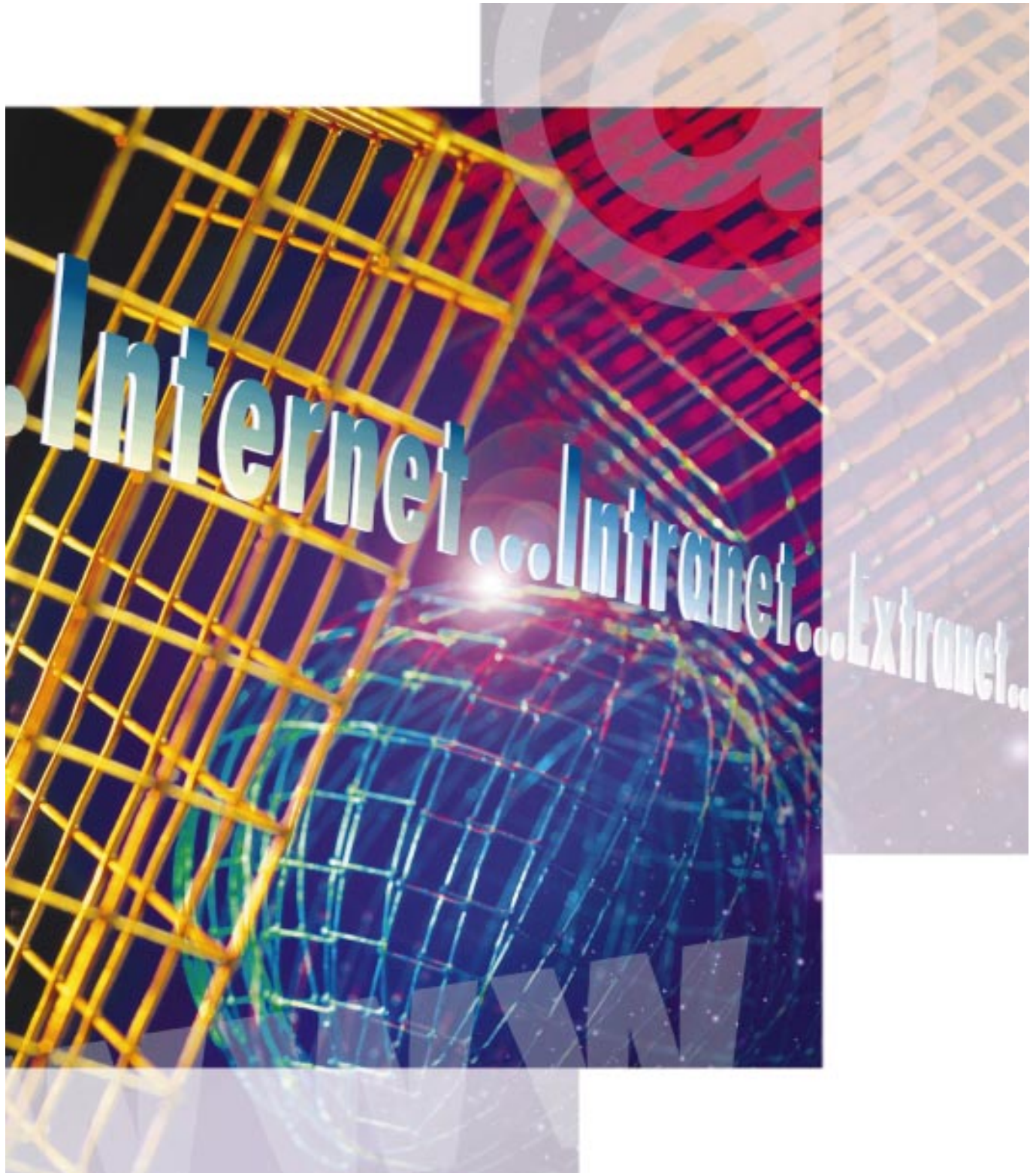


R/3[®] System

Move into the Virtual Marketplace

Fast and Reliably with R/3



Business Processes on the Internet

Move into the Virtual Marketplace Fast and Reliably with R/3

Professionalization of the Internet

The times are past when the Internet was still considered the domain of high-school and college students.

