td>Authentication Management Adapter, Content Management Adapter, Job Management Adapter, Setting Management Adapter, Log Management Adapter</td>
</tr>
<tr>
<td>Management Application</td>
<td>Administration Tools, MFP Portal</td>
</tr>
<tr>
<td>EIP middleware</td>
<td>Web Application Server, BPEL Process Manager, Content Repository, Internal Directory Service, Format Conversion Tool</td>
</tr>
</tbody>
</table>

* EIP works with a variety of third party adapters that are not included as part of the middleware package.
1.2.1. Adapters

1.2.1.1. Document Image Adapters

These adapters provide various imaging process functions such as PDF join/split processing, form generation, and document classification and indexing.

1.2.1.2. Enterprise Application Adapters

These adapters provide functionality to interoperate with the external business systems. Adapters that are not bundled with EIP can be developed or third-party adapters can be used.

1.2.1.3. File System and Input/Output Adapters

File System Adapters provide functionality to access documents and files from SMB and FTP folders. Input/Output Adapters provide the capability to link enterprise applications to MFP devices to automate document processes that require printing, scanning and faxing.

1.2.1.4. Management Adapters

Management adapters provide the User Applications and Adapters with the basic functions necessary for system construction, including authentication management, job management, and log management.

EIP Adapter Configuration

EIP adapters are implemented as Web Services, however, some adapters, such as the setting management function and the log output function, are provided as Java libraries. The interface of an EIP adapter consists of operations as execution units of commands, and the function (port type) that groups the operations. To use an adapter from a User Application, you have to specify the applicable function and operation.
For example, the Authentication Management Adapter has authentication functions for user and group management, and functions to execute user and group management. The authentication functions include two operations as described below, for general authentication and administration authentication.

<table>
<thead>
<tr>
<th>Function Name</th>
<th>Port Type</th>
<th>Operation Name</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentication Function</td>
<td>AuthLoginPort</td>
<td>General authentication</td>
<td>login</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administrative authentication</td>
<td>adminLogin</td>
</tr>
</tbody>
</table>

### 1.2.2. Management Application

This application offers the "Administration Tools" used by administrators to check system operating status and for managing users and groups. It also provides "MFP Portal" functions to access business applications from the touch panels of Canon MFPs (multifunctional peripherals).
1.2.3. EIP Middleware

EIP includes the basic middleware components required to develop and operate EIP User Applications. These components include the Web Application Server, Weblogic, the Business Process Manager, BPEL, an Internal Directory Service that provides integration with Active Directory Services, and a Content Repository used for temporary and long term document management.
1.3. Features

EIP has the following features:

1.3.1. All the Necessary Integration Tools in One Package

EIP provides not only the Adapters for system interoperation and developing imaging processes, but also other components necessary for development, such as the Web Application Engine, Content Repository, and BPEL process manager, all in one package. EIP includes Administration Tools, to manage User Applications after system construction, which enable administrators to check system operation status, manage users and groups. Another tool included in EIP is the “MFP Portal” that provides a portal function for business applications on the touch panel in Canon MFPPs (multifunction peripherals).
1.3.2. EIP Flexible System Integration Empowered by SOA

The Process Manager, BPEL, provides the process integration capability to rapidly construct one-stop business applications, with little or no need to program. By providing web services Adapters to integrate information systems with document imaging technology and input/output devices, EIP provides the capability to create a flexible scalability solution as you continue to use your existing systems.
1.3.3. Streamline Hard-to-Manage Imaging Process

Imaging process functions, such as scanning documents, joining and splitting PDF, generating PDF and Excel forms, can slash the load of the document processing tasks that often are now handled manually. Since EIP is equipped with an internal Content Repository, you can centrally manage documents and image data to flexibly address various business needs.
1.4. Advantages

EIP combines Canon’s imaging technologies and Enterprise Application Integration (EAI) into one package that enables users to automate and optimize document and image-related business processes.

