



Project Management for Engineering Companies



MARINGO

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EXECUTIVE SUMMARY

ProjectManagement is an integrated project management and accounting solution specifically designed for the business software solution SAP® Business One. ProjectManagement caters for all business processes of small and midsize engineering companies through a uniform user interface. The solution provides one single database to manage data, from Financials, Human Resources, Project Management, Engineering to Customer Relationship Management (CRM). Depending on their access rights, users have access to all the critical information they need to make smart business decisions. ProjectManagement is not only an easy-to-use and affordable solution, but also highly customisable and feature-rich.

ProjectManagement is distributed internationally and is available in different languages. The solution is delivered by a network of qualified business partners that distribute the software and provide local service and support. For this reason, ProjectManagement for SAP Business One already has more than 6,000 users worldwide!

ABOUT SAP

SAP is the world's leading provider of business software solutions for different industries. With over 12 million users in more than 120 countries, with over 100,000 installations and more than 1,300 partners worldwide, SAP is the leading manufacturer of business software solutions and the world's third largest independent software provider.

Whereas SAP solutions were mostly used by large businesses in the past, companies of all sizes are using the software today to realise its full benefits. SAP spends more than one milliard Euro each year on research and development to ensure that solution portfolios meet current and future specific needs in different industries.

ABOUT MARINGO

MARINGO Computers is one of the leading SAP Channel Partners in the SAP Business One environment in Germany.

MARINGO Computers was founded in 1986 in Cologne (Germany) and specialises in the development and sale of business software solutions. In order to distribute ProjectManagement also in the US market a branch office was founded in New York.

SPECIAL FEATURES

Entire Workflow

ProjectManagement handles the entire workflow of engineering companies, from proposal management and project planning, data recording and data approval to invoicing and data posting. Because one single system is used to manage data, all authorized persons have access to the critical information they need to make smart business decisions.

Web Client

The Web Client is a comprehensive information tool used to enter, maintain and access data concerning customers, employees and projects. Access to data is always available independent of location and time.

Sophisticated Project Planning

ProjectManagement allows for the creation of different planning versions. Planning versions created by the user continue to exist and can be updated or compared depending on the project's status. Different planning methods (e.g. Gantt Planning, Period Planning) allow the user to update the project. The different planning types give project managers a multidimensional view of their projects.

Travel Expenses Accounting

ProjectManagement assists the user in creating detailed travel expenses, normally a time-consuming process for the accounting department. Travel expenses are recorded in the Web Client or the standard system by the employees or by specifically authorized users. Costs can either be charged to the customer or can only be accounted for internally by the employee.

Role-Based Access Rights

Keeping data centrally could create risks because not all users of the system should have access to data or should be able to edit data. For this reason, ProjectManagement includes a sophisticated access right system based on the employees' roles (field of duty) within the company. The access right system can be easily tailored to individual needs.

Management Information System

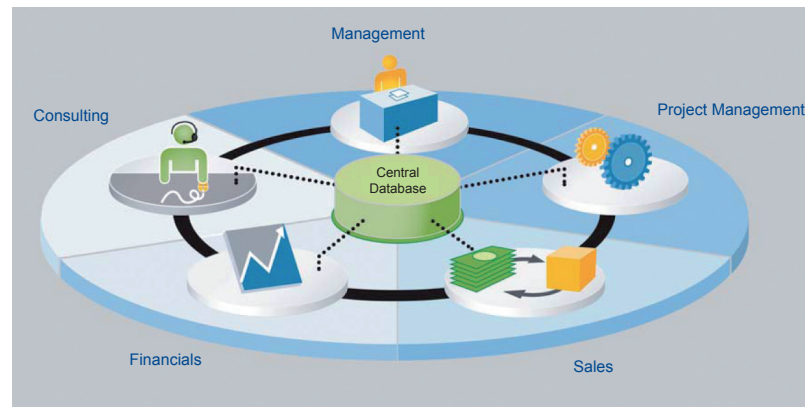
ProjectManagement provides the management with powerful controlling and reporting tools to ensure access to critical up-to-the-minute information. Authorized users can select any report and personalize the layout for printing.

