

# ISIS Papyrus Focus Report

## Billing Solutions across Industries and Platforms



### Orange, England

"We are focused on simplicity and clarity, and these will remain central features of the Orange bill," says James Hodgson of Orange, "With Papyrus, we can customize our bills very quickly and easily."

Page 4

### GPU, USA

4.3 Million international customers are invoiced using GPU's Bill Print Solution which is based on the Papyrus Document System and it's flexible integration of SAP data.

Page 6

### Neckermann, Germany

Germany's third largest mail order company uses Papyrus for all their billing and freight documents. Individual marketing messages and text amendments are printed based on the products ordered.

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### Telekom Austria

The Austrian national telecom provider generates phone bills incorporating main-frame data and data from SAP for all its customers. Papyrus WebArchive provides the link to the IXOS archiving system.

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### debitel AG, Germany

Successful outsourcing of telephone bills - debis produces high quality consolidated telephone bills for leading German mobile phone service provider debitel AG.

Page 13

### Belgacom, Belgium

Multiple telephone lines and services are combined into one consolidated phone bill. Summarized payments and the automatic generation of a payment slip add convenience for the customer.

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Corporations seek integrated solutions, not just products.

Your business documents are your primary points of contact with customers. They are critical to effective customer communication and must be generated in a highly personalized way in a variety of formats. Ideally, the document is developed once and used in the same electronic format for printing to different printer hardware and for the Web.

### The Web Creates New challenges

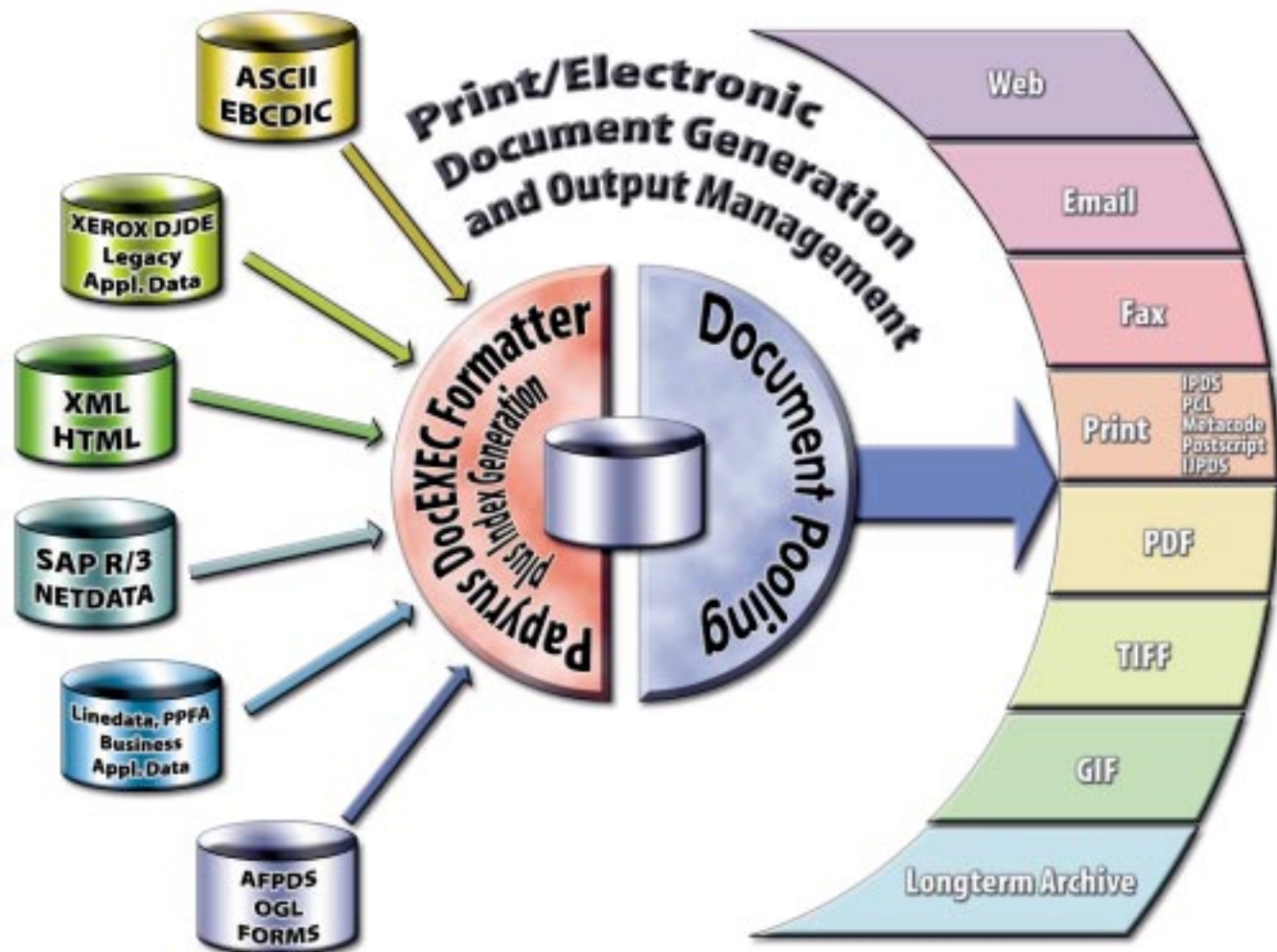
Today's solutions on the market assemble products of different vendors that are not integrated. They either propose to develop the document for each printer type and once more for Web presentation or they will recommend you to rewrite your business data application in a tagged based language format such as XML or HTML.

This results in expensive and time consuming coding efforts associated with the maintenance of multiple systems which will cause serious inconsistencies between the paper and the Web based document model. For printing, a high quality output is desirable, but electronic file formats such as HTML do not print well.