Imaging is important for an enterprise since it streamlines hard-to-manage, yet critical, document processes. For instance, documents can be captured, classified, information extracted and delivered to multiple applications automatically and simultaneously. Imaging can also generate new documents by combining data from various applications into a portable format such as PDF or Excel that is easy to print, email, fax, or archive. It also integrates input/output devices and their various functional capabilities into the business automation process including the capability to store documents and information in a repository.

In fact, Canon’s unique advantage is that it provides a packaged end-to-end imaging platform to enterprise applications making solution development less complex which reduces implementation time and significantly lowers overall cost. It is possible to piece together multiple business processes from multiple vendors by developing individual custom connectivity, or adopt EIP as the company’s imaging platform and enjoy the flexible and scalable integration capability it offers no matter how your business process requirements change in the future.

Here are the lists of business processes that can be significantly improved by adoption of EIP.

**Horizontal Applications**

- HR
  - Employee On-Boarding
  - Requisitions
  - Candidate Application Processing
  - Benefit Applications
  - Government Forms Processing
  - Personnel changes
  - Employee Training

- Accounting
  - Invoice Processing
  - Purchasing
  - Records Management
  - Payroll Processing
  - Billing
  - Budget and Financial Reporting
  - Check Processing
  - Expense Reporting

- Marketing
  - Direct mail campaigns
  - Customer surveys
  - Newsletters
  - Flyers and brochures
  - Contract renewals
  - Lead Generation
  - Advertising

- Regulatory
  - Contracts processing
  - SEC filings
  - Document reviews
  - External communication reviews
  - Compliance policies
  - Government regulations
  - Disclosure documents

- Mailroom
  - Incoming Mail Processing
  - Document Monitoring, Routing and Delivery
  - Document Tracking
  - Print Jobs Fulfillment

- Procurement
  - Vendor Acquisition: quotes, proposals, solicitations
  - Contract Renewals
  - Contract Processing
  - Requisitions Management
  - Supply Management
  - Import Compliance
Vertical Applications

An EIP based solution can provide the following benefits:

- Reduce resource intensive labor used to process and locate paper based documents
- Eliminate manual data entry error by transforming paper documents into digital documents and data
- Eliminate un-necessary manual process steps by automating business workflows
- Reduce paper trail by storing digital copy of documents
- Make documents available when needed within enterprise and other information systems
- Increase efficiency and confidence to help companies focus on their customers
- Help you manage your business, not paper
2. Operation Environment

2.1. Hardware Environments

2.1.1. Server Environment

EIP requires the following minimum server configuration:

- All-in-one EIP installation
  All EIP functions are installed on a single physical or virtual machine
- Separated database configuration
  EIP services and databases can be installed separately on physical or virtual machines

In either configuration, the necessary hardware environment is the same, as shown below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>4-core XE5540 2.53 GHz or equivalent.</td>
</tr>
<tr>
<td>Memory</td>
<td>At least 16GB</td>
</tr>
<tr>
<td>HDD storage</td>
<td>At least 200GB (Up to 2TB for the database)</td>
</tr>
</tbody>
</table>

2.1.2. Client Environment (Development PC Environment)

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Pentium 4 2 GHz or more</td>
</tr>
<tr>
<td>Memory</td>
<td>At least 1GB</td>
</tr>
<tr>
<td>HDD storage capacity</td>
<td>575 MB or more</td>
</tr>
</tbody>
</table>
2.2. Software Environment

2.2.1. Server Environment

Physical Server

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows Server 2008 R2 SP1 Enterprise (English Edition)</td>
</tr>
</tbody>
</table>

Virtual Server

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Host: Windows Server 2008 R2 SP1 Datacenter</td>
</tr>
<tr>
<td></td>
<td>Guest: Windows Server 2008 R2 SP1 Enterprise</td>
</tr>
<tr>
<td>Virtual software</td>
<td>Hyper-V 2.0</td>
</tr>
<tr>
<td>(If server is virtualized)</td>
<td></td>
</tr>
</tbody>
</table>