Inter-Company And Intra-Company Distribution

ProjectManagement supports two types of internal distribution: It enables to distribute amounts between profit centers or between branches or branch offices of a group of companies or a holding company.

Work In Progress

Rendered services often cannot be charged to the customer at the end of the month because it has been contractually agreed that work will be invoiced upon phase or project completion. ProjectManagement enables users to monthly evaluate the inventory of work in progress based on the incurred costs and to post inventory changes accordingly.



“The solution enables us to work with a single, accurate source for all critical, up-to-the minute business data. This gives managers a complete view of the status of current projects.”

Friedrich Hörauf, Managing Director, GCA projektmanagement + consulting gmbh

BENEFITS FOR YOUR BUSINESS

Uniform User Interface

ProjectManagement supports the business processes of engineering companies. This means, only one single system handles the typical workflow of an engineering company working on a project-oriented basis, from project planning, data recording, data approval and invoicing to accounting.

One-Time Data Entry

ProjectManagement is an integrated system and therefore avoids costly, error-prone workarounds across multiple software tools.

Solid Ground For Decision-Making

The use of one single system for data management guarantees that each authorised user has access to up-to-date information. Managers have access to solid data for better decision making.

Complete Overview

In addition, using one single system for data management delivers managers information on the status of projects, business units or the entire company for an immediate overview.

Enhanced Customer Relationship

Employees of the support department have direct access to customer data so that they can react faster on customer demands or determine the reason for customer reactions.

Simple Maintenance

ProjectManagement is an integrated system that runs on a single server thus reducing maintenance time and costs. The 'live update' function enables to download new versions at the touch of a button. A distribution setup provides for the allocation of the new version to all other clients.

Reduced Learning Curve

The Microsoft Windows environment helps users to become familiar more quickly with the system and therefore significantly reduces the learning curve.

Cost Reduction

As ProjectManagement is an integrated solution only one system has to be maintained and updated. This lowers the costs for software updates of different programmes significantly.

Worldwide Support

ProjectManagement is available in different languages. The software supports all common currencies and is distributed in many countries by qualified business partners.

Secure Future / Secure Investment

ProjectManagement is based on SAP Business One from SAP, the world's leading provider of business management software.



SUPPORTED BUSINESS PROCESSES

ProjectManagement is a comprehensive project management and accounting solution with an intuitive and easy-to-use interface. The application includes all the tools you need to optimize and simplify your business processes, including the following:

Customer Relationship Management (CRM)

ProjectManagement includes an integrated CRM system with various functions, from opportunity management and project information with web-based access to an entire web-based component for the management of customer support requests. This integrated function provides a quick overview of all aspects of customer relationship management. The deep insight into the project's process and the customer support allows recognizing the customer's needs more quickly which enhances the customer relationship and increases customer satisfaction. Managing and controlling the customer relationship and the project process more effectively leads to both greater profit and more business opportunities.

Management Controls and Reporting

ProjectManagement provides the tools companies need to streamline operational and managerial processes. The solution provides online alerts on project relevant results, such as monitoring project budgets or limitations for single services agreed by contract. If a limit is exceeded, the system notifies the project manager automatically. By simply selecting information and associating it with another, managers can easily analyze complex information and generate reports.

Information Management

The intuitive user interface with powerful tools allows the authorized user to get an overview of the projects' current status or the business situation. In addition, data can be retrieved directly. ProjectManagement thus offers a wide range of hitherto unknown possibilities for management and decision-making.

Project Management

ProjectManagement provides comprehensive options for project management and accounting. Services can be accounted for on an hourly, daily or value basis; and the breakeven of projects can be easily assessed on an ongoing basis. This gives managers planning reliability because the software keeps them on top of business management data of one or more projects.

Human Resources

ProjectManagement offers various Human Resources options to support staff management. Saved business calendars, recorded attendance times and defined employee profiles provide information on the employee's utilization; on the existing company's knowledge and skill-base and its application. This in turn gives managers planning reliability and enables them to assess whether (or when) new projects can be accepted and what the quality will be.