### On the Leading Edge

Using Papyrus, the previous does not apply. Papyrus can work directly with any type of business data in any format. By generating an architected electronic document format, the same document can be used for multi channel output. There is no requirement for extensive consulting services or many months of coding. Papyrus guarantees the perfect result for all output targets.

# Providing Total Solutions



Papyrus can leverage existing data directly from ERP systems or other sources and produce high quality document output in a variety of formats. Regenerating the document for each format is not required.

# Effective Customer Communication

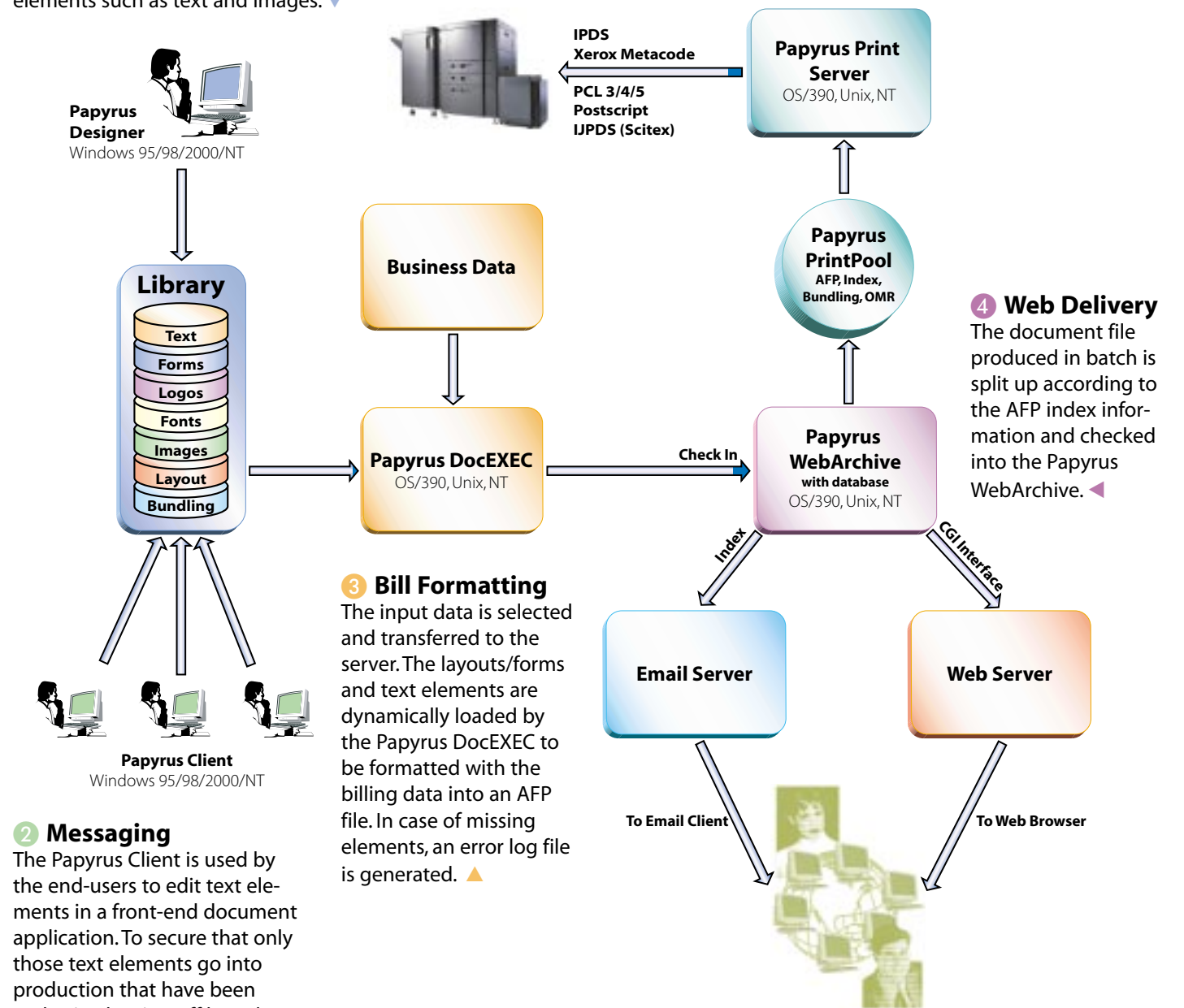
by creating a **Highly Personalized Bill** for Web Delivery and Automated Print

### 1 Document Development

All document resources are developed centrally with Papyrus Designer on a PC platform including 'Prompting' requests for the end-users if required. Prompts can be defined to control the layout, execute dynamic text-editing and new text generation and to call external elements such as text and images. ▼

### 7 Output Management

In case the customer does not pick up his bills via the Internet, they are checked out from the WebArchive after a few days and transferred to the Papyrus PrintPool. Each night a bundling and sorting run produces an AFP file with enveloping OMR markers, which is transferred to high-speed printing and mailing. ▼



### 3 Bill Formatting

The input data is selected and transferred to the server. The layouts/forms and text elements are dynamically loaded by the Papyrus DocEXEC to be formatted with the billing data into an AFP file. In case of missing elements, an error log file is generated. ▲

### 2 Messaging

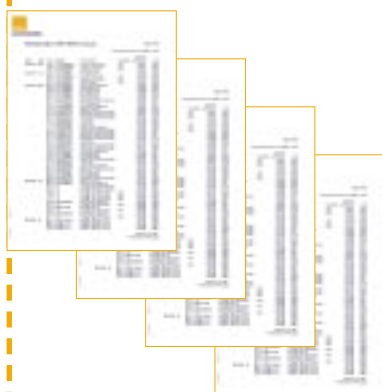
The Papyrus Client is used by the end-users to edit text elements in a front-end document application. To secure that only those text elements go into production that have been authorized, a sign off based on the 'four eye principle' can be implemented. All documents generated by the users are stored in a transfer area to be picked up by the application. ▲