2.2.2. Client Environment (Development PC Environment)

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows XP Professional SP3; Windows 7 (32-bit)</td>
</tr>
<tr>
<td>Development tool</td>
<td>Oracle JDeveloper 11g Studio Edition (11.1.1.5.0)</td>
</tr>
<tr>
<td>SOA extension module</td>
<td>SOA extension (11.1.1.5.0)</td>
</tr>
</tbody>
</table>

2.2.3. List of Interoperation Systems

EIP interoperates with the following external systems and device functions:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Product Name</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canon</td>
<td>Form Manager</td>
<td>Used to create PDF forms or to print them.</td>
</tr>
<tr>
<td>Canon</td>
<td>MEAP Web SDK</td>
<td>Performs scanning and sends FAX from the browsers of MFPs.</td>
</tr>
<tr>
<td>Canon</td>
<td>PDF Direct Print Option</td>
<td>Prints PDFs to multifunctional peripherals without printer drivers.</td>
</tr>
<tr>
<td>Salesforce.com</td>
<td>Salesforce CRM</td>
<td>Data I/O destination</td>
</tr>
<tr>
<td>Microsoft</td>
<td>SharePoint Server 2010</td>
<td>Data I/O destination</td>
</tr>
</tbody>
</table>
2.2.4. List of Interoperation Devices

EIP facilitates interoperation with external devices that print, scan and FAX documents.

For a complete list of supported Canon devices, please contact your EIP sales representative.
3. Adapters

3.1 Document Image Adapters

Document Image Adapters provide image processing functions such as PDF join/split processing and form generation. The following is the summary of Document Image Adapters:

3.1.1 Format Conversion Adapter

The Format Conversion Adapter converts:

- Microsoft Office or image files to a PDF 1.6 file
- An image file (TIFF, JPEG, BMP, GIF or PNG) to an image file (TIFF, JPEG, BMP, GIF or PNG)

This adapter supports the following files:

- TIFF (TIFF Group 5 & 6, TIFF CCITT Group 3 & 4)
- JPEG (JFIF, JPEG, JPEG 2000)

3.1.2 PDF Adapter

The PDF Adapter provides functionality to edit PDF files and to change the editing properties and security settings.

The supported PDF file editing processes:

- Add watermark
- Extract pages/ split one PDF file into multiple files
- Merge PDF files
- Overlap (merge) two PDF pages
- Add text notes

Supported security settings are:

- Assign user password
- Assign owner password
- Set print privileges
- Set copy privileges
- Set edit privileges

Supported PDF files are:

- Version: PDF 1.4, PDF 1.6
- File size: Up to 100MB
- Number of pages: Up to 1,000 pages

3.1.3. Form Adapter

The Form Adapter uses the Form Manager to generate PDF forms and print forms. The Form Adapter provides three functions:

• Print Form – Merges DAT or CSV format files with predefined form templates and print the resultant form.
• Create PDF Form – Merges DAT or CSV format files with predefined form templates and generates a PDF form.
• Acquire Resource List – Acquires a list of the file names of form files, image files, and graph data files that are stored in a specified location in EIP.

3.1.4. Excel Form Adapter

Excel Form Adapter merges the Excel form files, CSV data files acquired from external source, and control files, to create excel forms.

This adapter supports the following formats of Excel form files:

• Microsoft Office Excel 2003 SP3 file extension (.xls)
• Microsoft Office Excel 2007 SP2 file extensions (.xls or .xlsx)

This adapter helps support the following use case:

• Create a standard Excel form such as a monthly summary form by acquiring data from Salesforce or SAP in CSV format

3.1.5. OCR Adapter

The OCR Adapter is used to enhance the quality of a scanned document and to classify and index documents.