They are now a minority among the over 50 million people who have access to the Internet. The situation has indeed changed—and quickly. Some 80% of large companies in the world's leading industrialized nations have established a presence on the Internet, and small and medium-sized businesses are rapidly catching up. Experts predict that the number of players will continue to grow by about 50% each year on average. No question about it—professionalization and commercial utilization of the Net are set to be among the hottest business topics in the years ahead.

The Web—More than an Electronic Advertising Medium

No end to this breathlessly swift growth is in sight. The catalyst is the Internet, with around-the-clock availability 365 days a year. Access is growing cheaper by the day, driven by increasingly powerful hardware and software. And the most important Internet service of all, the World Wide Web for searching and navigating globally distributed document structures joined by hyperlinks, can now be easily operated by any computer user, thanks to intuitive, affordable Web browsers.

Advancing on this broad front, Internet technology

will revolutionize the entire communications sector, and also turn upside down the ways in which companies do their business. But experiments in electronic commerce in recent years have shown that technically oriented application know-how is not enough by itself. Most companies have so far concentrated on using the Internet to exchange documents and e-mail, or as a virtual advertising medium: home pages offer prospects opportunities to interactively obtain information about companies and products. But that just about exhausts the capabilities of current Internet technology.

Extending Business Processes into the Internet

Companies need to address issues such as: Will it pay for them to invest in the bulletin-board approach? After all, it may initially cost them only a few tens of thousands of dollars, but the annual expense can grow to six-digit sums. Or should they invest in more tangible ways of doing business instead? If it is already possible to electronically link millions of people and organizations around the world, then it should also be feasible to couple your own application systems with those of customers, partners and vendors via the Internet. The focus is on extending business processes beyond corporate boundaries to achieve seamless, largely automated integration of consumers and partner companies. This will enable companies to

act more nimbly to open up new markets anywhere in the world.

Questions Asked by Users

A marketplace study conducted in late 1996 came up with some highly interesting results. International Data Corporation analysts discovered that



http://www

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80% of Fortune 500 companies were already present on the Internet. This was clear proof that the Internet has emerged as a true marketing medium. Yet as of the end of 1996, fewer than 5% of these companies had begun extending their business processes into the Internet. At the time, of course, there were many good reasons to be cautious. Before any company com-

mits itself to serious trading over the Internet, it has to find answers to three critical questions:

- What is to be the common language in the Global Business Village? In technical terms: Do reliable, functional interfaces exist for meaningfully linking together different application systems?
- What investments are required in terms of time and development costs? When will companies see a return on their investment? Which business processes and application areas should be addressed first?
- Will there be any security risks associated with extending mission-critical processes into the Internet?

