

ISIS Papyrus

# Focus Report

## Campaigns



### Effective Campaigning:

- ■ ■ **increases** response rates
- ■ ■ **reduces** response times
- ■ ■ **strengthens** customer relationship
- ■ ■ **builds** trust and guarantees repeated business



Campaign management and tracking of customer responses ensure all contact with customers is relevant and timely. Papyrus software for personalized documents integrates capture technology to process incoming mail.

Communication with your customers is bi-directional. Papyrus enables businesses to talk to their customers on a more personalized level, and helps them to listen to customer responses.

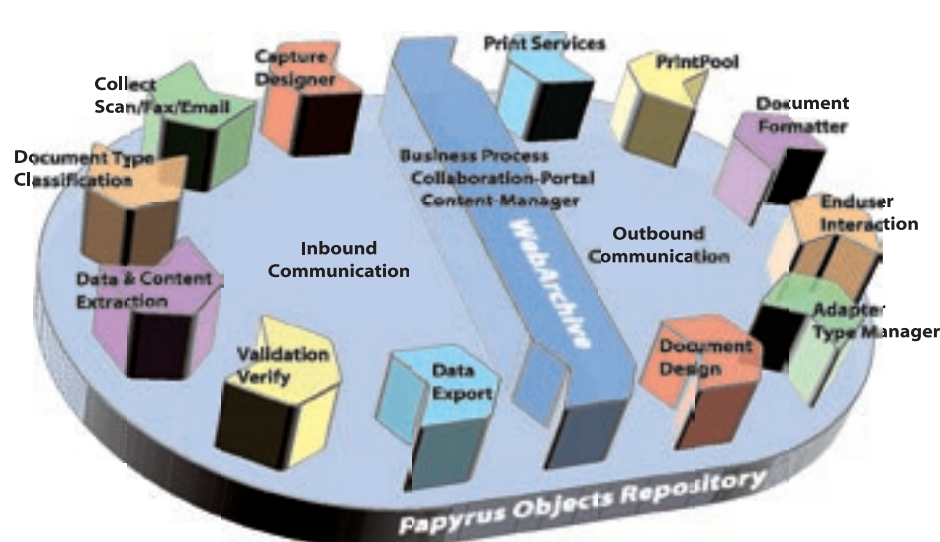
# Automated Campaign Response Management

It is important to control the message you send and equally or even more important how and when a prospect responds to which message. For existing customers, also the purchase history needs to be considered.

**You need communication by interest and classification by last action.**

Such information is not available in typical CRM systems. Information from your customer database, your ERP System and your campaign management knowledge database needs to be integrated. The common approach to these requirements is to merge all data elements into a data warehouse. However, the complexity and cost of data warehousing is prohibitive.

The **Papyrus Campaign Management Solution** does not propose high volume batch campaign management but deals with prospect and customer actions in real time. Real time processing of a response, or any other event, is immediate after arrival.

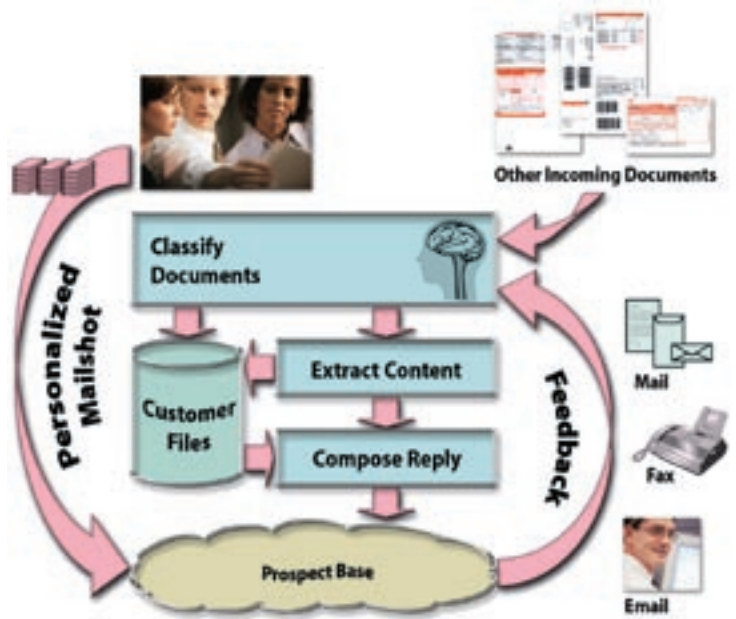


Each customer response has a unique processing requirement including access to the relevant databases. Data replication from a productive database is only performed when unique search functions such as fuzzy matching is required. This generates a unique response for each customer request.

**Conclusion:**  
 You should not shower loyal customers with unnecessary mailings for items they have already purchased or repeatedly with information they have already received.

## What does Papyrus Campaign Manager do?

- 1 It creates 1:1 personalized mail shots based on business rules. Documents are sent via mail, email, fax or Web to a selected group of prospects or customers available in CRM or ERP database systems.
- 2 Responses are received as input documents:
  - ▲ Paper scans, fax, email, Web, SOAP message  
Papyrus classifies and creates logical documents:
  - ▲ Invoice, order, reply, registration, ....  
Papyrus extracts the data content
  - ▲ Tel no, fax no, customer no, customer name....  
Depending on business rules, received responses are routed to the correct location (queue).  
Extracted data is stored in a CRM System, Database...
- 3 Once the data is captured it triggers a workflow that leads to a response. New OUTPUT documents are automatically created.
  - ▲ Reply, notification, request ...  
These physical output documents are formatted and sent.
  - ▲ Printed and mailed, faxed, emailed, PDF, Web  
New responses are stored in the archive. Notice is automatically given to a certain business group or person.
  - ▲ Customer care, sales, marketing  
Customer representatives have access to all documents sent and received.