• The OCR Adapter can only process single page B&W TIFF forms
• Color/grey-scale images must be binarized (converted to B&W TIFF) before document classification and indexing is performed

This adapter supports the following capabilities:

• Preprocess
  Preprocess functions such as binarization, deskewing, orientation detection, line removal, border removal, etc. Preprocessing is used to improve the appearance of the image and to improve the accuracy of OCR
• Document classification
  OCR Adapter has two types of document classification.
• Fingerprint classification using only graphical (structural) features of the image for classification.
• Zonal OCR/barcode classification that uses the results of OCR/barcode recognition to classify a document.

- Document indexing
  Zonal OCR/barcode recognition is used to extract content used for document indexing.

Prior to using the OCR Adapter, a definition file (project) must be created using IRISPowerDesigner. This project includes the setting information for preprocessing, document classification and document indexing.

- The OCR Adapter can only be configured with one definition file (project)
- A project created by IRISPowerDesigner must only have one classification method, either fingerprint or zonal OCR/barcode
- A project must only have one set of preprocess parameters
- Each document type can only support one indexing template that may include 1 - 255 zones

### 3.2 Enterprise Application Adapters

Enterprise Application Adapters provide functionality to link to external systems such as ECM, CRM and other external information systems. The following is a summary of Enterprise Application Adapters:

#### 3.2.1 Email Adapter

Email Adapter provides the capability to send notifications or automate the distribution of customized mailings using your email server.

This adapter supports the following encoding of the attachment files:

- Base64

This adapter helps support the following use cases:

- Distribute customer specific email messages with attached files
- Distribute customer specific email messages with URL to retrieve file
- Email Admin notification when system error occurs

#### 3.2.2 Salesforce Adapter

Salesforce Adapter is used to integrate EIP with a Salesforce.com website.

Supported Salesforce.com functions are:

- Authentication
- User Master
- Accounts Management
- Opportunities Management
- Product Management
• Activities Management
• Reports Interoperation
• Custom Data Operation

The following Salesforce.com version has been tested:

• Salesforce version 21.0

This adapter helps support the following use cases:

• Acquire a list of opportunities linked with accounts from the accounts list
• Acquire a list of activities linked with opportunities from the opportunities list
• Acquire list of contacts and print it
• Acquire calendar data and print calendars
• Scan a document and upload to Salesforce.com account

### 3.2.3 SharePoint Adapter

SharePoint Adapter is used to integrate EIP with a SharePoint Server.

It supports the following functions:

• Acquire
• Insert, update, and delete SharePoint data
• Uploads and downloads documents
• Search
• Versioning

The following version of SharePoint is supported:

• Microsoft SharePoint Server 2010

This adapter helps support the following use cases:

• Search documents with SharePoint permissions from MFP Portal and prints them
• Scan and save documents to new or existing folders on SharePoint
• Save data acquired from other systems to new or existing folder on SharePoint
• Delete expired SharePoint documents and folders in batch processes

### 3.2.4 Third Party Adapter

In addition to the above standard enterprise adapters, there are many third party adapters available in the market to integrate with ERM, ECM, CRM and other external systems. Based on the integration requirements of the customer and specific use case, third party adapters available in the market can be leveraged or custom adapters can be developed to integrate with external systems including those that are legacy or custom. Contact our Professional Services team for more details about support status.
3.2.5 Device Adapter

The Device Adapter provides functions to facilitate the interoperation with devices to scan, print and send FAX without any consideration to the device specific implementation. It supports the following functions:

- Print PDF file
- Fax TIFF or PDF file
- Acquires cassette information, printer settings, names of FAX cover sheet templates
- Scan document and convert to a PDF or image file(s)

This adapter supports the following PDF files:

- Version: PDF1.4, PDF1.6
- File size: 100MB
- Number of pages: any

This adapter supports the following TIFF files:

