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ePages 5
White Paper



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1. Hosted Shops for Small & Medium-Sized Enterprises

Many medium-sized enterprises (SMEs) had painful experiences when they first ventured into the world of online commerce. Back then, there were few established standards, so many of these companies developed internal, proprietary solutions. As their requirements for e-commerce applications became more complex, two things became apparent: internal solutions are often error-prone and they also require a high level of maintenance. For this reason, standard e-commerce products are becoming increasingly popular. The advantages are obvious: quick implementation and low total cost of ownership. Shop owners profit from the newest technology and can use standard functionality extensions to enhance their shops.

Another trend of the last few years: companies are now shying away from the high initial investment in hardware and software that e-commerce often requires. Instead, they are looking for complete packages on a leased basis. Service providers that offer bundled shop systems with tiered performance classes, while leasing out the hardware and technical infrastructure, have a clear competitive advantage.

ePages 5 comprises two product lines:

- ▶ ePages 5 Hosting - for use on hosting platforms. Internet service providers can run a platform with an unlimited number of shops. Hosting providers perform technical administration, and merchants administer their shops using an intuitively designed back office, accessed through a standard internet browser.
- ▶ ePages 5 Merchant - for complex shops that are integrated in other corporate applications. System Integrators and Web Agencies tailor ePages shops to the specific requirements of their customers, and integrate them into existing applications. To ensure a professional implementation, ePages works with experienced partners. ePages 5 Merchant comes in four versions, depending upon your requirements: Merchant Starter, Merchant Pro, Merchant Enterprise, and Merchant Corporate. The versions all have various levels of functionality, and are all hosting-ready. A merchant shop can either be run on a shared server environment, or on a dedicated server.

Both ePages product lines are based on the same platform. The application is modular can be upgraded as requirements grow, both with new functionality, and in technical performance. Internet service providers can support their customers during every stage of e-commerce growth: from a first-time Web shop to a highly-integrated corporate solution.

This White Paper Describes:

- ▶ Target groups
- ▶ Main product features
- ▶ Functions
- ▶ Technology and architecture
- ▶ Components and system requirements

...✦ *For detailed information about ePages underlying technology, please read our Technical White Paper. There you will find more information about hardware requirements.*

**Standard Software –
the Current Trend**

Leasing Licenses Preferred

ePages 5 for Mass Hosting

ePages 5 Single License

Seamless Update Path

2. Target Customers and Business Models

2.1 Telecommunications Companies, Internet Service Providers, Solution Hosting Providers

Telecommunications companies run e-business shops with ePages 5 Hosting. The telecommunications company provides technical infrastructure together with the online shop for a low leasing fee.

Clear Responsibilities

ePages 5 Hosting is deployed in mass hosting platforms, providing shops that are especially attractive to small and mid-sized companies. Merchants administer and market their shops, whilst the hosting provider handles the technical administration.

Solution Hosting Providers run ePages 5 and administer the software on dedicated servers or in a shared-server environment. This model is especially appropriate for complex shops that are connected to third-party systems, such as ERP or logistics applications.

Made-to-Order Online Shops

ePages offers Internet service providers (ISPs) a platform for addressing various target groups, especially small companies and mid-sized enterprises. ISPs use ePages 5 Hosting to define shops with various levels of functionality—from simple Web site building blocks, catalogs and small shops with shopping basket functions, through to highly integrated shops with eBay connectors and numerous online marketing features. The platform can be quickly yet comprehensively extended with new functions. ePages shops are always state-of-the-art, allowing ISPs to secure their competitive edge in the market over the long-term.

You can cover various target groups: from e-commerce beginners with simple requirements, right through to experienced e-business professionals with complex performance and integration requirements.

ePages 5 has very modest hardware requirements, meets high security standards and is simple and quick to administer—even when rolled-out internationally.

... For Internet service providers, the following chapters are especially interesting:

3. Product Features

- 3.1 *Efficiently and Securely Manage the Platform*
- 3.2 *Provide a Wide Range of Shop Types*
- 3.3 *Multiple Languages and Currencies for the International Market*
- 3.4 *Create and Administer the Shop Online*
- 3.7 *Design without HTML Knowledge*
- 3.8 *Integrate and Extend via Standard Interfaces*

4. Using ePages 5

- 4.1 *How Internet Service Providers Use ePages 5*
- 4.3 *How Customers Shop – the Storefront*

5. Technology, Security, Scalability and Extension

2.2 Merchants

Whether the merchant is selling to corporate clients or end customers, ePages 5 addresses all current B2B and B2C business models.