FUNCTIONAL OVERVIEW

Employee Data Management	Resource Pool Management	Attendance Time Recording	Payroll Interface	Inter-Company Invoicing	Work In Progress
<ul style="list-style-type: none"> ▶ New Employee Wizard ▶ Calendars ▶ Skills ▶ Vacation ▶ Human Resources Reports 	<ul style="list-style-type: none"> ▶ Resource Pool ▶ Resource Pool Planning ▶ Resource Pool Report ▶ Planning Confirmation 	<ul style="list-style-type: none"> ▶ Working Times Rules ▶ Time Recording ▶ Attendance Management ▶ Attendance Error List ▶ Basic Settings 	<ul style="list-style-type: none"> ▶ Payroll Types ▶ Export Wizard ▶ Overtime Premium 	<ul style="list-style-type: none"> ▶ Inter-Company Accounting ▶ Accounting Simulator ▶ Accounting Wizard ▶ Distribution List ▶ Cost Rate Wizard 	<ul style="list-style-type: none"> ▶ Assessment Methods ▶ Accounting Matrix Assessment ▶ Assessment Wizard ▶ Assessment Lists

Project Data Management	Acquisition	Project Planning	Purchasing	Time and Material Entry	Travel Expenses
<ul style="list-style-type: none"> ▶ Project Templates ▶ Project Creation Wizard ▶ Phases ▶ Services ▶ Document Management ▶ User-Defined Fields 	<ul style="list-style-type: none"> ▶ Preliminary Projects ▶ Preliminary Project Creation Wizard ▶ Preliminary Planning ▶ Calculation ▶ Transformation Wizard ▶ Sales Development Report 	<ul style="list-style-type: none"> ▶ Planning Dimensions ▶ Standard Planning ▶ Gantt View ▶ Periodic Planning ▶ Planning Transfer Wizard ▶ MS Project Interface ▶ Planning Reports ▶ Management Information 	<ul style="list-style-type: none"> ▶ Purchase Process ▶ Purchase Process Wizard ▶ Quote Request ▶ Purchase Document Entry ▶ Purchase Order Collector ▶ Purchase Process Balance 	<ul style="list-style-type: none"> ▶ Time Sheet Entry ▶ Material Entry ▶ Project Entry ▶ Entry by Manager ▶ Entry Reports ▶ Basic Settings 	<ul style="list-style-type: none"> ▶ Travel Expenses Categories ▶ Travel Expenses Wizard ▶ Travel Expenses Accounting ▶ Invoicing to Customer ▶ Travel Expenses Transfer Wizard ▶ Entry by Accountant ▶ Travel Expenses Report

Approval	Contract Management	Invoicing	Controlling	Web Client	Exchange Server Interface
<ul style="list-style-type: none"> ▶ Service Approval ▶ Material Approval ▶ Travel Expenses Approval ▶ Travel Expenses Approval by Manager ▶ Approval Summary Reports 	<ul style="list-style-type: none"> ▶ Fixed Price Contract ▶ Time and Material Contract ▶ Phases and Milestone Contract ▶ Recurrent Invoicing Contract ▶ Maintenance Contract ▶ Down Payment Invoice ▶ Call-off Contract ▶ Contract Reports 	<ul style="list-style-type: none"> ▶ Standard Invoicing ▶ Contract Collector ▶ Final Invoice for Down Payment Contracts ▶ Invoice Attachments 	<ul style="list-style-type: none"> ▶ Time and Material Transfer Wizard ▶ Project Manager Reports ▶ Manager Reports ▶ Resource Pool Manager Reports ▶ Business Unit Reports ▶ Management Summary Reports ▶ Degree of Completion Reports ▶ Breakeven Analysis 	<ul style="list-style-type: none"> ▶ Time and Material Entry ▶ Travel Expenses Entry ▶ Planning Information ▶ Project Approval ▶ Reminder ▶ Reports ▶ User Settings 	<ul style="list-style-type: none"> ▶ Export of own planning data ▶ Export of planning data of all employees ▶ Synchronization of Outlook calendar and ProjectManagement planning

CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

SAP Business One provides comprehensive sales and CRM functions leading to increased customer loyalty and profitability. Project-Management upgrades these core functions by introducing features and functions required for successful project management.