### 5 Email Notification

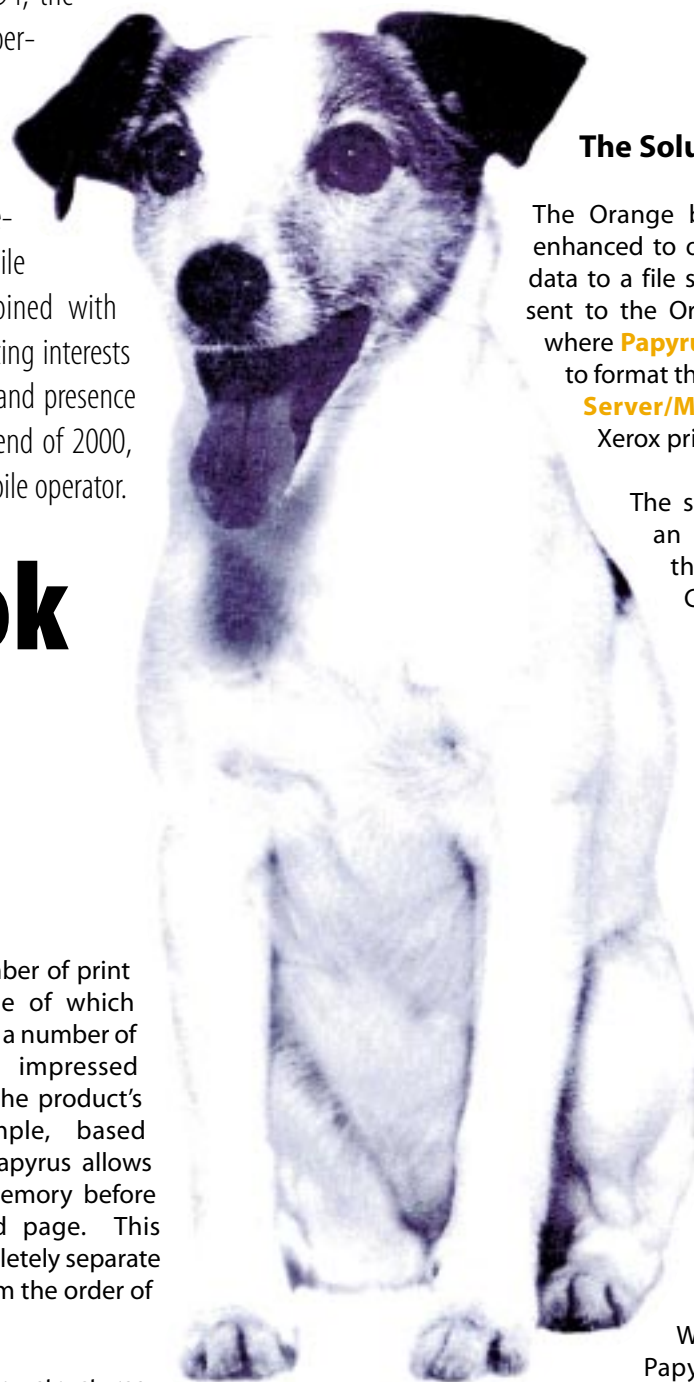
The customer is informed by an e-mail notification that his bills are available on the website. These e-mail notifications are sent at night and contain the hyperlink to the website. ▲

### 6 Internet Viewing

The user logs in through the corporate website where security and authorization is performed by the transaction server. The WebArchive interface generates an HTML page of available bills for this customer. Once the user selects bills from WebArchive, the documents are converted on the fly to PDF/GIF for viewing. ▲



Orange was launched in April 1994, the fourth mobile telephone network operator to enter the UK market. Their international presence was greatly enhanced in August 2000 when Orange was acquired by France Telecom, the majority of whose mobile interests were subsequently combined with those of Orange. Orange has operating interests in 20 countries worldwide and a brand presence in a further three countries. At the end of 2000, Orange was the third largest UK mobile operator.