A Quick Start to Online Business

ePages 5 lets merchants enter the world of online business quickly, with minimal risk. Thanks to modern templates and set-up wizards, a shop can be created in just a few steps. The administration of the shop is performed through a standard internet browser. ePages 5 offers an especially user-friendly administration interface that minimizes the effort required to carry out day-to-day tasks.

E-marketing features offer merchants the opportunity to acquire and retain customers online. ePages 5 supports multi-channel sales, enabling products to be exported to multiple sales channels such as eBay and product search engines (Kelkoo, Pangora, Google, etc.)

Professional Marketing and Multi-Channel Sales

Numerous hosting providers run ePages software in their data centers. Merchants that take advantage of hosting services benefit in a multitude of ways: they can quickly enter the world of online business without having to worry about technical infrastructure, and minimize their financial and technological risk by keeping the initial investment in licenses and hardware as low as possible.

Minimal Risk

❖ For merchants, the following chapters are especially interesting:

3. Product Features

- 3.3 *Multiple Languages and Currencies for the International Market*
- 3.5 *User-Friendly Administration and Simple Data Maintenance*
- 3.6 *Intuitive Order Process for a Positive Buying Experience*
- 3.7 *Design without HTML Knowledge*
- 3.9 *ePages 5 Drives Marketing and Sales*
- 3.10 *Manage Customers and Customer Groups*

4. Using ePages 5

- 4.2 *How a Merchant Administers the Shop – the Back Office*
- 4.3 *How Customers Shop – the Storefront*

5. Technology, Security, Scalability and Extension

2.3 System Integrators and Web Agencies

Flexible Standard Software Assures Quick Implementation

A typical e-commerce project will entail planning the shop, technical implementation, design modification, integration into existing IT-systems, and much more. For complex projects, professional support is essential: System Integrators and Web Agencies assist merchants during the implementation of an online shop, and later during the operation and extension of the site. With ePages 5 Merchant, these service providers have access to a standard solution that allows fast and affordable implementation.

Third-Party System Integration

ePages 5 Merchant integrates with existing systems via standard interfaces, such as Enterprise Resource Planning (ERP), logistics, and online payment systems. ePages also supports data transfer via Web Services (SOAP/XML).

System Expansion

If merchants require specialized functions, these can be added through the inclusions of modules known as “Cartridges”. ePages develops cartridges and offers partners a Cartridge Development Tool. In addition, thanks to a simple and user-friendly template structure, design modifications can be quickly and easily added to the store, without the requirement for in-depth technical understanding of the system.

....✦ *For system integrators and web agencies, the following chapters are especially interesting:*

3. Product Features

- 3.3 *Multiple Languages and Currencies for the International Market*
- 3.5 *User-Friendly Administration and Simple Data Maintenance*
- 3.6 *Intuitive Order Process for a Positive Buying Experience*
- 3.7 *Design without HTML Knowledge*
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4. Using ePages 5

- 4.2 *How a Merchant Administers the Shop – the Back Office*
- 4.3 *How Customers Shop – the Storefront*

5. Technology, Security, Scalability and Extension

3. Product Features

3.1 Efficiently and Securely Manage the Platform

Internet service providers are able to organize their ePages hosting platform through a well structured permissions system. The technical administrator can access the entire platform, and can assign tasks to so-called business administrators. Business administrators, usually product managers, can then define and launch shop types, and generate statistics and sales reports to measure the success of the packages they have created. Each admin area is login and password protected, enabling ISPs to roll-out a secure permission-based e-commerce platform. Since responsibilities are shared between technical employees and product managers, the platform is cost effective and efficient in both deployment and management.

Multi-Level Administration through Permissions-Based Management System

ePages 5 supports Secure Socket Layer 3.0. Transactions and exchanges between the client and the server are secure, and data transferred during the order process cannot be interfered with or read by unauthorized third-parties. ePages 5 meets the requirements set out under the “Trusted Shop” code of practice, which emphasizes the importance of security to protect customer’s private data.

High Security Standards

3.2 Provide a Wide Range of Shop Types

Thanks to the modular architecture of ePages 5, Internet service providers can create an extremely flexible and extensive product offering. The possibilities range from a simple Web presence without shopping functions, websites with catalog pages, basic shops, all the way through to shops with dedicated e-marketing features and eBay connections. Upgrading between the various levels is easy, since all shop types are based upon the same ePages platform. An ISP can add functions with just a few mouse clicks, allowing a wide variety of target groups to be addressed. Internet service providers are therefore able to support their customers during every stage of their growth, and retain them in the longer term.