Tracking Sales Opportunities

Sales Opportunities features allow users to record every sales opportunity from the first phone call to the successful close of a transaction. This key functionality allows users to enter various details concerning the opportunity, including the source, potential, closing date, competitors, and activities. Depending on the sales level, ProjectManagement enables the creation of projects directly from a sales opportunity.

Sales

Quotations can be generated directly from a pre-calculation. When the order has been placed, accounting transactions are created using different contract types (fixed price, milestone, maintenance, down payment etc.).

Business Partner Master Data

All critical information on customers, prospects and suppliers, such as email address, profiles, sales reports or activities with business partners, is recorded. This functionality enables the user direct access to all critical project data concerning the business partner.

The screenshot displays the SAP Business One interface. The main window is titled 'Business Partner Master Data' and shows details for a customer named 'Transamerican Engineering, Inc.' with Code '10000'. The 'General' tab is active, showing fields for Name, Foreign Name, Group, Currency, and WAT Number. Below this, a table lists projects associated with the business partner:

#	Project No.	Matchcode	Business Unit
1	P100010	Project with Phases and phase based invoicing	Construction
2	P100009	Service with Limitation	Planning

A secondary window titled 'Projects Saunders Engineering P100010/2 Project with Phases and phase based invoicing 1' is open, showing a tree view of project data. The 'Basic Settings' tab is active, displaying details for Project No. 'P100010', Project Title 'Project with Phases and phase based invoicing', Matchcode 'Project with Phases and phase based invoicing', Business Unit 'Construction', Project Type 'Customer Project', Project Code 'PC100010', Project Manager 'E001 Manager, Marc', Project Status 'Project in Progress', and Project Start/End '21/11/2008'.

Figure 1: overview of projects with a business partner

Reporting

The user can analyze opportunities according to region, branch, customer or account manager. The reporting features allow users to display forecasts and to show expected revenues per month or quarter.

Campaigns and Prospect's Management

Users can import prospect data and manage sales promotional activities. This functionality supports the addition of prospects to email campaigns and newsletter lists. Prospects or business partners can be contacted directly by phone or by means of email campaigns and the results of each campaign can be tracked.

Web-Based Access

The Web Client allows consultants and service staff members to access all critical customer information irrespective of location and time. No matter what kind of information (e.g. general customer information, project status, sales document or current activity) is required, the Web Client gives employees the information they need.

The screenshot shows a web browser window titled "ProjectManagement Address Master - Windows Internet Explorer". The address bar contains a URL starting with "http://vm_sap2005akt/". The page features a navigation bar with icons for various functions: Time Sheet Entry, Entry of Travel Expenses, Address Master, Project Master, Employee Master, My Target Working Time, and My Period Planning. The main content area is titled "Address Master [Saunders Engineering]" and displays a form for "Transamerican Engineering, Inc." with fields for Matchcode, Account(s), Salutation, Name1, Name2, Name3, Street, Sales Employee, City, Phone, Phone2, Fax, Email, Homepage, Address No., First Contact, and Commands. Below the form is a "Contact Person" table with columns for Title, Profession, Dept./Division, Position, Phone, Fax, Mobile, Email, and Customer Login. The table lists Ben Johnson as CEO with email b.j@trans-engineering.com.

Contact Person	Title	Profession	Dept./Division	Position	Phone	Fax	Mobile	Email	Customer Login
Ben Johnson				CEO				b.j@trans-engineering.com	[New] [Edit]

Figure 2: access to all critical information independent of location and time

ACQUISITION

ProjectManagement's data and functions can already be used in the pre-calculation. The acquisition features allow users to create quotations based on system data (resources, project templates) and to use predefined contracts for calculations (agreements on prices and accounting terms). All this simplifies the planning significantly.