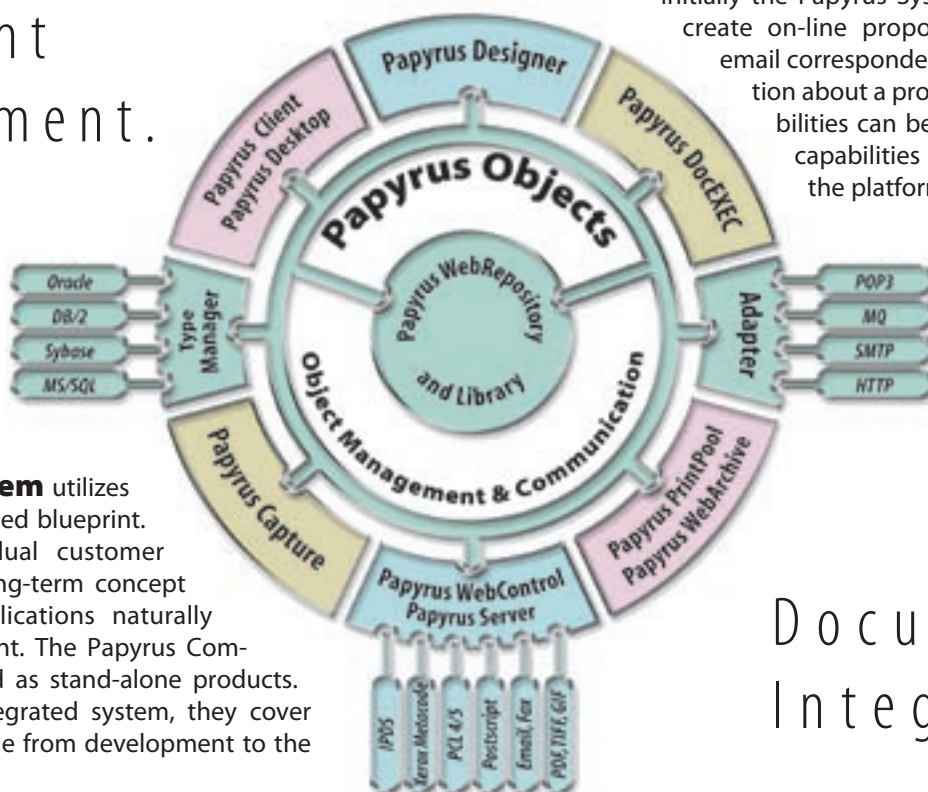


# One System Manages Incoming and Outgoing Correspondence.

## Integrated Document Management.

### Step by Step Implementation:

Initially the Papyrus System might be used to create on-line proposals. If an unsolicited email correspondence arrives with a question about a proposal the capture capabilities can be leveraged. Now those capabilities can be just added onto the platform that is already in production.



The **Papyrus Document System** utilizes a thoughtfully designed blueprint. Solutions to individual customer problems using a long-term concept integrates new applications naturally into your environment. The Papyrus Components can be used as stand-alone products. Combined in an integrated system, they cover the complete life cycle from development to the archive.

Document  
Integration®

The Papyrus Document Framework enables you to design and produce 1:1 mailshot letters, customer offers with reply forms and marketing mailings in record time and at substantially lower cost.

# Creating 1:1 Personalized Mailshots

## A Typical Campaign Generation Workflow

**3** A DB query using the **Papyrus Typemanager** is started to check the availability of this fund.

**4** If the result is positive, a number of different templates are shown to the **User** for the selected letter type (e. g. M1)

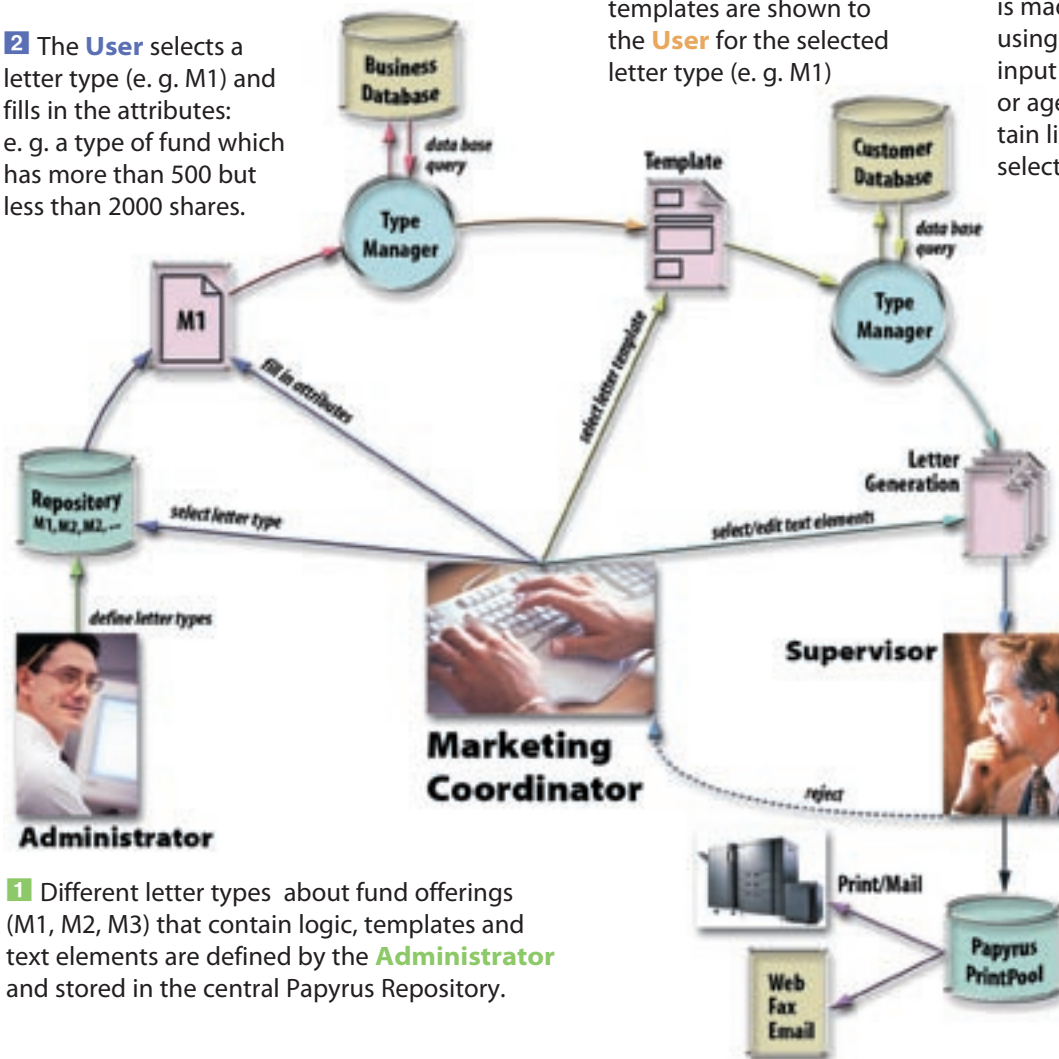
**5** The **User** selects templates and depending on his selection, a DB query is made to the customer database using **Papyrus Typemanager**. The input data, for example a certain group or age and type of customer with a certain living pattern, is delivered for the selected letter templates.