Flexible – from a Basic Shop to a Corporate Solution

3.3 Multiple Languages and Currencies for the International Market

With ePages 5, merchants can display product prices in multiple currencies. Each currency in the ePages system carries a currency symbol and an ISO code, that together enable communication with leading online payment systems.

ISO Codes for Currencies

In ePages 5, multiple languages are available in the back office administration area as well as in the storefront. For each language, an ISO code is assigned automatically by the software. ePages 5 supports Latin, Cyrillic, Arabic, Japanese, and Chinese characters (Unicode). In connection with the multi currency functionality, merchants can use these character sets to promote and sell products to an international market. Internet service providers can therefore market their platform internationally, and test markets without setting up separate infrastructure for each new country.

Unicode Support and ISO Codes for Languages

3.4 Create and Administer the Shop Online

ePages 5 is a pure, online system. This means that merchants can create and administer their shops from anywhere in the world. The only pre-requisite is a computer with an Internet browser and an Internet connection. The user can also open a context-sensitive online help system from any area of the Back Office, meaning there’s no need to refer to a bulky paper manual.

Simple to Update

Another distinct advantage for Internet service providers is that the platform can be easily updated to the newest version – complex and expensive update mailings or CD shipments are not necessary. New updates and features applied to the platform are available immediately to all merchants, provided their shop type includes the newly implemented features. No additional effort is required from the merchant to carry out these updates.

Invaluable Market Data

Service providers have an overview of the entire system, and therefore have access to invaluable market data. By analyzing the data from the service provider’s administration area, Internet service providers are able to measure the success of each shop type, follow trends in the market, and improve their offerings accordingly to maximize revenues and customer satisfaction.

3.5 User-Friendly Administration and Simple Data Maintenance

The merchant’s administration area, or Back Office, is extremely user-friendly and intuitive to use. It contains seven modules: “Orders”, “Customers”, “Products”, and “Categories” are used for managing an online business on a daily basis; “Design” and “Settings” allow the merchant to configure the shop, whilst the “Marketing” module offers a variety of powerful tools for marketing and promoting products.

Intuitive Navigation

To make maintenance of the shop as easy as possible, ePages 5 contains three special navigation tools:

- ▶ a History display, with links to the most recently visited areas
- ▶ an Object tray (a clipboard, where various objects can be stored such as customers, products, orders, categories, and free-form content)
- ▶ a Favorites list, where the merchant can add his or her own most regularly visited back office pages

In addition to these tools, usability is further enhanced through the inclusion of a search function, sorting features, and batch processing of data (e.g. deleting products, exporting orders).

3.6 Intuitive Order Process for a Positive Buying Experience

Buying products from an ePages shop is both simple and intuitive, ensuring that merchants convert the highest possible number of browsers into buyers. A breadcrumb trail allows customers to see how they have navigated the site, and to easily revisit pages if they want to review a particular item or catalog.

...✦ Back Office functions are described in detail in chapter 4.2. A feature list is available from our Web site at www.epages.com.

Basket	
1 Eureka El...	339.95 €
Postal Service	0.00 €
Grand total	339.95 €
→ Go to Basket	

Every page of an ePages 5 shop contains a link to the shopping basket, so the customer can view the basket in detail at any time. A summary of the basket contents is available on every page so the customer is always aware of how many products are in the basket, and how much their purchases are going to cost.

Customers that are researching products can save multiple shopping lists and later convert these to shopping baskets. During the order, customers can see “best practice” e-commerce characteristics. For example, links to the terms and conditions and the returns policy of the merchant are available on every page of the shop. These features are essential in engendering trust in the customer, and customers that feel confident in the order process, and the security and credibility of the shop, are more likely to convert from visitors to buyers.

Shopping Lists and Shopping Baskets

3.7 Design without HTML Knowledge

With ePages 5, the shop display, or “Storefront”, can be customized by a merchant with no knowledge of HTML. Three store layouts are included with the standard software. The merchant can update these templates by selecting one of the various color sets, changing fonts and font sizes, creating new buttons, and uploading background images. The merchant can also arrange the navigation and information elements of the store as he or she pleases, with the basket summary on the left, language selection on the bottom right, and menu buttons along the top of the screen, for example. In just a few mouse clicks, a completely unique shop is created.