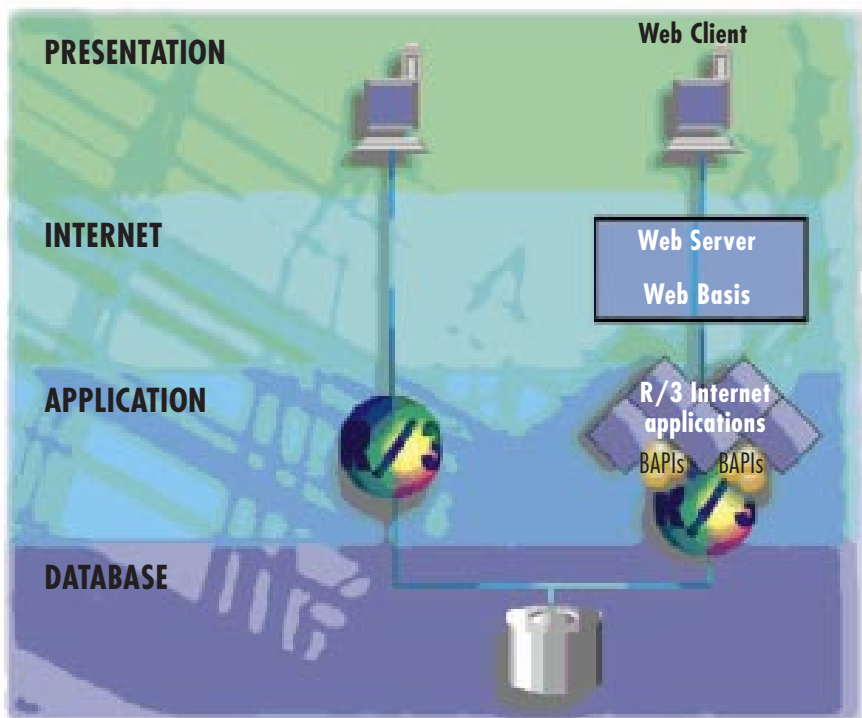
Bundled Competencies for Commerce on the Internet

Fortunately, technological advances have already provided the answers to all three questions. And

here once again, SAP—the market leader in standard business software—has done pioneering work. R/3 users are among the first to reap business benefits from the Internet, thus gaining a crucial competitive edge. Directly linking a producer's inventory management system with a supplier's ordering system makes doing business much faster. Both become more willing to provide service. Customer orders are automatically relayed from the Internet to order entry and on to production, thus enhancing quality. And these are just two examples to illustrate the potential gains. For this purpose, SAP has bundled together critical know-how in three areas: Internet technology, integration of heterogeneous systems, and business processes. The result: R/3 Internet applications geared to practical needs. Clearly positioned within the Business Framework of the R/3 architecture, they guarantee fast and reliable entrance into the virtual marketplace.

SAP's R/3 Internet applications are opening up new markets and business opportunities between consumers and companies (consumer to business), between companies (business to business), and between employees of the same company (intranets).

www.sap.com



The clear architectural structure of the R/3 System lets you get started in Internet commerce without risk. It also makes it easy to practice tight security.

A Smooth Start in Internet Commerce

Move into electronic commerce fast and reliably. Innovative companies around the world are already taking advantage of this offer from SAP. Without having to invest time and money in developing their own solutions, they are leveraging an infrastructure that lets them seamlessly extend R/3-based business processes beyond their enterprises.

R/3 Internet Applications: Fast and Without Risk

In a joint effort involving customers and external and in-house experts, SAP has developed Internet-enabled R/3 applications. These can be either productively used just as they are, or quickly and

conveniently adjusted to meet your organization's particular requirements. From a business viewpoint, the R/3 Internet applications offer solutions to satisfy companies' most urgent requirements and yield clear cost/benefit advantages as quickly as possible. A total of 38 such R/3 Internet applications are already available today.

And these applications are continuing to evolve at a fast pace to meet your practical needs. Their purpose: to automate business processes over the Internet for dealings with partner companies (extranets), final consumers (Internet), and your own employees (intranets). Users of the R/3 Internet applications benefit from both the clearly

structured R/3 architecture and the evolutionary introduction of object-oriented techniques.