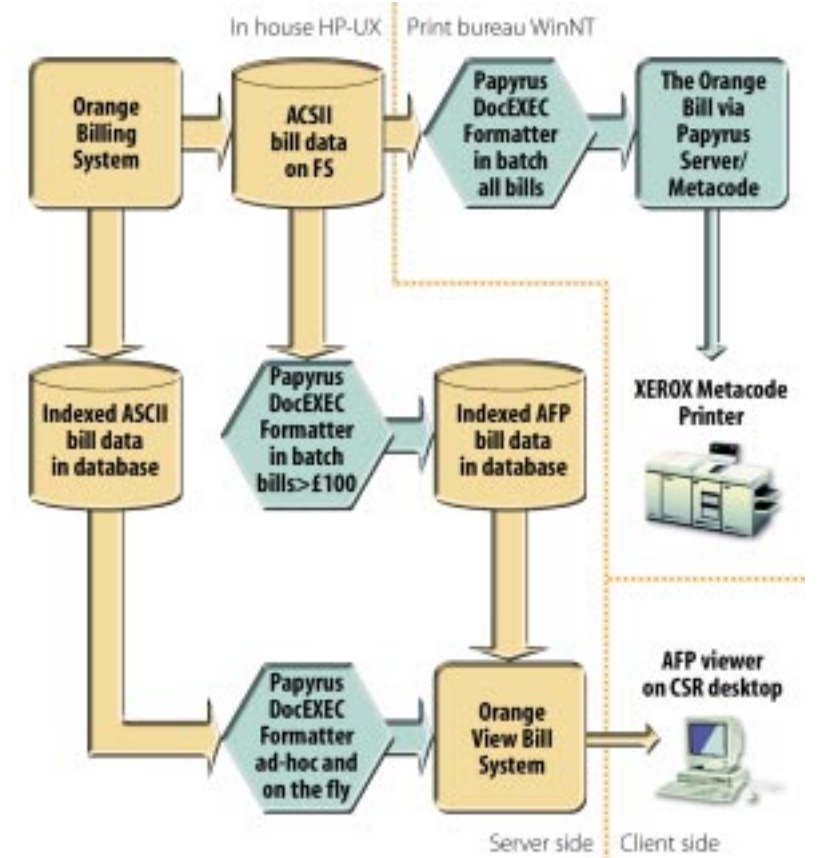
### The Solution

The Orange billing system was enhanced to output ASCII format data to a file system. This data is sent to the Orange print bureau, where **Papyrus DocEXEC** is used to format the bills, and **Papyrus Server/Metacode** to drive Xerox printers.

The solution also makes an electronic copy of the bill available to Customer Service Representatives (CSRs). During the bill run, the bill data is stored to an indexed database. When a CSR requests to see a particular bill, the data is drawn from this database and run through Papyrus DocEXEC "on demand" to produce an AFP document on the CSR's desktop. For larger bills Orange runs a DocEXEC process each night and stores the AFP files in the indexed database. The AFP file is then displayed by the CSR View Bill system when such bills are requested, instead of being produced on-the-fly.

With the implementation of the Papyrus system, Orange took the opportunity to redesign their bill to include features that were not possible with their old system. The new bill was printed in duplex, providing large cost savings. For those accounts with multiple subscribers or handsets, Papyrus gives the ability to include a breakdown of subscribers on the first page, allowing customers to quickly and easily analyse and split their bill between subscribers.

Since the Papyrus system was implemented in 1999, Orange has produced around 50 million bills, some as large as 8,000 pages. These large bills include a table of contents, which in conjunction with the previous improvement, allow corporate customers to reconcile their bills much easier.



# Giving a New Look to the Old Bill

## The Requirements

In 1999, Orange were looking to replace their existing bill formatting process, which was not flexible enough to support the company's rapid development. The system was resulting in long lead times on delivery of projects to support new product offerings, which was critically impacting Orange's need to respond to a fast-changing market place.

### Orange defined criteria for the new system, which included :

- The bill format should be independent of the billing system. The system should just output the required data items, and have no understanding of the formatting applied to that data to generate the bill.
- Orange would buy a formatting system to turn this data into the printed bill. The data could also be used for other Orange applications, as it would be easy to parse.
- Orange would own the format of the bill and maintain it in-house, therefore retaining control of development and change management. This would also allow them more freedom to select the print bureau they used.
- The ability to view the bill on a screen exactly as it would have been sent to the customer.

## Decision Criteria for Papyrus

Orange looked at a number of print formatting systems, one of which was Papyrus. There were a number of features Orange were impressed with, in particular that the product's architecture was simple, based around AFP and that Papyrus allows data to be read into memory before output on the printed page. This allowed Orange to completely separate the format of the bill from the order of the bill data.

In addition, the memory structures supported the hierarchy inherent to the data Orange wanted to display in their bill. A considerable advantage was that Papyrus supported multi-dimensional arrays, which fitted perfectly with their hierarchical data.

Finally, the **Papyrus Designer** development environment was very easy to use, with more than enough features, therefore it would be feasible to keep the development in-house, as specialist skills would not be required.



## The Future

With continued growth in the UK market, the volumes of bills produced by Orange will rise steadily. To that extent, Orange plan to increase their number of Papyrus DocEXEC licences to enable their bureau to print at multiple sites.

A major factor in providing outstanding customer service is the customer bill. *"We are focused on simplicity and clarity, and these will remain central features of the Orange bill as produced with Papyrus,"* says James Hodgson, Airtime Billing Systems Manager at Orange PCS Ltd (UK). *"Our Customer Relations Management are very interested in customising the bill and any marketing messages that appear on it depending on, say, a customer's address, patterns of usage, or other lifestyle details. With Papyrus we can customise our bills like this very quickly and easily,"* he adds.



# GPU Energy Utility Bill Processing

## Company Info

GPU Inc. is an international provider of energy-related infrastructure and services. Domestically, its three electric utility subsidiaries - doing business as GPU Energy - annually provide approximately 44 billion kilowatt-hours of electricity serving two million customers in Pennsylvania and New Jersey. GPU Advanced Resources, Inc. sells competitive retail energy and services in the Mid-Atlantic region. Altogether, GPU serves more than 4.3 million customers around the world.

## The Requirements

In conjunction with Y2K preparations, GPU Energy started a project to migrate business applications from mainframe processing to SAP R3 on the HP-UX operating system platform. Packaged SAP reports did not provide the flexibility, quality and print processing required for GPU to conduct business. Print software requirements included:

- Flexible print formatting including IPDS and PCL
- Dynamic Formatting including multiple languages and charts (pie, bar)
- Handling of SAP RDI (raw data interface)
- Integration with postal software processing and barcode support
- WYSIWYG design of applications including spell check
- AFP resource compatibility
- Highlight Color and Full Color support

## Decision Criteria for Papyrus

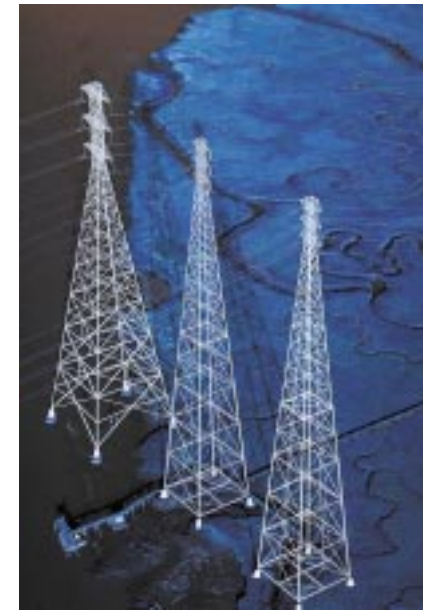
GPU selected Papyrus Document Solution based on ISIS' response to the requirements and rapid development capabilities. In a very short time, ISIS was able to quickly produce a sample Papyrus billing application using the sample SAP data and layout that GPU provided.