To supplement the product and catalog pages of the store with extra information, the merchant is able to create freely-designed Web pages. This means that the merchant is not limited to one single template layout for product and catalog pages. ePages 5 contains a simple, user-friendly editor that allows the merchant to fill pages with content, and to format these using simple, familiar word-processing features. The editor converts these pages into HTML files that can be read by any Internet browser.

WYSIWYG - “What-You-See-Is-What-You-Get” Editor

Internet service providers can promote these features to attract merchants that have little programming knowledge, and are time constrained in creating their shops.

The template database in ePages 5 provides access to the designs and layouts of all shops on the platform. Templates are based upon Cascading Style Sheets (CSS) so that web designers can change the templates as desired, and create new designs if they wish. Internet service providers can therefore regularly create new template sets and offer these to their customers.

3.8 Integrate and Extend via Standard Interfaces

ePages 5 is a mature standard product that can be easily extended and integrated. Third-party systems such as ERP systems can be connected through standard interfaces. Data transfer uses the standard Web services protocol, with data transferred via XML files.

Web Services

❖ *Further information is available in Chapter 5.4 and in the Technical White Paper.*

Functionality can be extended by installing modules called cartridges. These are installed by a technical administrator, and can be easily activated in the business administrator’s Back Office. A cartridge development tool is available for ePages 5 that enables partners to create new modules, and therefore to create brand new features to meet specific market requirements.

Additional Features

3.9 ePages 5 Drives Marketing and Sales

Exploit New Sales Channels, Win New Customers

With ePages 5, merchants can do much more than simply sell their products online. The shop system incorporates facilities to push products to many other sales channels as well. Of particular interest is integration to channels with a large and active customer base already in existence. For example:

- ▶ eBay Integration. The merchant configures his or her default setting for making sales via eBay from the ePages 5 Back Office. A specific product or set of products can then be listed on eBay directly from the merchant's back office using all the pre-defined descriptions and settings from the ePages store – there's no longer any need to visit an eBay seller account to set up listings. When the auction ends, an order is created in the ePages shop and can be processed and fulfilled just like any other order.
- ▶ Search engines such as Google™ can read all product and catalog pages of ePages shops, ensuring that merchants' products have the widest possible coverage on the Internet.
- ▶ Data export to product search portals such as Kelkoo and PANGORA. Some or all products from a merchant's shop can be exported, along with all the relevant data stored in the ePages database, to these leading product search engines. If a potential customer finds one of the merchant's products via these portals, he or she can follow a deep link (Direct Storefront Entry Link) directly to the product page of the merchant's store.

Additional marketing features built into ePages 5 further simplify and enhance customer acquisition and retention. Tell-a-Friend buttons on every product page enable customers to recommend a product to friends and acquaintances, creating a referral network through people that value one another's suggestions.

Retain Customers

Newsletters can be sent from the ePages merchant back office, allowing merchants to communicate new and exciting products to the right customer at the right time. Newsletters can be customized for specific target groups, such as all customers that bought something in the last month, or all customers that bought a particular MP3 player. Coupons can be included in newsletter mailings, with expiry dates and monetary values for each promotion defined by the merchant. This ensures that merchants can react quickly to market trends and offers, and provide best value to their customers.

The merchant can even select bulk pricing models for specific customers or customer groups for any given product, and can offer store wide discounts based on who the customer is, the total price of their basket, or their selected payment method.

Create Purchase Incentives through Cross Selling

ePages 5 allows merchants to make recommendations to their customers, by associating accessories or related items to a particular product. These accessories are then displayed alongside the product to which they are assigned. In this way, merchants can cross sell to customers and increase their revenue per customer. Automatic recommendations such as "Customers that bought this product also bought the following products" can be generated and displayed by ePages 5 as well.

3.10 Manage Customers and Customer Groups

ePages 5 stores a multitude of customer attributes such as address details and birth dates. The merchant can create an unlimited number of additional attributes and assign them to customer groups – these attributes are then filled out by customers and members registering on the merchant’s storefront. Customer groups can be used to create recipient lists for newsletters, manage discounts, and assign customer-specific prices, along with a whole host of other customer-centric features.

4. Using ePages 5

4.1 How Internet Service Providers Use ePages 5

Internet service providers operate ePages 5 via two administration interfaces: these are the technical and the business admin areas. All areas are secured via login and password authentication, and are completely separate from one another.