A Common Language in the Global Village

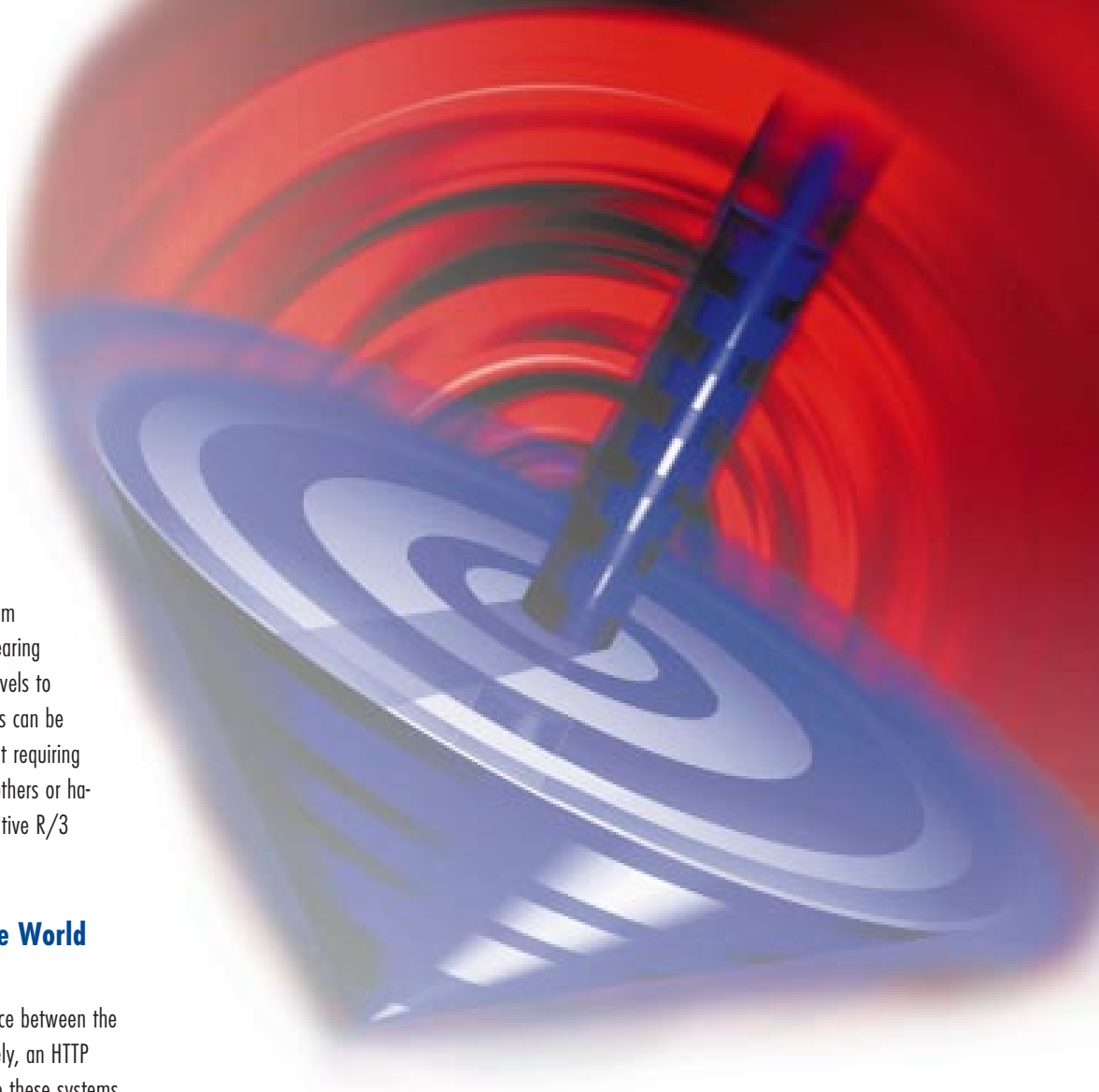
By defining object-oriented Business Application Programming Interfaces, or BAPIs, within the scope of its Business Framework Architecture, SAP has assumed a pioneering role in devising specifications for open communication between different application systems. The R/3 Internet applications utilize BAPIs to access the R/3 System and leverage its powerful business functionality and multilingual capability.

The addition of R/3 Internet applications to the core R/3 System yields a crucial advantage: Additional components can now be developed independently of the current release level of the core R/3 System. What's more, since SAP has disclosed the BAPI specifications, certified third-party vendors may also use Java, Visual Basic or another programming language to develop their own Internet components and take advantage of R/3's functionality.