**2** The **User** selects a letter type (e. g. M1) and fills in the attributes: e. g. a type of fund which has more than 500 but less than 2000 shares.

**6** The personalized **letter generation** is started with the received data. All elements of the letter, such as text, images, marketing inserts, can be defined as conditional and dependent on certain demographics of the prospect or customer.

**7** The letters are automatically sent to the **Supervisor** for review and sign off. In case a letter is rejected it goes back to the user or the supervisor makes the necessary changes.

**8** Once the letters are successfully signed off all campaign letters are formatted, printed and mailed using the central high speed **print and mail** facilities.



**1** Different letter types about fund offerings (M1, M2, M3) that contain logic, templates and text elements are defined by the **Administrator** and stored in the central Papyrus Repository.



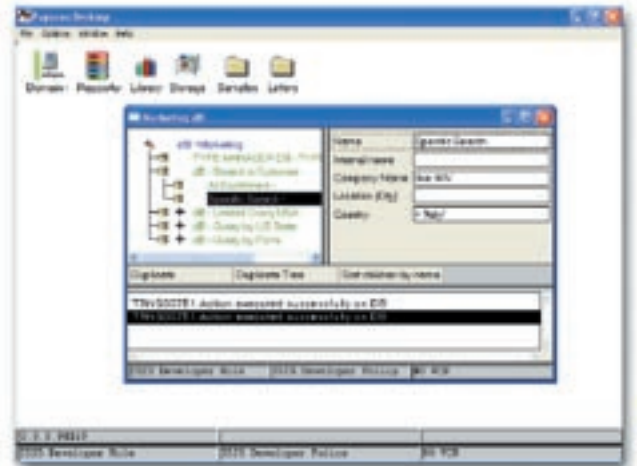
## Papyrus Type Managers provide simple user and application access to supported databases without coding SQL and the need for acquiring or installing database clients on each PC.

The **Type Manager** is instantiated by the developer on a database server. A simple IMPORT command will extract the table definitions and create CLASS definitions in the Papyrus Repository. With these definitions, the developer or administrator can now define business object TEMPLATES. One row of the DB represents one object instance. In these definitions, the fields of the tables are mapped to the defined business object. Queries produce a list object, which is a table extract of the database. In this query template the user can now edit the search or key criteria. This is much simpler to use than SQL.

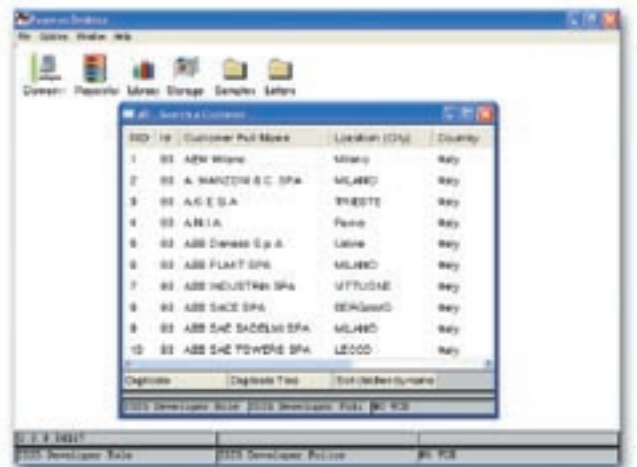
Once the data is entered the user can drag the query to the type manager and drop it. This will execute the search in the database. Alternatively the user can also click on 'GET DATA' in the query template.

In the above view, the message window is opened so that the Oracle DB messages can be seen. In case the query returns more than one row, a QUERY LIST is created containing the hit list.

The query list object can be used immediately in any Papyrus application as an input data object. This object can also be used in any other application. It can also be saved as an ASCII delimited or XML tagged file.



Papyrus Type Manager for database



Database search for a customer

**A Type Manager provides a universal set of data templates, which can be reused in any Papyrus Objects application and on any of the supported platforms.**

### The 4 EYE Principle for Campaign Sign-off

The marketing coordinator sets the status 'Document Complete' which makes the document available for verification to a supervisor. The supervisor can, according to this role and document state, perform further editing or release or "Sign-Off" the document.

### The User Management

Papyrus Objects uses an integrated authorization system, to ensure that no user or program can access the system without the proper authorization. Authorized users have full management control of all phases of correspondence production, from document assembly to content approval.

### Interfacing with RACF, LDAP and ACTIVE Directory

Logging onto the Papyrus Desktop executes the given ID and password from the customer's existing security system. Papyrus can interface with the company security system on the mainframe (i.e. RACF) and provides Adapter i.e. for LDAP. Papyrus Objects can also maintain security information by itself in its own storage.

# Responses are received by

■ Mail ■ Fax ■ Emails ■ Web ■ SOAP Message

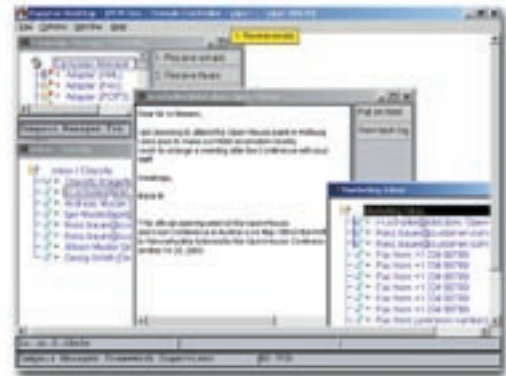
## ■ Incoming Mail/Scanning

Responses are received as input documents. They are scanned and appear in the Papyrus Scan Client with thumbnails of all the scanned documents (TIFF Images) and the first one displayed in full.