Technical administrators manage the purely technical aspects of the platform (assigning access rights, database backups, cartridge installation, installing updates, etc.). Business administrators concentrate on creating shop types for various markets, editing merchant data or using exported data to create reports (for example, the growth in number of shops over time, the average revenue per shop for a given year, etc.).

Internet service providers can define an unlimited number of shop types tailored to regional market requirements and target groups. Service providers can then fine-tune their offering for various industries and lines of business, and can determine a flexible price structure across the entire range of offerings. If a merchant requires a shop with extended functionality, s/he can switch to another shop type without any data migration effort, and with no additional upgrade costs.

A shop can be created in just a few simple steps:

1. The merchant registers with the ISP.
2. The merchant selects a shop type from the range provided by the ISP (for example, Shop Type 1, a basic shop with design templates, one language, one currency, maximum 100 products, newsletter management and Tell-a-Friend). The ISP can bundle the shop as part of a complete package that includes Web space, domains, and e-mail addresses, for example.
3. Merchant data is transferred via Web Services from the ISP’s provisioning system to the ePages platform.
4. The merchant details and specified shop type are created within the ePages 5 system.
5. The merchant receives login data for the shop.
6. The merchant logs in to the newly created shop. The design of the shop can then be customized using the ePages four-step design assistant; the merchant selects a layout style, enters the shop name and logo, provides contact information, and then reviews the data before selecting “finish”. Then the merchant can create or import catalogs and products, upload images, define shipping methods, enter further company data and terms and conditions, and much more.

Creating a Shop

In most cases, the shop will be created in “test mode”, but will already include all available functionality attributed to that shop type. The Internet service provider can dictate how long the shop will exist in test mode, during which time the merchant can simply purchase the shop online and continue to use the functionality.

4.2 How a Merchant Administers the Shop – the Back Office

Seven Modules for User-Friendly Administration

Usability was the key consideration during the design of the ePages 5 Merchant Back Office. The administration area comprises seven modules: “Orders”, “Customers”, “Products”, “Categories”, “Design”, “Settings”, and “Marketing”. These modules offer merchants essential ERP functions and extensive marketing features with which they can effectively manage and grow an online business.

“Order” Module

The “Order” module enables the merchant to view incoming orders and order history. All order details such as shopping basket line items, billing and delivery addresses, and customer details can be viewed within this module. The merchant can make changes and updates to orders after they have been made, such as adding products or changing the shipping address.

Order status manipulation and tracking is also included within the “Order” module. There are ten standard settings, including “Processing”, “Delivered”, and “Paid”. Invoices and packing slips are created with a single mouse click, and can be printed for reference purposes.

Orders + 1003 from 29/06/2004

General Invoice Packing slip

Status

Viewed Ready for Shipping
 Cancelled Dispatched
 In Process Shipped
 Pending Paid

Customer **John Doe (1002)**
Order Number [Send Order Confirmation Mail](#)

Billing Address

First Name John
Middle Name
Last Name Doe
Address Extension
Street Kastanienallee 11
Zip code / City 43210 Berghausen

“Customer” Module

With the “Customer” module, the merchant can search for customers, edit customer data and review a customer’s history. The ePages 5 database contains all orders, addresses, and login data for every customer that has placed an order. In addition to the standard fields such as address and password, the merchant can add an unlimited number of customer attributes such as hair color, size, birthday etc. Customer groups can be created as required by the merchant, and customers that possess a specific characteristic, or that meet a pre-defined set of criteria, can be assigned to these groups. Customer groups are then used as the basis for assigning discounts, sending tailored newsletters and creating distribution lists.

There are two ways to create new customers: firstly, the customer can register via the storefront, or secondly, the merchant creates the customer and assigns him or her a login within the “Customer” module of the Back Office. For registered customers, a password is created. If a customer forgets his or her password, the merchant can send a new password from the Back Office, or the customer can apply for a replacement via the storefront.