SAP has developed and published over 150 BAPIs. They are integral components of the R/3 System, and are already at the disposal of thousands of R/3 users and SAP partner companies. Working on this broad foundation, companies can effectively exploit the many opportunities for doing business on the Internet.

Keeping Internet Business under Control

With its clearly defined architecture, the R/3 System offers an ideal solution for accomplishing this. Its key characteristic is clear separation of the three original levels of client/server software: database, application and presentation, plus a newly



added enabling layer: the Web Basis that serves as the link between Web servers and the R/3 System.

Companies can scale the R/3 System virtually without any restrictions, gearing the IT resources on each of these levels to their actual business needs. Changes can be made on one of these levels without requiring any additional investments on the others or having any repercussions on the operative R/3 applications themselves.

Interpreting Between the World Wide Web and R/3

The Web Basis is the pivotal interface between the World Wide Web—or, more precisely, an HTTP server—and an R/3 System. Since these systems use different protocols and data formats, an intermediate agent is needed to control and coordinate communication between the two.

In addition, the Web Basis manages the various Web users and the Web transactions they start. An integrated Web Studio provides a user-friendly environment for modifying existing Internet applications and creating new ones.

All-Round Security for Internet Commerce

The clearly defined structure of the R/3 Internet architecture lets you precisely address points of contact that are relevant to security concerns: from the point where the Web client interfaces with the HTTP server and the Web Basis, to the R/3 Internet applications, and finally—controlled by BAPIs—into the core R/3 System itself. At each of these interfaces, powerful security mechanisms take care of authenticating users and servers and encoding data. SAP naturally also supports standards defined by other vendors and

user consortiums, for instance in the banking and insurance industry.

Firewalls can be additionally installed, such as between the Internet and the HTTP server within the company. Another firewall can be built within the Web Basis itself. A combination of these measures lets your company optimally meet its unique security needs.

Getting Started on the Internet

The following scenarios, based on real-life business practices, illustrate how the R/3 Internet architecture enables you to move into electronic commerce fast and reliably.

From Presentation to Interaction

Integrated Business Processes via the Internet: from Quotation to Order to Delivery

Today, one of the most popular ways of using the Internet is to provide product information at a Web site. But companies can derive much greater benefits if they go a step further and extend their business processes into the Internet. From offers on a home page, to internal, IT-assisted order processing, and on to delivery itself—this is the business process chain that can be comprehensively supported.

The R/3 Internet applications allow you to redesign your business processes for greater speed and quality. The result: lower costs and the ability to provide more comprehensive service, thus enhancing customer loyalty. This applies, for example, to business relations between a mail order company and its customers, or between a wholesaler and purchasers at client companies.

Integrated Internet Business Processes

The R/3 Internet applications let you provide an attractive multimedia offering for customers on a

home page, and link the Internet to your own business processes. For example, after a customer fills a virtual shopping basket with articles, she can then request an individual quotation. She can also check whether all the items are available, and when they can be delivered. All of this information is available from the operative R/3 System. If the customer accepts the quotation, the R/3 System automatically creates a customer order. All other associated business processes can also be automated, right through to production, on the basis of SAP Business Workflow®.

Visibility and Security for Customers

The customer receives an order number, which he can subsequently use to query all relevant status information. In other words, the order doesn't just disappear into the black hole of virtual commerce. Instead, the ordering process remains continuously

Logistics

- **Product catalog**
- **Sales order entry creation**
- **Sales order status**
- **Available to promise**
- **Consignment stock status**
- **Quality certificates**
- **Quality notification**
- **Service notification**
- **Measurements and counter readings**
- **Kanban**
- **Requirement request**
- **Requirement request status**
- **Collective release of purchase requisitions**
- **Collective release of purchase orders**
- **Project data confirmation**



visible, giving the customer a feeling of security and of being comprehensively looked after. For instance, a shipping company can make information about its services available on the Internet. If the company is contracted to ship a product to a customer, the customer can call up the status information on the order and then branch by hyperlink straight to the corresponding shipping information, such as where the shipment is momentarily being transferred or loaded.