Preliminary Project Planning (Quotations)

Preliminary projects assist users in the project oriented planning process. This method allows the creation and planning of data on phases. The structure of preliminary projects corresponds to the structure of normal projects. Project data includes information on project number, title, business unit, customer etc. At this stage, resources can be taken into account with order probability when calculating the capacity. In addition, the costs for preliminary projects can be recorded.

Transforming Preliminary Projects

A quotation can be easily transformed into an order, i.e. a so-called preliminary project is transformed into a current project. An easy-to-use wizard assists users in creating and transforming preliminary projects.

Calculation

This functionality allows using several versions to calculate a preliminary project. The calculation is mainly used to compare costs with potential revenues of performed services, materials or travel expenses.

Sales Development Report

This function lets users generate a report that shows the notified hours or items required for current projects and the calculated preliminary projects taking into account the order probability. This provides an overview of the employees' utilization and the sales development.

The screenshot displays the 'Preliminary Project Calculations' window for 'Saunders Engineering PP000001 New Hotel'. The main table lists project items with columns for Position (Pos.), Type, Code, Description 1/2, Quantity (Qty.), Unit, Unit Price, and Total. The items are:

Pos.	Type	Code	Description 1/2	Qty.	Unit	Unit Price	Total
1	Service at Cost	CAD Engineering S002	CAD Engineering in days	40.000	d	1,500.00	60,000.00
2	Service at Cost	Construction S003	Construction management in days	180.000	d	1,200.00	216,000.00
3	Travel Allowance	Accommodation Allowance TC005	Accommodation	10.000	*	200.00	2,000.00
				220.000/10...	d/*		278,000.00

Below the table, there is a detailed view for the selected item (S003) with fields for Position Type, Service No., Matchcode, Qty., Unit, Unit Price USD, and Total Price USD. The values shown are: Position Type: Service at Cost; Service No.: S003; Matchcode: Construction; Qty.: 180.000; Unit: d; Unit Price USD: 1,200.00; Total Price USD: 216,000.00. There is also a 'Discount' field with a value of 0.00 %.

Figure 3: Preliminary Project

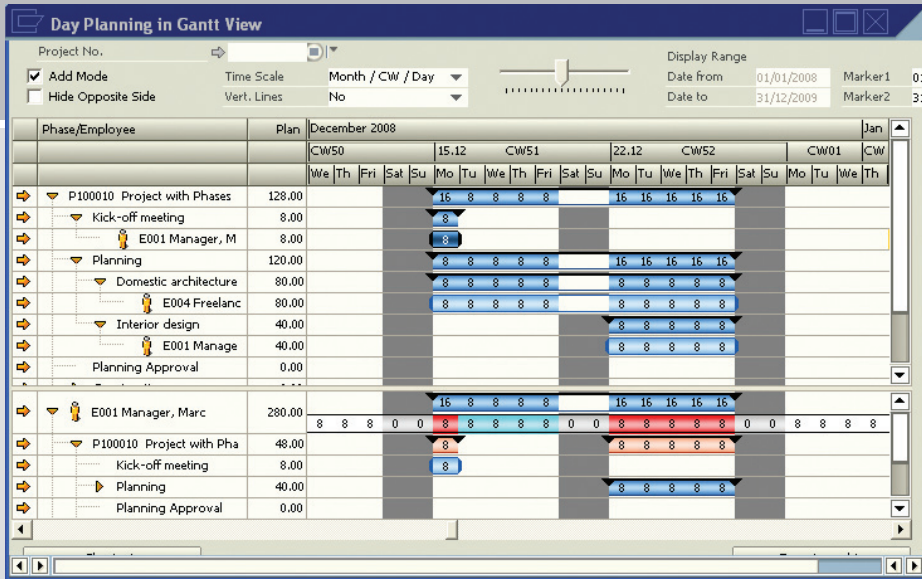


Figure 4: Gantt Planning

PROJECT PLANNING

ProjectManagement enables sophisticated planning options. The system makes a distinction between four planning versions (e.g. preliminary project planning (blocked), preliminary project planning, primary planning and current planning) that can be created by using different methods (Gantt Planning, Standard Planning, Period Planning). Different resources are available for project planning: employees, resource pools, materials or travel expenses. In addition, the user is able to work with hierarchical phase structures, to create an overall planning or a detailed day planning and, depending on his knowledge, to further develop these planning versions.