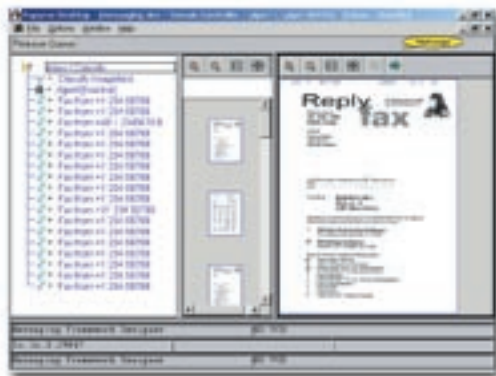
## ■ Incoming Emails

For emails, neural networks are used to compare similarities and differences with incoming emails and those stored in the domain knowledge - built up by examples. Words and phrases are used to classify an email, and not just those in the subject line. This is approximately 10 times quicker than OCR recognition.



## ■ Incoming Faxes

Fax documents are visible in the Input Queue displaying the originating fax number.



## ■ Web Response

You can have a Web application where customers fill out HTML response forms. These are captured with the HTTP Adapter.

## ■ SOAP Message:

You can use a SOAP message to send response information from your 3rd party application server, JAVA application, Web Portal or any other WebServices enabled system. The SOAP message triggers a response task.

## ■ ■ ■ ■ ■ Flow of received responses for a campaign

**1** Responses are received as input documents: mail, fax, Web, email, SOAP message

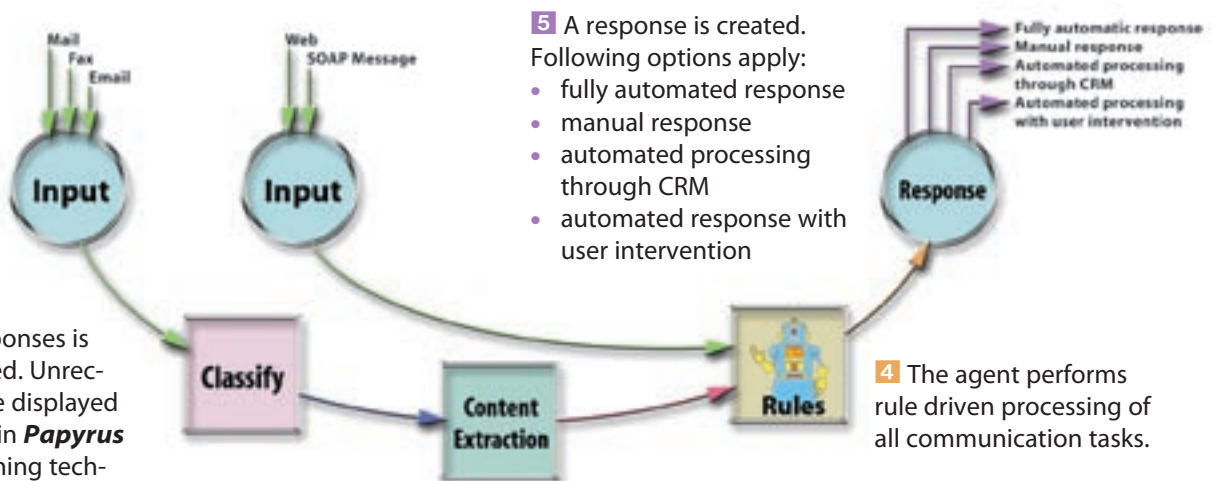
**2** Classification of responses is automatically performed. Unrecognized documents are displayed for visual classification in **Papyrus WebClassify**. Self learning technology ensures that all types of documents can be classified.

**5** A response is created. Following options apply:

- fully automated response
- manual response
- automated processing through CRM
- automated response with user intervention