## The Solution

GPU's Bill Print solution uses Papyrus Designer and Papyrus DocEXEC. With Papyrus, GPU nightly processes regular bills for its three subsidiaries with volumes of 50,000 to 200,000 accounts and collective/ master/voucher processing of 10 to 100 bills, varying from 5 to 200 pages. Additional applications include letters with volumes of 100 to 30,000 per cycle and check generation with volumes of 25,000 monthly.

Papyrus Designer's WYSIWYG design capabilities enables rapid development and updating of new or changed bill formats. Features used include conditional processing to produce consolidated billing for multiple services and for the different subsidiaries, data-driven power usage comparison charts, and conditional notices and marketing messages.

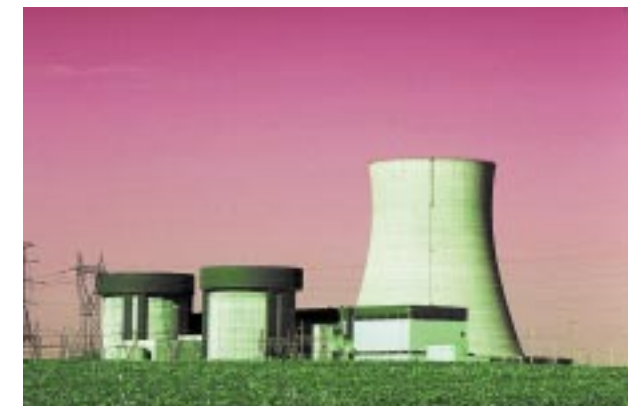
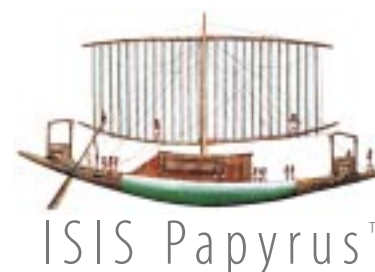
To start batch processing, SAP application servers generate RDI or plain text and print the data to remote queues. Each data type is printed to a unique queue. Then a series of UNIX scripts automate formatting and printing.



- The first script checks for the number of concurrent pool runs and launches the formatting procedure.
- The second script invokes Papyrus DocEXEC formatting for each pool request, creating an index file and log file that is passed to postal processing which adds the carrier route information.
- The third script checks that all post-processing is completed, merges the updated log information and runs the postal optimization to generate the final print order for maximum postal discounts. Then this print order is input to the Papyrus DocEXEC postprocessing application which imports the earlier pre-composed, indexed AFPDS documents in the correct order, adds the additional document information including carrier routing and barcodes, and produces the final AFPDS. This final AFPDS is then processed by the OCE print server and printed on the Pagestream 1000.

## Benefits

- How quickly GPU staff learned to use Papyrus Designer to develop applications
- How Papyrus handles the SAP RDI data file
- How easily and quickly GPU developers can make changes to applications
- Ease of integration with postal processing and archive software



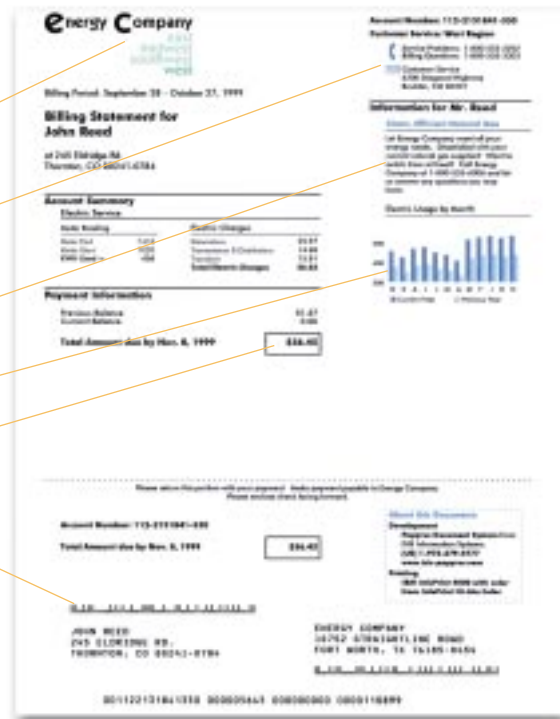
Use virtual document strategies and on-the-fly document assembly with **Papyrus** to create documents which are customized down to the sentence for each individual recipient.

# Strengthen Customer Relationships with Highly Individualized 1:1 Business Communication

## A Electricity Bill

Customer has only electricity service.