Integrated Quality Management

When shipping products to customers, many firms—such as chemicals and pharmaceuticals manufacturers—routinely issue certificates to document their quality. Quality certificates can also be generated by the R/3 System as shipping documents. The supplier can freely define the content and form of the certificates for individual customers.

In addition to printing out a hardcopy to accompany a shipment, the R/3 System lets you meet special customer wishes by printing out quality

certificates on an ad hoc basis, and, if wished, faxing them to the client. This process can be easily handled via the Internet: An authorized customer can directly download the certificate from the supplier's R/3 System without any time-consuming intermediate steps.

The Internet also provides a convenient means of handling customer complaints. Customer messages can be downloaded from the Internet and directly relayed to the R/3 quality management module.

The responsible worker receives the customer's complaint online at her workplace and is enabled to respond promptly.



Accounting

- **Customer account information**
- **Asset information**
- **Internal activity allocation**
- **Internal price list**

Modern Management in Intranets

Self-Service Applications for Better Integration of Employees and to Ease the Workload of the Human Resources Department

Keep Your Head Free for Strategic Personnel Planning

Most human resources departments have such a heavy workload that they can barely keep their heads above water. They have to keep personnel files up to date, or enter and process vacation applications submitted in writing. Employees phone in to ask about fringe benefits, or how to handle travel and other expenses. It is rare for these departments to have any time left to deal with strategic issues of human resources management, salary management, or training and recruitment of staff.

Precisely this problem is addressed by the R/3 Employee Self Service applications. These applications improve the ability of human resources departments to provide services by cutting down on the work involved in routine jobs. Many personnel-

related tasks can be performed by employees themselves via the company intranet. For example, they can update their own electronic personnel files when their address or marital status changes. Or submit an application for vacation time online. And naturally also retrieve information about employee benefits or staff rules.

Effective Time Management

Modern human resources management must meet many challenges. Foremost among them are the fundamental changes that are revolutionizing workplaces in the 1990s. Important concepts in this context are the flexibilization of working hours and the establishment of virtual workplaces outside

of company buildings. This makes it all the more important to keep track of when, where and how long employees work. The Internet, used within the scope of an R/3 intranet application, offers solutions for this.

Support is provided both for companies that offer flexible working hours to their employees, and for those who record when employees arrive and depart. Support is naturally also provided for arrangements in which employees work all or part of the time outside of the company. Such workers can use the intuitive Web user interface at any time to check how many hours they have worked in the current or previous payroll period.



Human Resources Management

- *Employment opportunities*
- *Application status*
- *Who's Who*
- *Calendar of events*
- *Registration for events*