- Pages: Multiple pages
- Color: Monochrome
- Compression formats: Uncompressed, CCITT-Group 3 FAX compression, CCITT-Group 4 FAX compression, Packbits compression

This adapter supports the following scan paper sizes:


This adapter supports the following fax paper sizes:

- Letter, LetterR

This adapter helps support the following use cases:

- Process data acquired from external systems, then fax the data
- Processes data acquired from external systems, then convert the data to a PDF file and print the PDF file to a MFP or printer
- Scan a document from a MFP, processes the data, then send and save it to external systems

3.2.6 File System Adapter

The File System Adapter performs folder and file operations for SMB and FTP servers and monitors file creation in folders.

Folder Operation Functions are:

- Create folder
- Delete
- Move
- Copy
- Acquire folder information
• Acquire child information

File Operation Functions are:
• Delete file
• Move
• Copy
• Acquire file information
• Upload
• Download
• Copy from Content Repository to SMB or FTP
• Copy from SMB or FTP to Content Repository

This adapter supports the following SMB servers:
• Windows Server 2003 R2
• Windows Server 2008
• Windows Server 2008 R2

The FTP server configured using the FTP server functions of IIS (Internet Information Service) in Windows Server 2008 is supported.

The supported IIS versions are:
• Windows Server 2003 R2: IIS 6.0
• Windows Server 2008: IIS 7.0
• Windows Server 2008 R2: IIS 7.5

This adapter helps support the following use cases:
• Monitor the FTP server (the destination of the scanned data from the scanning device) and notify User Application to process
• Send files to shared folders

### 3.3 Management Adapters

Management adapters provide the core functions that are used to manage authentication information, the content management engine, jobs, setting values, and logs for User Applications and Adapters. The following are the summary of the Management Adapters:

#### 3.3.1 Authentication Management Adapter

The Authentication Management Adapter performs authentication to internal directory service (IDS) and external Active Directory (AD) for the User Application and manages user group in EIP including synchronizing attributes between EIP IDS and AD.

This adapter supports the following Active Directory:
• Windows Server 2003 Active Directory
• Windows Server 2008 Active Directory
This adapter helps support the following use cases:

- User Authentication for EIP and Adapters
- Integration with Active Directory

### 3.3.2 Content Management Adapter

The Content Management Adapter provides integration of ECM to the User Application. It is used as a repository where Base Applications store the progress of processes and provide the storage of temporary files to User Applications.

This adapter helps support the following use cases:

- User Application stores PDF file for pull printing
- User Application saves the scanned document and reservation information (e.g. scan ticket)

### 3.3.3 Job Management Adapter

The Job Management Adapter manages jobs within a series of activities of BPEL processes.

This adapter helps support the following use case:

- User Application checks job status

### 3.3.4 Setting Management Adapter

The Setting Management Adapter manages EIP setting information, e.g., loading and saving setting information used by Adapters.

This adapter supports the following number of applications:

- Up to 100 applications including Base Applications

This adapter helps support the following use case:

- Setting common data which can be shared between adapters

### 3.3.5 Log Management Adapter

The Log Management Adapter outputs logs, and acquires or deletes log output.

This adapter supports the following number of bytes for the messages:

- Up to 4,000 bytes per message can be output to database

This adapter helps support the following use case:

- User Application log messages for troubleshooting a processing error

For more details on the options and limitations of the adapters, the reader can refer to other EIP documents. Please contact our Professional Services for more details.
4. Management Application

4.1. Administration Tool

The Administration Tool provides the user interface to manage authentication information, jobs, setting values, logs, and application states for the EIP administrator and developer.