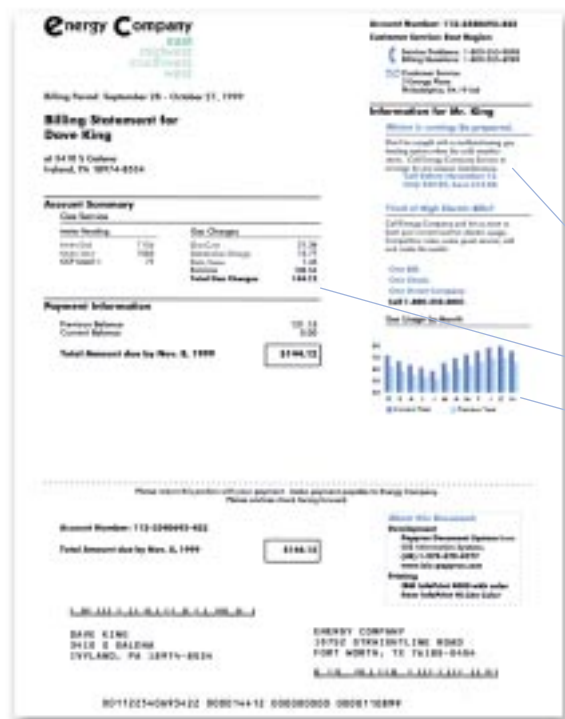
- Logos are dynamically imported as variable information and printed in digital spot color.
- Contact information is clearly highlighted to promote a 1:1 relationship.
- Most effective individual marketing messages to inform the customer of special programs.
- Data driven bar charts show usage history.
- Dynamic tables showing the payment due.
- A barcode is added to ensure accurate delivery and to receive postal discounts.



## B Gas Bill

Customer has only gas service.

- Dynamic composition allows for personalized marketing text.
- Dynamic tables show payment due.
- Data driven charts show gas usage history.



## C Consolidated Electricity and Gas Bill

Customer has both electricity and gas service.

- Powerful design capabilities for a personalized professional presentation.
- Targeted 1:1 messaging.
- Consolidated bills are attractive, easy to follow and cost effective.
- Data driven charts show usage history of electricity and gas which provides instant understanding of the displayed data.

## D New Customer Bill

First bill for new customer.

- No usage history applies. Therefore a welcome letter is printed. Carefully worded, strategically placed messages are used as a part of a communication strategy that has effective, immediate impact on customer behavior.



## E Payment Overdue

Reminder to pay the bill.

- Highlighting the amount due, due date and indication that payment is overdue draws the reader's attention to the important information.



## QUICK FACTS

Development time: 1 week  
 Formatting on OS/390, UNIX, NT, Linux  
 Printing in color on IPDS, IJPS, PS, PCL, Metacode

Integrated Output Management  
 Viewing in PDF, GIF and AFP format  
 Archiving in AFP, PDF and TIFF

**N**eckermann was founded in 1950 and is the third largest mail order company in Germany today. A 1500 page bi-annual catalog is the primary vehicle to offer products to 6.5 million households. 20 million shipments comprising 40 million items are shipped every year generating DM 4.6 billion in revenue for 1999. The Neckermann group employs close to 10,000 people.



### The Document Application

A single document definition in Papyrus generates bills for several subsidiaries:

- Neckermann Versand
- Happy Size Company
- KarstadtSport.com
- Karstadt.de
- affiliated wholesale companies

The invoice is highly personalized and individualized to meet the requirements of each company.

#### Main bill of ordered items:

- Different header with different logo for each subsidiary
- Dynamic table size depending on number of items purchased
- Dynamic messages; the number of messages depends on the type of items purchased
- Payment slip
- Payment stub with address information, barcode and page number

#### Backside of page 1:

- Personal letter to the customer with marketing information
- Terms and conditions of sale

#### Page 2:

- Dynamic page break event if all the ordered items do not fit on one page of the invoice
- Reprinting of table header and subtotal information
- Payment information for total amount

#### Form for return shipment with return address and barcode:

- Barcode for return shipment
- Dynamic table with all shipped products
- Several sizes and rotations of logical pages on physical pages

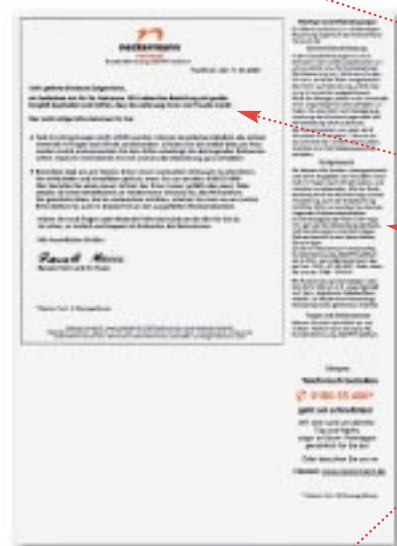
#### Backside of return form:

- Static form to fill in the reasons for returning the goods
- Order form for new purchase

Both are static overlays - no formatting required.

#### Additionally available:

- Credit card invoice
- Bank draft



1



2



3



4

The same Papyrus document format definition also generates the individual freight letters in which additional data is included in the remote warehouse locations:

- 1 Delivery copy for the customer
- 2 Copy for the shipping company
- 3 Copy for warehouse
- 4 Backside of warehouse copy - static form for manual data insertion



# Neckermann machts möglich... mit Papyrus!

Neckermann makes it possible... with Papyrus!

### How they did it

The document framework elements and layouts are developed centrally with Papyrus Designer on WinNT. They are stored in a central library on OS/390.

#### Scenario 1

Papyrus DocEXEC generates the electronic bill in all its variations on OS/390 from EBCDIC data. The electronic bill is either sent to the warehouse or printed centrally on OS/390 attached Xerox/Metacode printers with one spot color. Some printing is being outsourced to a service provider.

#### Scenario 2

The OS/390 input data is sent directly to the remote warehouse where it is merged with additional data (ANSI-Codepage). This is required to control the shipping directly from the warehouse. The new input data file is used by Papyrus DocEXEC on WinNT to generate all documents using the same document definition as on OS/390. The printing is done on a Xerox IPDS cut sheet printer with stitching and control of multiple paper bins.

### Highlights

The powerful integrated graphical user interface (data, logic, design, resources) of Papyrus Designer made it possible that the design of this complex bill was easy.