Customers + Max Mustermann (1001)

General Orders

Address

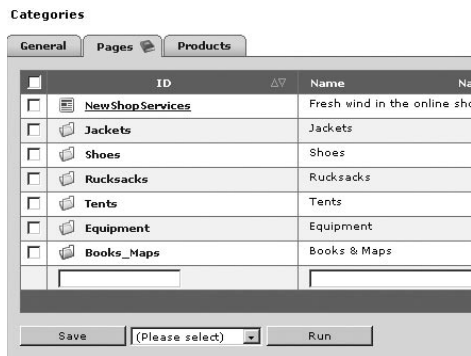
Gender Male Female Display Name
Salutation Address Extension
Title Street
First Name Zip code / City
Middle Name Country
Last Name State

User Account

Attributes

“Categories” Module (Catalogs)

In the “Categories” module, merchants can create product catalogs and sub-catalogs. Categories can contain an unlimited number of products, and products can be assigned to multiple categories, giving the shop an organized yet flexible structure. Special categories are included in the standard ePages 5 product, providing purpose-built, stand alone pages for essential information like terms and conditions and company details (known as “imprint”). Categories can also be created to include free-content pages, where a merchant can display news and events relating to specific products or brands.



Catalog structures from other sources, such as other e-commerce systems, accounts packages or ERP systems can be imported into ePages 5 using standard interfaces provided as part of the product.

“Products” Module

The “Products” module contains all the information a merchant will require to efficiently manage thousands of products. On selecting this module, the merchant is presented with a list of all products within his or her store arranged in order of ascending product number. By clicking on a product, the merchant can access a detailed view of the product. This detailed view includes:



Prices: Set price lists, and bulk prices, as well as standard discounts for the selected product. Assign prices and discounts to specific customers or customer groups. Enter different prices for each currency in turn to remain competitive on an international scale.

Stock: Define product dimensions, weight, units of measurement, minimum order quantities and current stock levels.

Product Description: Give products a name and a description in long and short form (up to 30,000 characters per field). Translate names and descriptions into multiple languages using this single page interface – this makes a translator’s job extremely easy. Write entries in HTML, or with the assistance of a word-processing style editor (known as a “What You See Is What You Get” or “WYSIWYG” Editor).

Images: Assign multiple images to every product in the store. Upload images only once – ePages 5 automatically resizes images and makes them available in all views. Automatically generate eye-catching slideshows on the storefront using the images stored for a given product. Store images upon an external server if required, in order to reduce load on the file server.



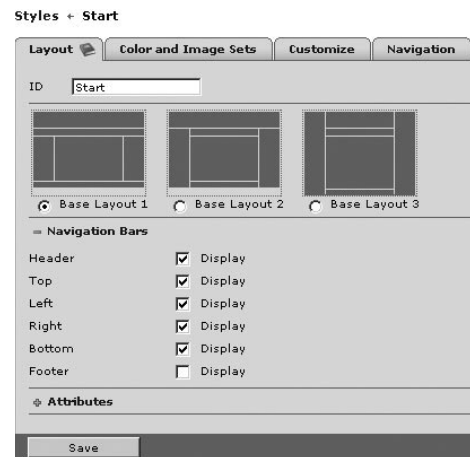
Product Variations: Create unlimited product variations (e.g. sizes, patterns, colors) whilst retaining all other attributes of the master product. These can then be changed manually as required.

Product Types: Define an unlimited number of product types and assign to these an unlimited number of attributes. On creating a new product and choosing a product type, the system automatically asks for the attributes associated with this product type.

The merchant can add attachments to each product, providing detailed information about the item in a PDF document, for example, so that the customer can easily visit the page later to download related information such as instruction manuals or safety guidelines. Products can be assigned to multiple categories, allowing items to be displayed according to type or brand. Again, products from third party software applications can be imported into ePages 5 using standard interfaces provided as part of the product.

“Design” Module

ePages 5 comes with a number of design templates. In the “Design” module, the merchant can choose a shop layout from the available range of design templates, and choose graphic and color settings. Navigation elements can then be placed in six different areas on the storefront: top/bottom, right/left, and header/footer. Examples of navigation elements are: a link to home page, login window, shopping basket, language selection drop-down menu, menu for currency selection, a link to terms and conditions, a link to the “imprint”, shortcuts to catalogs, etc.



A large area in the centre of the page is designated to the presentation of catalogs and products, ensuring that the customer’s attention is always drawn towards browsing and shopping.

The merchant can change the size of each individual area, upload background images, assign colors, and choose alignment and orientation.

“Settings” Module

Via the “Settings” module, the merchant is able to configure basic shop settings. Languages and currencies, payment and shipping options, tax rates and areas and numerous other preferences are configured within this admin area.



The Customer Setup area is where customer attributes are defined and customer groups are created. The merchant decides on who may order; whether only registered customers or all shop users, what data is requested during new user registration, and which fields are mandatory.