Administration Tools for EIP administrators

- Portal UI (Login screen and other menu display)
- Job information management
- Application status management
- Log information acquisition
- Application setting values management
- User information management
- Group information management
- Domain information management

Administration Tools for EIP developers

- Application setting definitions management

The Administration Tools are used in the following cases:

- EIP administrators:
  - Displays status of jobs within EIP Applications
  - Imports/exports setting information for Base Applications.
  - Manages EIP user information using user and group information management
- EIP developers use the Administration Tools to define the necessary settings for EIP Applications
- If errors occur, system logs can be accessed using the Administration Tools and sent to your System Integrator to assist in determining cause of the error

The Administration Tools have the following functions:

<table>
<thead>
<tr>
<th>Function Name</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portal UI (login screen and other menu display)</td>
<td>Administration Tools portal UI to execute Administration Tools.</td>
</tr>
<tr>
<td>Job information management</td>
<td>Displays, deletes, and exports job information.</td>
</tr>
<tr>
<td>Application status management</td>
<td>Performs the following processes on service engines, Web applications, and composite applications: Displays service engine status Displays Web application status Displays composite application status Starts, stops and restarts service engines Starts, stops, restarts, deploys, and undeploys Web applications Starts, stops, restarts, deploys, and undeploys composite applications</td>
</tr>
</tbody>
</table>
### Log information acquisition

Performs the following processes on Base Applications logs, User Application logs, job logs, audit logs, and composite logs:

- Acquires log file
- Searches and acquires log record
- Exports log record
- Searches and acquires composite log information
- Exports composite log summary information
- Exports composite log detail information

### Application setting values management

Browses, sets, initializes, exports and imports setting values for each application.

### User information management

Displays search results, registers, changes, deletes, exports and imports (batch registration and update) user information.

### Group information management

Displays search results, registers, changes, deletes, exports and imports (batch registration and update) group information.

### Domain information management

Displays search results, registers, changes, deletes, exports and imports (batch registration and update) domain information.

### Application setting definitions management (for EIP developers)

Displays, deletes, imports and exports setting definitions, and exports all settings.

### 4.2. MFP Portal

MFP Portal dynamically generates a portal screen for each logged in user utilizing the embedded web browser in Canon MFP, and displays the UI on the local UI screen of the multifunctional peripheral.
5. Use Cases

EIP can be leveraged to optimize and automate numerous business processes across industries or functional areas. Here we show three examples of use cases to help you better understand how EIP can increase your team’s productivity and reduce development cost in actual business situations.

5.1. Auto Lease Contract Renewal

An example of a typical paper-based process is contract renewal. Here we show the story of Pete who struggles to send out an auto lease contract renewal to his clients.

Pete works in the Contract Management department of AXC Auto Inc. His job is to identify automobile lease contracts that will expire soon, send notifications and paperwork to the customers, and then process the signed renewals.

Pete has to pull information from multiple applications such as contract database, CRM, and legal database to create the contract renewal notification document, and type data into multiple systems. The process is manual, time consuming and prone to errors.

But with EIP, this process can be simplified:

1. Pete accesses the User Interface of the Contract Management System. He searches contracts that will expire soon, then he clicks the “execute” button.
2. EIP retrieves data from Contract Management System and ECM, and then creates a notification document using form and PDF adapters.
3. EIP stores the document in the Repository, registers its URL to CRM and prints it or emails it to each customer.
Now here is what happens when the customer sends back the signed car lease contract renewal:

1. Pete (from the Contract Management Dept) receives the signed contract from a customer.
2. He scans the signed contract using the MFP.
3. EIP gets the scanned document data, recognizes the barcode, and then instructs the Contract Management System to create a new contract. EIP stores it in the repository, registers its URL in the CRM and registers the value of the new contract to ERP.
The following diagram illustrates the entire contract renewal process, including renewal package creation and processing of the incoming renewed contract.

To summarize, the benefits of EIP in the contract renewal process are as follows:

- Improve operation cost by reducing manual tasks which are prone to human errors
  - Easy access to information in different systems
  - Flexible document handling
  - Increase traceability of information

- Reduce development cost
  - The solution is easy to develop, implement, maintain, enhance and modify

5.2. **Travel and Expense**

Submitting travel expenses is an example of a widely used paper-based business process that is time consuming and prone to human errors. Customers who have needs for using travel management / expense reporting software can enjoy the benefit of EIP.