Papyrus formatted documents are platform independent. All generated resources are binary compatible between platforms. The same document resources are used on OS/390 and on Windows NT without further effort by the developer.

Papyrus formatted documents are printer format independent. The same document format is transparently printed on Xerox Metacode and on IPDS printers.

The very powerful codepage and data format support of Papyrus fulfilled the needs for central and remote production.



# Electronic Communication Meets the Printed Document

Not so long ago it was a privilege to have one telephone per household. Today, in western countries, many households have several phone lines or phone types which they use. The market for cellular phones and pagers is booming as never before.

This leads to an interesting paradox, where companies specializing in electronic communication depend on high quality printed matter to perform their business.

Even though this may sound incredible, most telecommunication companies would not be able to invoice the majority of their customers any other way. Additionally, telecom companies are facing government deregulation of telecommunication services. It is the new competition which now causes these providers to look for better ways to serve and market to their customers. The monthly, or other types of regular invoices, are such marketing means.

## The Requirements

- Fast and easy graphical development of the bill
- Formatting in high volumes on a variety of platforms
- Merging of data files into one document
- Use any kind of data file (Edifact, TIMM, ASCII, XML..) without data tagging
- Merging conditionally marketing messages into the body of the invoice
- High speed formatting...
- Viewing, reprinting, faxing and e-mailing the bills



- Internet bill presentation
- The customer has a choice to either receive the printed bill or receive it electronically via the Internet
- Better presentation of bill information by using dynamic charts and color

ISIS has implemented the Papyrus Document System for bill production and presentation at many large telecom providers worldwide. **AMS American Management System** has chosen Papyrus as their standard document system for Tapestry. Bill applications have successfully been implemented for billing systems such as LHS at **Maxis** in Malaysia or Keenan at **Telephonica del Peru** using data formats such as EDIFACT or TIMM. Telcos like **SwissCom** are producing over 200 million pages a year on an OS/390 mainframe, **Mannesmann Anchor** in Germany using HP/UX, German **DeTe Mobile** DEC Alpha and **Belgacom** WinNT. Many of them are using very sophisticated layouting functions with conditional marketing messages, charts, color, consolidation of all services in one bill, table of contents, 1 of N page numbering and certainly they all require national language support.

## Key Decision Criteria for Papyrus

- Fast and powerful graphical development of bill application on a PC platform
- One time development for all output targets including the Internet
- Very flexible data interface, no data tagging!
- No coding required, powerful visual programming is provided
- Many different dynamic chart types and color options
- Bills are generated in a printer and platform independent electronic format
- Choice of 11 platforms from mainframe to NT for formatting
- Powerful national language and codepage support
- Automatic generation of document index by DocEXEC
- Perfect viewing and reprinting, faxing or e-mailing of bill covers customer care requirements
- Print transparently to IPDS, Xerox Metacode, PCL, PS and Scitex IJPDS
- Control fields, XML and the printable document are generated at the same time
- Companies can provide an Internet based service where customers can see their bills and statements as XML data content or exactly as they were printed using a browser in PDF, GIF or AFP format

## The Solution

- Development of all document types with the **Papyrus Designer Suite** of products on WinNT/95/98/2000
- High volume formatting of documents with **Papyrus DocEXEC** on OS/390, SUN Solaris, HP/UX, DEC Alpha, AIX, SCO UNIX, NT and OS/2
- Printing can be done using **Papyrus Server** or any other AFP compatible print service to IPDS, PCL, PS, Xerox Metacode, Scitex IJPDS
- Internet based Print/Job and Spool Management is provided by **Papyrus WebControl**
- Documents can be stored with index in the **Papyrus Printpool** and **Papyrus WebArchive** for reprinting, e-mailing, faxing and Internet presentation in PDF, GIF and AFP format
- An XML interface offers linking to other archiving systems

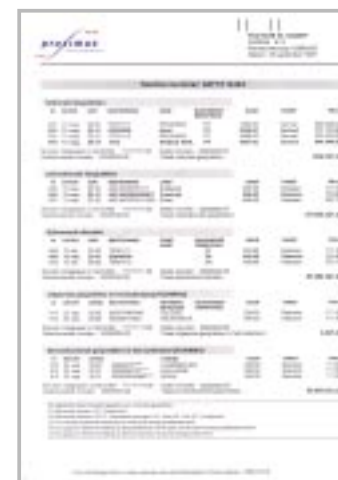
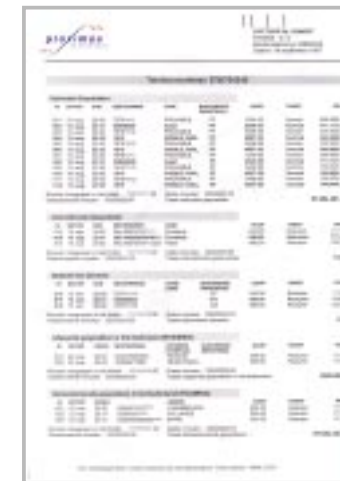
## Summary

The **Papyrus Document System** is the most integrated solution for state of the art telecom document design and printing.