**3** Content Extraction  
All fields of interest are extracted from the recognized document class.

**4** The agent performs rule driven processing of all communication tasks.

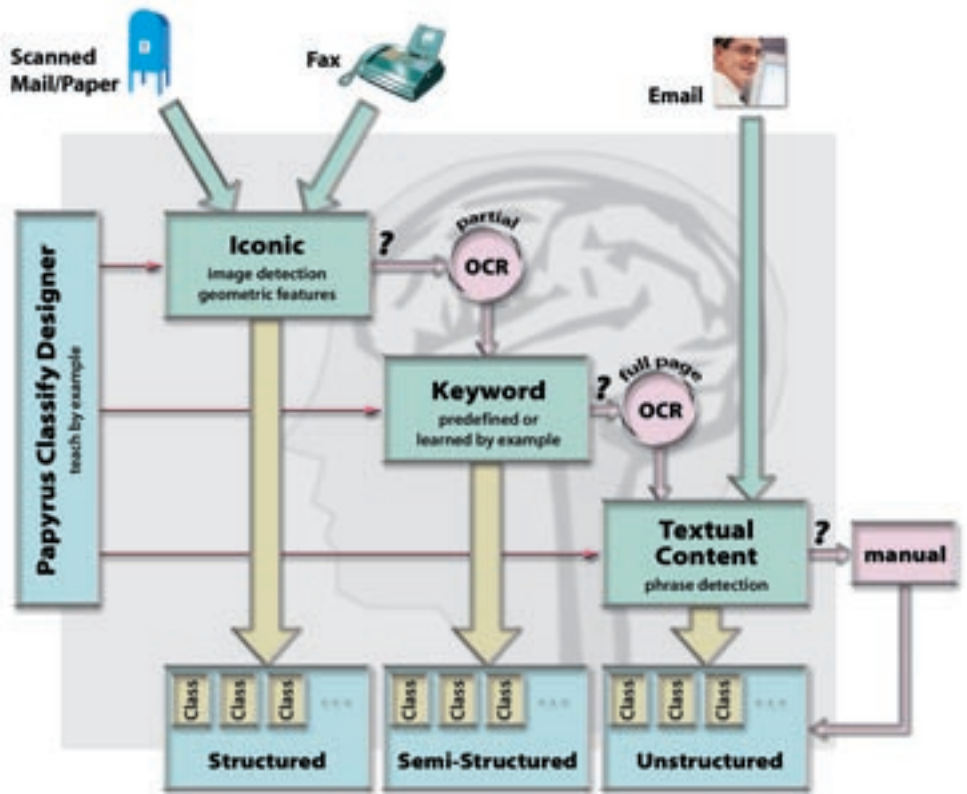


# Classification of responses

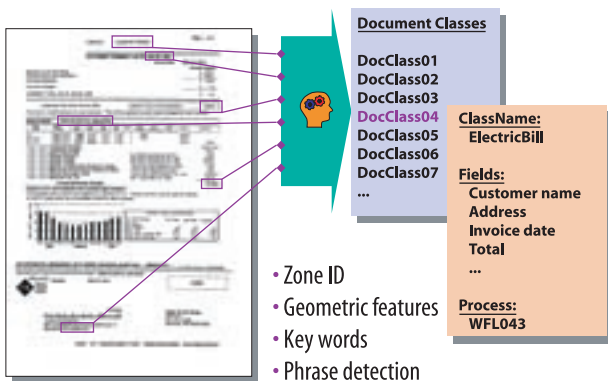
A physical document, fax or email is received. The classification is independent of document type. The classification is trained by example.

## Exception handling:

If the classification is not successful, then it is routed to the manual classification process. Each unrecognized document will be displayed automatically for visual classification. The document will be flagged and routed to the supervisors inbox for further verification.



# Self-learning technology ensures that all types of documents can be classified.



The classification applies the knowledge of rules acquired in training unknown documents. The system uses a number of documents for each document-class for training purposes. From this input the classification process learns the rules by itself.

## Fine-tuning and retraining the system:

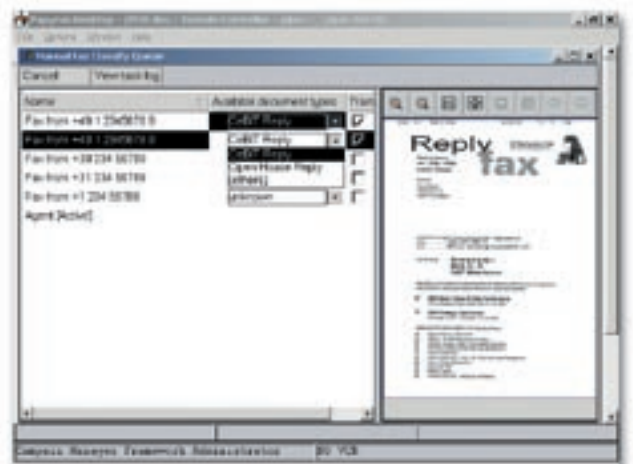
Based on the documents that could not be classified correctly, constant fine-tuning is possible while running in real time mode. This ensures long-term optimization of the system and enables flexible adjustment of the rules based on the changes in the documents that are received.

# Manual Classification

## Web Classify

All unrecognized documents that failed to be classified to a known document type are still in the Extraction Queue. These need to be classified manually. Manual classification is performed automatically using an HTML page that allows an operator to manually classify each unrecognized document in sequence against a pre-defined set of document types.

Each manual classification will be stored against the logical document Template, and when the next 'training' process is run, these manual classifications will be added to the domain knowledge. Any subsequent document will be classified automatically, not requiring manual classification.



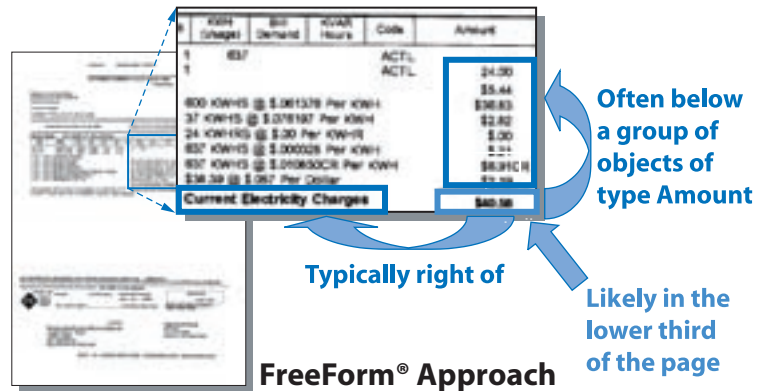


Once the scanned document is classified as a specific document type, a template is used to instantiate a task that extracts the fields of interest from the document, based on the data definition in the template.

# Content Extraction

## Extraction Process

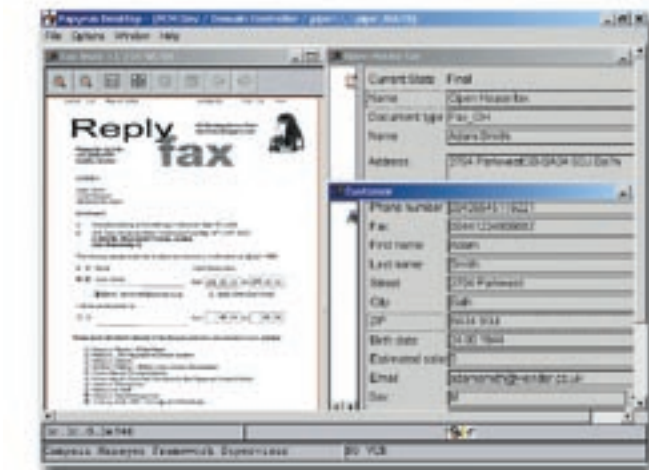
The key data from the image is extracted, and using **Fuzzy Matching**, the correct customer data will return from the data base and populate the customer data attributes. Fuzzy Matching improves the response-data extraction substantially to more than 80% accuracy. 80% of responses need no manual intervention.



## Papyrus FreeForm...

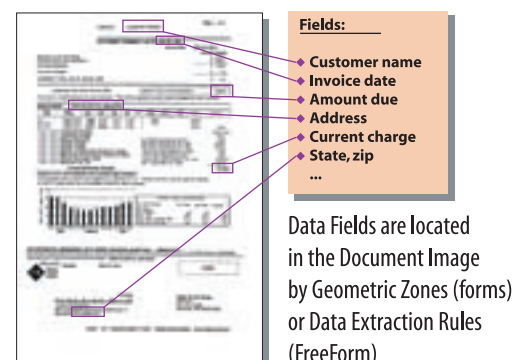
...enables automated processing of unstructured documents for classification and extraction. In the classification stage various self-learning procedures are employed. For the extraction process the exact position of the individual fields does not have to be known.