Web-Enabled SAP Business Workflow : Any Time — Any Place

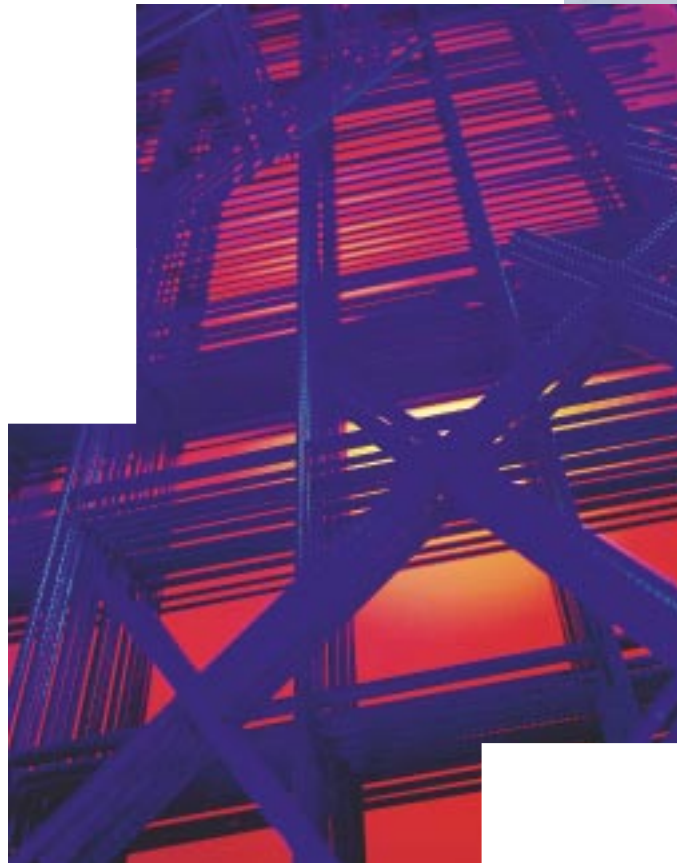
Lost in the Global Business Village?

Many sales and project staff rarely see the inside of their own company, and tend consequently to be cut off from in-house corporate communications. SAP has developed R/3 intranet applications to integrate these employees into their company's information-distributing and decision-making processes.

Today field staff can access the Internet from any location and view their e-mail in SAPoffice. They can also immediately reply to messages. And if they have to make a decision at any point in a business process chain defined by SAP Business Workflow, the related work item will be in their inbox. It is no longer necessary to wait until they return to the office: They can make decisions in the field, which vastly accelerates business processes.

Projects conducted outside the company at customer facilities can also be controlled and monitored more effectively using an R/3 intranet application. Employees working on-site and other authorized persons can quickly and easily send project data via the intranet to company headquarters to keep project managers up to date. As a result, problem situations can be detected sooner and steps taken to remedy them before they can get out of hand. Effective escalation management can be quickly initiated to reliably provide services to customers as pledged.

These are just a few examples of intranet applications. The only limits to creativity are a company's internal procedures and rules: You have the freedom to define which accessing and processing functions are meaningful in your corporate context, and which are not. The R/3 intranet component also benefits from the enhanced data privacy provided in this sensitive area by the comprehensive security mechanisms you can easily implement within the R/3 Internet architecture.



Basis

- *Integrated inbox*
- *Workflow status*
- *Time statement form*
- *Web reporting browser*

Opportunities for Growth in the Virtual Marketplace

Mature Internet Applications and Generally Acknowledged Interface Definitions Ensure a Boom in Internet Commerce



SAP is indisputably leading the way as a facilitator of Internet commerce. The BAPIs defined in the Business Framework Architecture are compatible with Microsoft's interface definitions for the COM/DCOM architecture, and with the CORBA definitions. This provides a broad base for third-party vendors to create and market Internet components that leverage the powerful and mature business functionality of the R/3 System. Companies active in the global business village reap palpable benefits from this added flexibility and agility.

Flexible and Agile in the Global Business Village

SAP is vigorously driving the overall development process. 150 BAPIs have been defined and published so far, and their number will continue to rise. Additional R/3 Internet applications are projected. These include:

- An application for the R/3 Oil and Gas industry solution: In the future, tank truck drivers will be able to use a hand-held PC integrating the functions of a cellular phone and a browser. As a result, after making a delivery—e.g., to a gas station—they can immediately use the browser to enter the delivery information and send it to the R/3 System for further processing. The benefits: lower administrative overhead, faster invoicing, and a realtime overview of delivered quantities at the head office.
- Industrial handling of liquids and gases is subject to very stringent safety and quality requirements. In the chemicals, pharmaceuticals and food industries, for example, safety data sheets are required by law for every shipment. In addition to this, many customers expect detailed product specifications and information on how individual batches have been produced. SAP is therefore designing BAPIs and Internet scenarios specifically for the PP-PI and EH&S modules to optimize the flow of information between suppliers and customers. In the future, changes made to safety data sheets can be sent to customers more easily via the Internet. They, in turn, will be able to take advantage of the Internet to retrieve product specifications, batch information, or even analysis certificates for individual batches directly from their supplier's R/3 System.