Here is the story of John, an engineer working for BioX Corporation, who came back from a conference in Chicago. He has a wallet full of receipts collected from his 3-day trip, so he would like to get the expenses reimbursed right away. But it will take time for him to complete his expense report since John needs to submit all the receipts to Accounting through inter-departmental mail, and Accounting, upon receipt of them, has to input the expense data to the ERP/accounting system.
But with EIP, this process can be automated and simplified. Here is the outline of the process:

1. John creates his travel expense reports in the ERP system (such as PeopleSoft)
2. Using MFP or a camera on a tablet computer, John scans receipts and inputs the necessary information to the device.
   a. EIP gets the scanned document data and stores the image file in the repository. The URL is sent to T&E system with a request for approval.
   b. The expense is approved by John’s manager, and then sent to Accounting to be audited for compliance with corporate policy.
3. Once approved, the data will go to accounting system for transaction processing and payment.
In summary, the benefits of EIP are:

- Improve operation cost by reducing manual tasks that are prone to human errors
  - Capturing and attaching the receipts image to ERP system is automated
- Reduce development cost
  - The solution is easy to develop, implement, maintain, enhance and modify as it can integrate with your existing Travel and Expense system.

### 5.3 Loan Application

Applying for a loan is an example of a common paper-based process in the Financial Services and Banking industries. Loan application is a time-consuming process, which can be significantly simplified by use of EIP. Let’s take a look into the case of Jill who is applying for a business loan.

Jill is a young entrepreneur ready to start her own business. But first she needs to apply for a loan to cover the initial investment. She needs to submit the loan application document along with various supporting documents to her bank and await the bank’s approval decision. The application requires a lot of paperwork, which is a challenge. Additionally, the process involves multiple systems such as an accounting system, third-party loan applicant service, etc... Automating this process may require extensive development work.
With EIP however, the process can be fully automated with very limited development effort. Let’s look at a loan application that leverages EIP. First, the input part – when the incoming loan application is processed:

1. Jill fills out an online application, then gathers all supporting documents required by the bank and goes to the local bank’s branch office.
2. A loan officer at the bank’s branch office prints out the loan application form, collects the supporting paperwork from Jill and helps her sign the application.
3. Paperwork is scanned to the MFP.
4. Data from the paperwork is extracted by OCR (Optical Character Recognition) and matched with Jill’s online application.
5. Paper is converted to image and stored in the ECM (Enterprise Content Management) system, such as SharePoint.
6. The account data is sent to a third-party loan application service for credit check.
Now, let’s look at the next part of the process – the application review and approval. Here is what happens:
1. The bank manager (underwriter) accesses the User Interface of the account management system to review the application, contract and account, and then he approves or denies the loan.
2. The approval/denial letter is sent back to Jill automatically (as email or mail).

The following diagram illustrates the entire loan application process:
In summary, EIP brings the following benefits:

- Improves operation cost by reducing manual tasks which are prone to human errors
  - Automates capturing information from the paper documents and updating appropriate applications
  - Automates document routing (print, e-mail, archive)
  - Reduces cost of managing paper
- Reduces processing time for the bank and waiting time for the customer
- Reduces development cost
  - The solution is easy to develop, implement, maintain, enhance and modify
6. Conclusion

We walked you through the overview of EIP, its features, advantages, specific use cases and explanation of the adapters and management tools it offers. If we have done a good job, you must be looking forward to moving on to the next step.

Contact our Professional Services team for consultation on your specific business requirements on how we can help you streamline and optimize your business processes to increase your operational efficiency to quickly create an end to end business solution that can integrate input/output document processes and enterprise applications.

Visit the Canon Information and Imaging Solutions website at www.ciis.canon.com, or email us at info@ciis.canon.com.