For quick and effective definitions of the relevant rules and to monitor the self learning process a powerful **FreeForm Designer** is available.



## Business Data Extraction

The document process can extract business data from the document using fixed field or **FreeForm** functionality. These data fields can be used to write campaign management information to the database, or update your CRM or ERP system data. Some of the data is used to formulate a personalized response according to your Campaign Management rules.





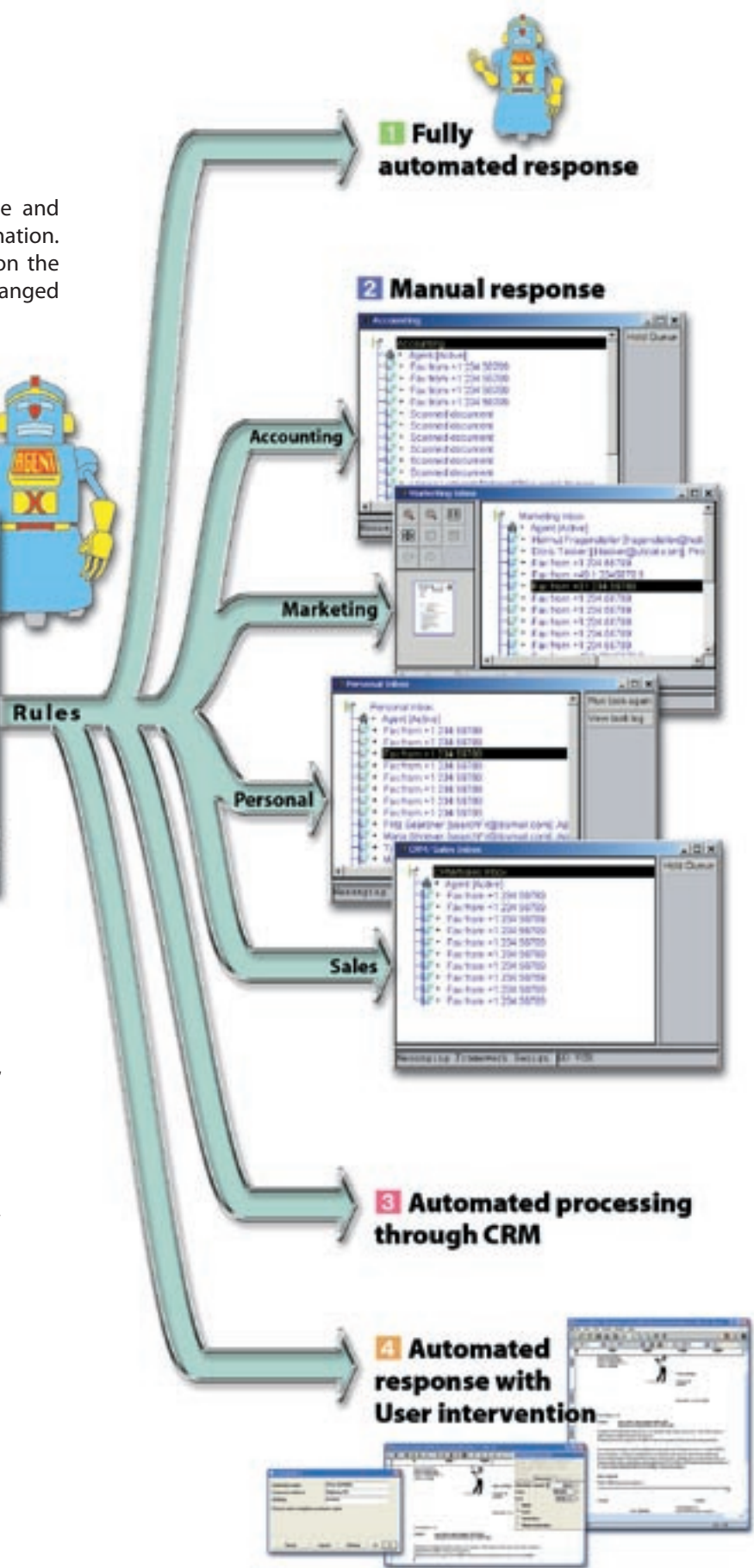
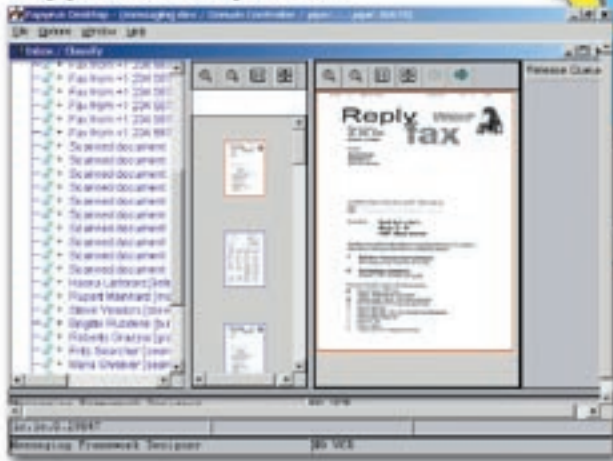
# Rule Driven Processing of Communication Tasks

Each customer response received through mail, email, fax or Web is defined as a task and can be processed:

- 1 Fully automated
- 2 Fully manual
- 3 CRM based or
- 4 Automated with user intervention

The classification process has selected the task type and rules are used to route the task to its processing destination. Similar tasks can follow different routes depending on the department or subsidiary organization. Rules can be changed by an administrator.

## Papyrus Classify Inbox



**Papyrus Capture** as part of the **Campaign Manager** can be scaled to any size. Some installations capture more than 200,000 documents per day.

The communication processing is performed in **REAL-TIME** in a 24x7x52 environment. As many Windows, Linux or UNIX servers can be assigned for each queue as needed. There is no DB administration required to add new queues and the servers can be distributed across multiple locations. Users access the system through the **Papyrus Desktop** as a browser.