- The R/3 Project System (PS) will feature a new intranet solution enabling quick, convenient accessing of documents relating to a project. Because projects are processed in a variety of company areas, such as Purchasing and Controlling, optimal information flows in the PS module are mission-critical. Everyone involved in a project will be able to call up important CAD engineering drawings, logs, graphics and other relevant documents via an intranet. This facility will support decentralized project planning and control. SAP customers in the capital goods industry or component suppliers, for example, will benefit particularly from this functionality: SAP already uses it to for its own development planning and project tracking tasks.
- The continuous enhancement of R/3 Basis technology also reflects SAP's Internet commitment. For example, SAP is adding functionality to the Web Studio, which provides developers with a robust and user-friendly environment for creating their own Internet applications.
- The R/3 reporting system is already accessible via a Web browser. In Release 4.0, it will offer even more powerful functions. Users with the appropriate authorizations will be able to navigate quickly and simply through the reporting tree in the R/3 System. The standard and individually created ABAP report programs correspond precisely to those in the core R/3 System.

Seizing Opportunities

While the debate on the relative merits and drawbacks of the Internet continues, in actual fact the future of Internet commerce has long since arrived. Users of the R/3 System are among the first to optimize their business processes on this basis and gain early competitive advantages as a result.

Don't you want to be one of them?

- **R/3 System Release 3.1—
Business Processes via the Internet
(Function brochure)**
- **The Electronic Commerce Challenge—
Business at Internet Speed (Overview)**
- **Human Resources—
Trends and Highlights from the Internet
to Workflow Management (Overview)**
- **SAP's Employee Self-Service
(Overview)**

“ Our customers (dealers) expect us to deliver this flexibility. It is an absolute win-win situation. ”

**Peter Rohwer,
CEO of Aspri**

“ R/3 3.1 implements our intranet applications in the field of human resources. Within a very short time, SAP Japan and SAP AG have made available a solution that excellently meets all of our needs. ”

Kawasaki Heavy Industry, Japan

“ We are finding the 3.1 scenarios very useful—it is definitely the right way to go, and provides exactly what SAP announced in June 1996. ”

Swiss Banking Association

“ Siemens AG has been working with an Internet solution since early March, using the functions “product catalog” and “incoming orders”. ”

Siemens AG, Austria

Imprint

© 1997 by SAP AG · Published by: SAP AG · Neurottstrasse 16 · D-69190 Walldorf · Germany
Tel.: (+49) 180/ 5 34 34 24 · Fax: (+49) 180/5 34 34 20 · Internet: <http://www.sap.com>

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Text: Technology Marketing Walldorf

Printed on environmentally friendly paper.

Glossary

IACs

Internet application components are turnkey solutions for linking the R/3 System to the Internet. They make it possible to execute the R/3 System business functions using a World Wide Web browser. The R/3 Internet applications can be either directly used as is, or taken as the basis for creating new ones.

BAPI

BAPIs are standardized open Business Application Programming Interfaces. They are methods of SAP business objects, and provide an object-oriented view of the business functionality of the R/3 System.

Business Framework Architecture

SAP's Business Framework Architecture organizes R/3's functionality into an integrated group of Business Components that can be combined or extended by linking them to compatible third-party applications. Thanks to the Business Framework Architecture, SAP is now able to offer its customers new functionality faster and to provide them with systems containing precisely the functionality they need. Because it incorporates Application Link Enabling (ALE) technology and extendible business processes based on SAP Business Objects, the Business Framework Architecture offers all of the benefits of a fully integrated business system.