# BELGACOM and BELGACOM MOBILE

## Telephone bills for multiple lines and services

- ★ Consolidated invoices combine all telephone services
- ★ On the first page, a dynamic box summarizes all payments. The amount due is shown on an attached payment slip for electronic payment transfer
- ★ On subsequent pages, a complex table structure is used to present the detailed information of calls for every phone line
- ★ Documents are sorted by number of pages to support different envelope sizes
- ★ To accommodate post processing equipment, a single formatting run produces documents last page first
- ★ Formatting speed is up to 400,000 pages per hour on a single Pentium PC running Windows NT
- ★ Depending on the number of pages per document, the application is printed on an IBM 3900 continuous forms printer or on a Xerox cutsheet printer



## QUICK FACTS

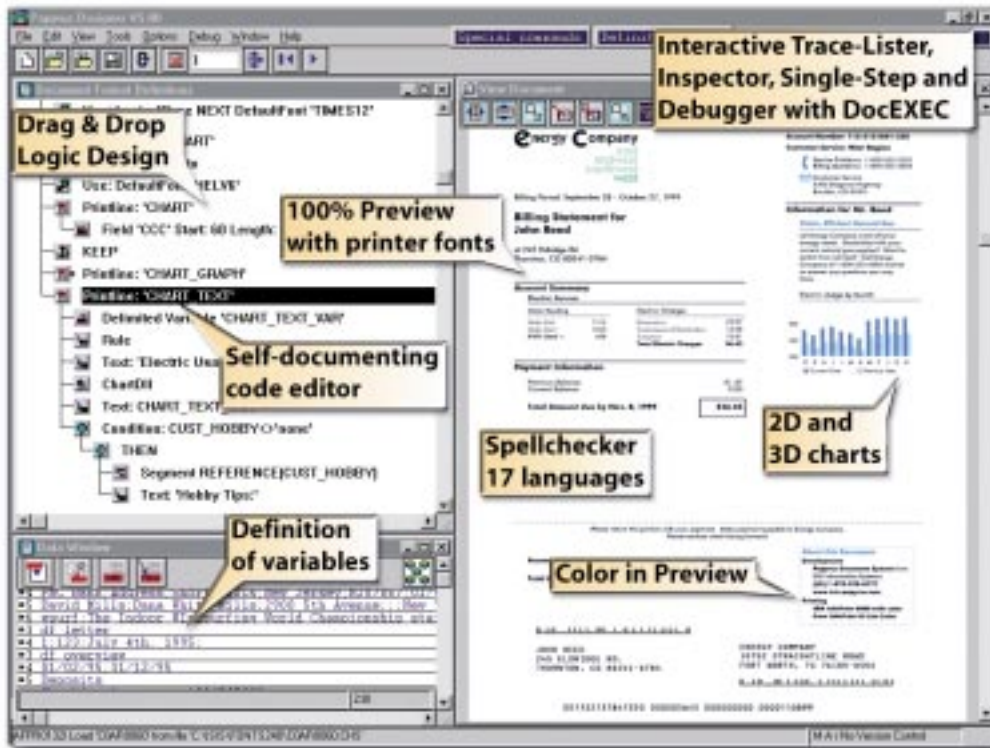
Location: Brussels, Belgium  
 Phone lines: 5 million  
 Mobile phone customers: 3.3 million  
 Internet clients: 1.6 million  
 Revenue: 1.4 billion US\$  
 Employees: 22,700

## Billing References

- Telekom Austria Austria
- Belgacom/Belgacom Mobile Belgium
- Northern Telephone Canada
- Postens Mailbuuro Denmark
- debitel Germany
- DeTe Mobil Germany
- Mannesmann Arcor Germany
- Neckermann Germany
- Quelle AG Germany
- Stadtwerke Kiel Germany
- Stadtwerke Wuppertal Germany
- Vodafone Germany
- BEZEK Israel
- Israeli Electric Company Israel
- Edisontel Italy
- PMS Italy
- Maxis Malaysia
- Telephonica del Peru Peru
- Smart Communications Philippines
- Polcomtel Poland
- Singapore Telecom Singapore
- Gas Natural Spain
- Jazz Telecom Spain
- Swisscom Switzerland
- Far Eas Tone Taiwan
- Advanced Info Service Public Co. Ltd Thailand
- CAT Thailand
- Samart Corporation Thailand
- Thai Telephone & Telecommunications Thailand
- Telecomasia Thailand
- Total Access Communication Thailand
- British Telecom United Kingdom
- MCI Worldcom United Kingdom
- Orange United Kingdom
- AMS American Management System USA
- Bell South USA
- Connex USA
- GPU USA
- Keyspan USA

# From the Idea to the Output

Develop Highly Targeted One-To-One Business Documents within Days.



Papyrus Designer: Document layout, data and logic definition on one screen

## Papyrus Designer Suite

### Document Design: integrated, precise, rich functionality

- ★ Document design is graphical and fully integrated
- ★ Highest presentation accuracy. 100% WYSIWYG. Dot accurate
- ★ Embedded formatting engine enables immediate viewing of all document pages during design
- ★ Drag and drop document elements
- ★ Visual programming using logic tree. No coding required
- ★ Powerful cross referencing between data, logic and document layout
- ★ Self documenting
- ★ Very complex document logic definition possible due to programming language support
- ★ Work with the real data, logic, print resources and document on screen
- ★ Use any Adobe, TrueType, AFP rasterfonts in 240, 300 or 600 dpi or AFP outline fonts
- ★ Generate data driven full color charts based on the input data

### Document Formatting: high speed, efficient, powerful

- ★ Use any data type, control structure and sequence (channel codes, DJDE, SAP, <TAGs>)
- ★ Available on OS/390, AIX, Sun, HP/UX, DEC Alpha, Win95/98/2000/NT, OS/2
- ★ Text and page formatter
- ★ Dynamic and scalable TIFF to IOCA conversion
- ★ List and log files
- ★ Substitution tables and upper/lower case conversion
- ★ Text and table formatting with right, left, center, decimal and justify alignment
- ★ Dynamically inverted or shaded text fields and areas
- ★ Document colors can change with data variables
- ★ Print variable text in any angle
- ★ Define any number and size of logical pages for one physical page
- ★ Decimal positioning for columns
- ★ One formatter run produces '1 of n' page numbering and OMR controls
- ★ Dynamic chart graphs from variable data. 2D and 3D charts in full color.
- ★ Generate document indexes for multiple output files (i.e. ACIF, ...)

## ISIS Locations

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