Finally, e-mails sent by the system can be edited to ensure each merchant can customize their e-mail responses (e.g. automatic order confirmation, etc.).

“Marketing” Module

The “Marketing” module contains all the functions that will assist a merchant in acquiring customers and communicating offers to existing clients. Major international sales channels can be exploited with a few simple clicks, allowing products and/or catalogs to be exported to eBay and to product search engines such as Kelkoo or PANGORA.

Through the use of newsletters, merchants can inform customers about new products, special offers and discounts. Newsletters can incorporate coupons, providing customers with an incentive to revisit the store and make purchases of general or specific goods. The merchant can set coupons to expire after a certain date, or based on special settings, for example, after the first 20 coupons have been redeemed.

4.3 How Customers Shop – the Storefront

From the customer perspective there are two possible ways to access an ePages shop: (a) by URL that is already known, or (b) by finding a product listed on a product search engine, e.g. Kelkoo. If the customer clicks on a link in such a product search engine, s/he is re-directed immediately to the detailed view for the desired product in the ePages shop.

Customers can intuitively browse catalogs and sub-catalogs in the storefront. Each step of the catalog path is shown as a “breadcrumb trail” at the top of the page for ease of navigation. Special categories are provided for sale and promotional items, or “hot deals”. Potential customers that know exactly what they want can locate relevant catalogs and products using the built-in search and advanced search functions. In addition, shoppers can use Boolean logic (“AND”, “OR” statements) to search for products with a specific combination of attributes, and the results can be limited to a pre-defined price range.

Product Search

Catalogs and products can displayed on any branch of the catalog structure, so customers can be shown products and catalog options on the same page. Top-selling products can therefore be presented to the customer before s/he enters the main catalog, and hot deals can be shown throughout related categories.

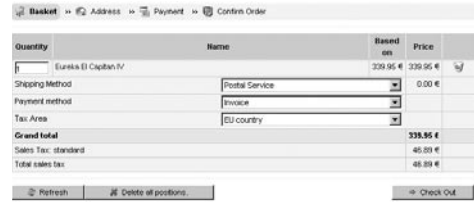
Once the customer has selected a particular category of products s/he will be presented with a product list. All lists are shown a page by page with links to “next” and “previous” pages. On choosing an item from the list, the customer will reach the product detail view page, where s/he can read about the product, view images and slideshows, download related documents, browse associated “cross selling” articles, and elect to “Tell-a-Friend”. Customers can use the Tell-a-Friend feature to recommend a product to friends and acquaintances via an automated e-mail service without leaving the merchant’s store.

Product View



Order Process

The customer can add products to a shopping basket either one at a time or in larger quantities if required. The shopping basket status is shown in the navigation bar. When the customer enters the shopping basket s/he is entering the first stage of the order process. On the shopping basket page the customer can enter a note next to each product – perhaps a personalized message to be engraved on a pen – and review prices, discounts, and the sum of all taxes and shipping costs associated with his or her basket. In the ensuing steps of the order process the customer reads and confirms acceptance of the merchant’s terms and conditions, confirms and submits the order, and makes an online payment if applicable. Both merchant and customer receive a confirmation e-mail containing a detailed breakdown of the order.



In certain cases, dictated by the merchant, only registered customers may order. If the merchant allows orders from non-registered customers, these customers must enter their personal details for each order. Billing and shipping addresses can be entered independently, thereby supporting both B2B and B2C sales scenarios.

Registered customers are able to log in and access previous orders and track their order status online. They can also create multiple shopping lists and then convert these to shopping baskets during later visits. This enables customers to compile wish lists, or to regularly order the same list of products. ePages 5 alerts the customer to any price changes that might have occurred to listed products since their last visit.

5. Technology, Security, Scalability and Extension

5.1 Architecture

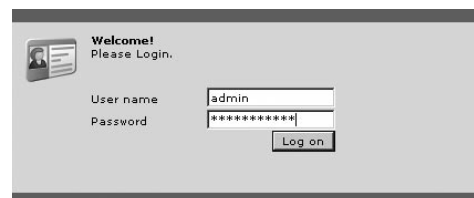
ePages consists of a four-level architecture which comprises:

- ▶ Web browser
- ▶ Web server with a Web adapter and a request router
- ▶ ePages Application Server
- ▶ Sybase® ASE 12.5 Database

For more detailed information about the ePages 5 architecture, please consult the Technical White Paper.