Multiple parallel servers make the system fault tolerant. Should a server drop out, it is simple to route it's queues to another server.

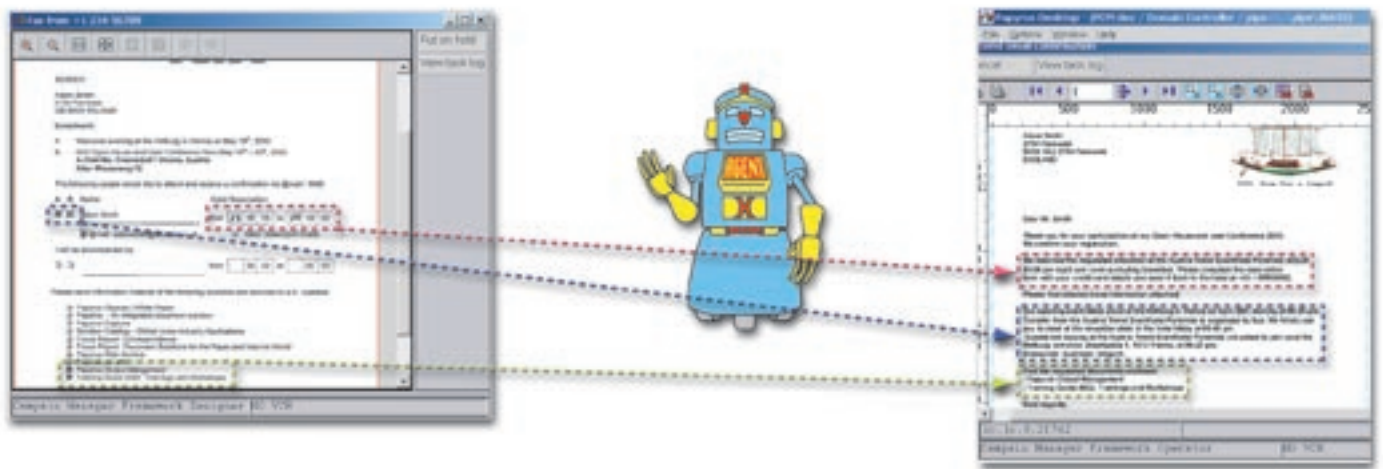
Personalization is not only required for the outgoing document but also for the incoming communication and the follow-on process. Each customer's response pattern is unique.

As always, not quantity is relevant but quality. If you lose only one hundred of your most valuable prospects or customers you might be losing a substantial percentage of your future revenue.

# A response is created ■ ■ ■ ■

## 1 Fully Automated

Due to the status information of each received communication task the agent analyzes the defined rules to perform the appropriate processing for this task.



Fax reply form was received with:

- selection of hotel and booking request
- selection of event date and length of stay
- selection of specific product information material

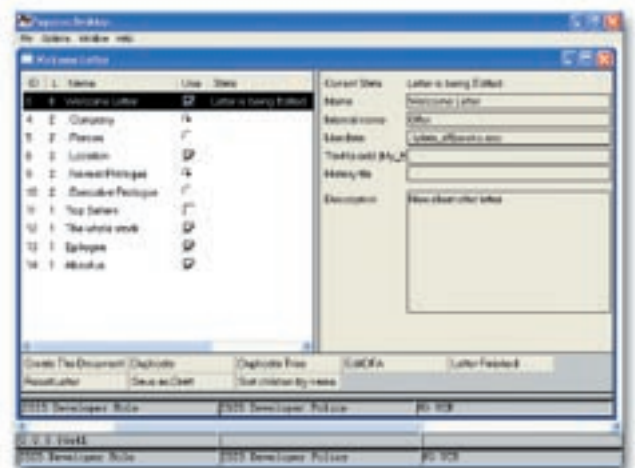
A response letter to the customer is automatically generated

- confirming hotel reservation
- confirming dates
- referencing the requested material enclosed

## 2 Manual Response

- ◆ A response classification automatically selects a letter task.
- ◆ The user is guided through selection and modification of the letter.
- ◆ The letter text is edited where authorized.
- ◆ Previewing the letter by the user.
- ◆ Approving or rejecting the letter by the approver.

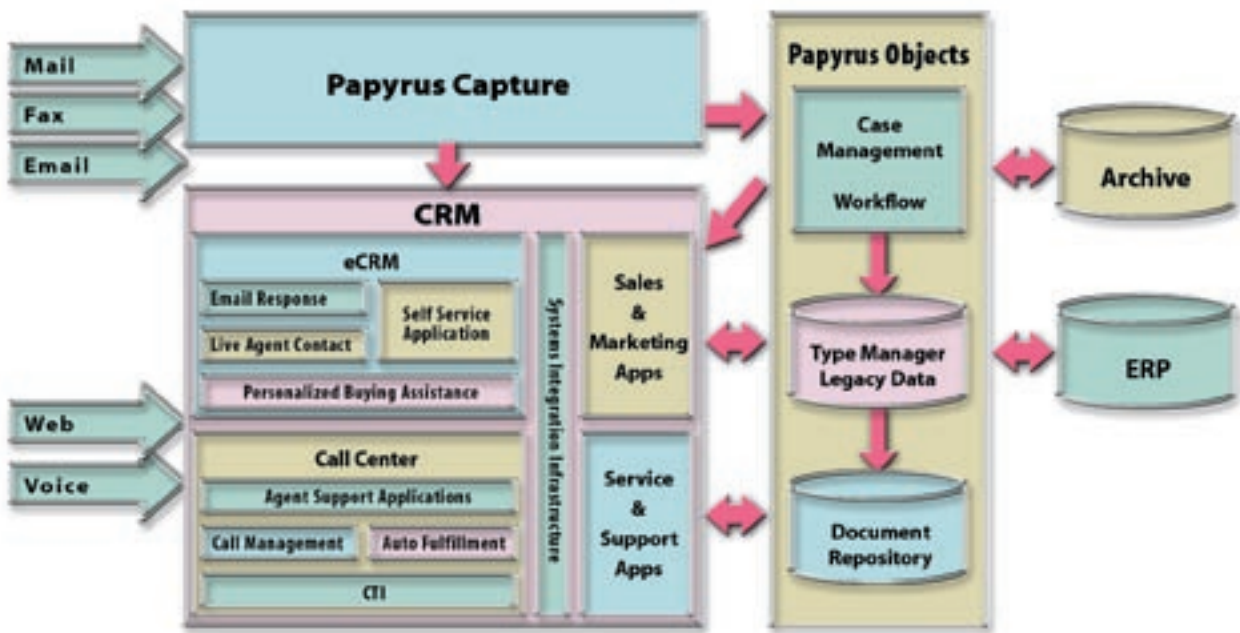
The user can select or deselect letter elements and distribution options. The letter was defined by the administrator to be assembled from a number of elements of different types. By using the parameters in the template the administrator has defined which changes the user is allowed to make. Rules as to which elements are exclusive are checked. Data fields, used as letter variables, have range definitions so that the user cannot type in wrong data. Other rules verify that the letter can only be produced when certain conditions apply.



Papyrus Desktop with check box letter application

### 3 Automated processing through CRM

The response information is passed to the CRM system, or the CRM process is handled by *Papyrus Objects*.



■ ■ ■ ■ each customer's response pattern is unique.

### 4 Automated response with user intervention

Papyrus generates an automated response and routes it to the user for further manual intervention.

#### Letter Preview and Edit

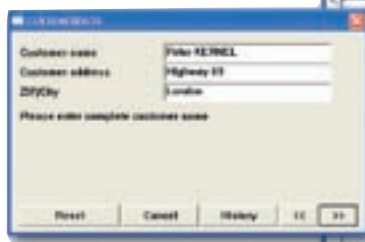
To actually create and preview the letter, the Papyrus Client is started as a Plug-In. The letter is previewed in perfect fidelity (WYSIWYG).

For editing text, the user opens the defined text prompts inside the letter. An easy to use text editor provides all commonly required text features.

For editing variables inside the letter, the Papyrus Client supports a prompting feature, which was defined in Papyrus Designer and used as a building block.



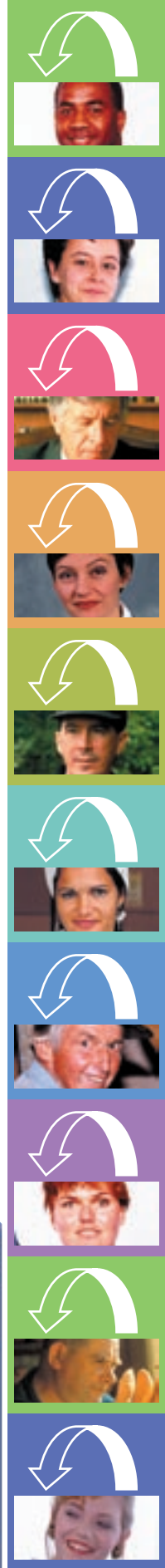
Papyrus Client with letter application



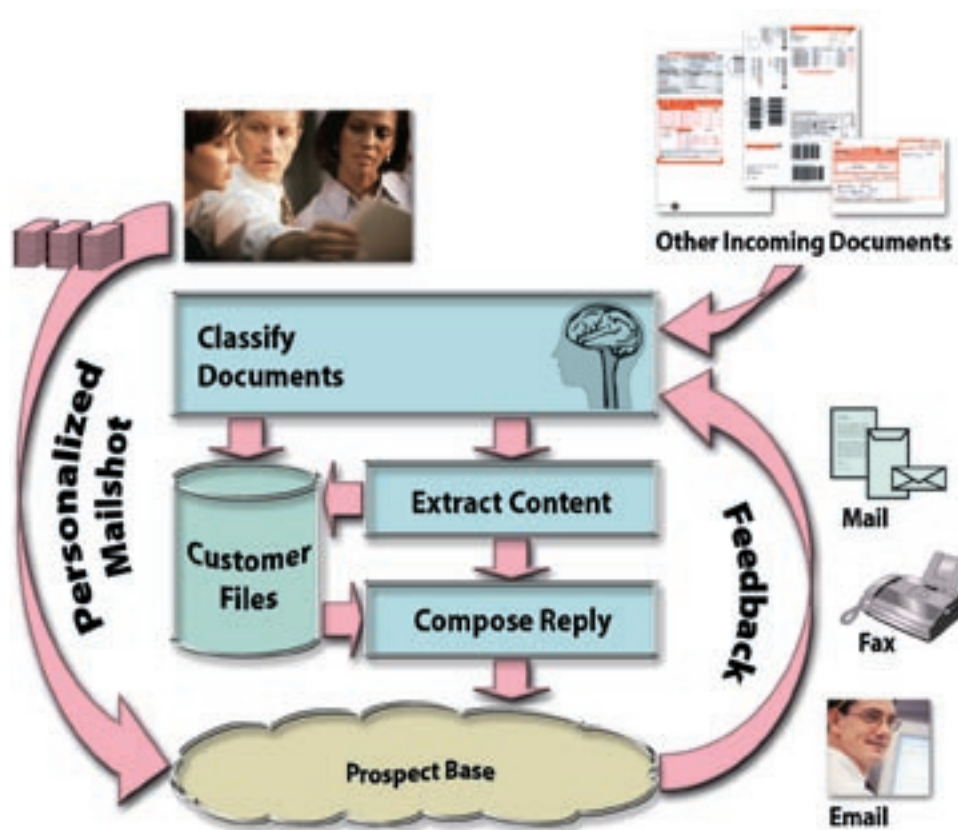
Papyrus Client prompt for data



Papyrus Client prompt for text editor



The **Papyrus Campaign Manager** is a **Framework** for developing CRM applications that improve customer interaction. It emphasizes hands-off operation with automatic classification and content extraction from incoming documents and emails; it automatically generates powerful personalized responses based on business rules.



Regardless if responses come in through email or on paper you can capture **relevant data**, and trigger the creation of **personalized correspondence**. There is the ability to capture data from unstructured forms. Papyrus uses Artificial Intelligence technology to group similarly structured documents together.

Merging correspondence into a workflow system in CRM is difficult, because correspondence is not process driven, but event driven. Customers contact businesses how and when they want. Papyrus can automate more than 80% of the effort to respond to correspondence and **reduces manpower** while **improving response time and quality**.

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