5.2 Security

ePages 5 security standards are exhaustive. Security has been prioritized in every layer of the application; from the Web and application servers, to database architecture, to administrative interfaces, right through to purchasing goods from the storefront.



Optimum system security is ensured by separating the software into different modules for the database, and for system and business administration. Each module is protected by a unique login and password, and is isolated from the other areas, and from the storefront, so that access to one module does not allow access to any other module.

The technical administrator is the only person with full access privileges to the databases, the storefront, and the administrative areas. S/he has full control over access rights of other users and can only enter this area via a password protected interface. The technical administrator can create “Business Administrators” that can, for instance, define shop types, edit merchant data, activate or deactivate cartridges, or generate reports. Each user has access to a user-specific interface that is password protected.

If desired, additional security mechanisms can be implemented. The administrator can, for example, increase the security in the administrative modules by only allowing access to the application and database from specific machines. To do so, s/he divides the Web server and defines a private port that is only open to specific IP addresses, for example those of a few administrator machines at pre-determined locations.

ePages 5 supports Secure Socket Layer (SSL 3.0), a security protocol that prevents access to, manipulation of, or data changes in client/server applications. This allows some or all pages of the application (dependent on Service Provider preferences) to be encrypted. For example, on a storefront, those pages where personal data or credit card details are entered.

5.3 Improve Performance through Scaling and Page Caching

With ePages 5, the database, application, and Web server can all be installed on different machines. It is also possible to install the application and Web servers on multiple machines to improve performance. If these machines contain multiple processors, they can be used to full capacity, since the request router evenly distributes the load across all processors.

Thanks to these features, the ePages application is capable of very high availability and can be further enhanced by clustering database servers. In the event of failed processors or servers, the entire application can continue to run from a second, fail-over database machine whilst the problem is resolved or new hardware is installed.

ePages 5 uses caching technology that enables dynamic pages to be drawn from the database only during the first customer impression. Once rendered, the page is cached by the Web server, and if the same page is requested again it is loaded from the cache rather than from the database. This dramatically reduces system load, and results in an increase in performance across all components. If data is altered in one of the administration interfaces, the cache is updated automatically.

5.4 Extend and Integrate with Cartridges and Web Services

ePages 5 functionality can be extended and customized to cater to a vast range of requirements. The software can be connected to third-party systems in order to further enhance the service provider’s, partner’s or merchant’s offering. Common integrations include those to online payment providers, logistics systems, address verification and credit checking systems, as well as Enterprise Resource Planning (ERP) systems, Customer Relationship Management (CRM) software and accounts packages.

System Administrators

Additional Security Mechanisms

Distributed Installations

Page Caching to Reduce Load on the Database Server

Cartridges

Through the implementation of additional modules (Cartridges), providers can modify ePages to meet their own requirements. The Cartridge Development Tool provides an complete environment with which to do this. Cartridges can make use all ePages 5 API's, and have their own installation and un-install routines. In a hosting environment, a cartridge can be installed just once, and activated across multiple shops by a technical or business administrator.

...❖ *Detailed Information about the Cartridge Development Tool is available in the Technical White Paper. An overview of currently available cartridges is in the cartridge data sheet on our Web page.*

Web Services

ePages provides an XML interface in the form of Web Services. Web Services use SOAP, in addition to other protocols, to facilitate data transfer with external applications when exchanging catalogs, products, customers or orders between the ePages database and third party systems.

ePages offers three standard Web Services cartridges (“Content”, “Customer”, and “Orders”). In addition, ePages presents customers and partners with the option of developing further Web Services for specialized integrations.

6. Components and System Requirements

ePages 5 includes the following components as standard:

- ▶ ePages 5 software
- ▶ Installation routine
- ▶ Sybase® ASE 12.5.2 Database
- ▶ Sybase® ODBC-Driver and Sybase® Open Client
- ▶ Product documentation, including User Guide
- ▶ Design templates

ePages runs on various platforms. The following operating systems are supported:

- ▶ Windows® 2003
- ▶ Sun Solaris 9
- ▶ Linux RedHat Enterprise 3.0

You will need at least 512 MB RAM and 1.2 GB hard disk space to run ePages 5. An Internet connection with valid DNS names and Web server software (for example, MS IIS, Netscape, or Apache) are also necessary. For most system administration and administrative tasks, as well as for storefront processes, only an Internet browser is required.



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