This allows viewing different project's perspectives: working time, process time, resources, resource pools, project/employee related costs, graphic views or list form etc. The focus is on providing users with a multidimensional view on the project.

Standard Planning

Users can create different process scenarios in the respective planning version, from overall planning to detailed day planning by using different resources, such as employees, resource pools, materials and travel expenses. In addition, costs and revenues with respect to single phases can be planned.

Gantt Planning

The Gantt view is a bar chart that illustrates the project schedule. In addition, the Gantt view establishes direct relation to the planning calendar and represents the selected resource and its availability highlighted in terms of color. Excess planning, for example, is represented by a red bar. The drag & drop feature makes it easy to modify a planning by simply moving and placing information. This allows users at any time to get a general idea of their project and the resource capacity and utilization.

Period Planning

A matrix for period planning is available that enables the user to plan the resources for each month per phase.

Planning Transfer Wizard

The Planning Transfer Wizard allows users to postpone a planning and to transfer a project planning to another phase or resource. Various other aspects can also be changed, for example the copying of planning from one project to another.

MS Project Interface

Are you planning your projects with MS Project? If so an interface enables to synchronize planned data between MS Project and Project Management. In addition, actual data recorded can be transferred to MS Project and newly created processes or milestones can be transferred to the other program.

Planning Reports

An overview of your project is gained by using different reports. For example: **Balance Lists** - compare planned and actual data and calculate the balance; **Project Planning Summary** - shows the planning data of each project phase and sub-phase

RESOURCE PLANNING

The main resource used for planning of service companies is the employee. In addition, ProjectManagement allows planning of materials, G/L accounts and travel expenses.

To simplify project planning and calculation, ProjectManagement supports the creation of resource pools. The employees are pooled on the basis of their ability (skills) to perform particular tasks. Multi-assignment allows distributing the employee's total capacity amongst different resource pools.

Resource Pool Planning

In addition to the direct planning of employees, resource pool planning is possible. Planning data can be transferred from a resource pool to one or more employees during the course of a project.

Planning Confirmation for Employees

Depending on the settings, project managers may be able to plan employees directly. Otherwise they can request a resource (an employee of the pool) and this has to be confirmed by the resource pool manager.

Resource Pool Report

Many reports provide an overview of the resource pools. For example: **Planning Summary** - shows the total number of planned project hours for the selected resource pool; **Team Summary** - shows the planning data assigned to the pool and other planning data of the employees assigned to the resource pool.

Calendars

Calendars play a major role in the resource planning because they form the basis for determining the employee's capacity. Project-Management provides the opportunity to handle different business calendars that include each employee's working hours and holidays. In addition, different work patterns (part time, full time etc.) can be considered in the planning process.

Cost Rates

The employee master data include also the employee's cost rates that are used to calculate the project's planned costs. Only authorized users are able to view the different cost rates. A time control provides for the automatic modification of data (e.g. if the cost rate changes on a certain date, the system automatically utilizes the new cost rate).

Pool (Standard Pool) Planning							Period		Total	
Start	End	Project	Phase	Activity	Plan	Committed	Plan	Committed		
03/11/200	31/12/200	P100005 Construction Project San Francisco			184.00	0.00	344.00	0.00		
15/12/200	02/01/200	P100008 Multiple Services / multiple Employees			104.00	0.00	120.00	0.00		
15/12/200	02/01/200	P100014 Fixed Price Project			104.00	0.00	120.00	0.00		
					392.00	0.00	584.00	0.00		

Employees assigned to the pool							Period		Total		
EmplNo	Matchcode	Prio	Plannable	Pool Fraction	Hours in Pool	Available in Pool	Already Plann...	Available	Available in Pool	Already Plann...	Available
E004	Freelancer, Fred	1	184.00	20.00 %	36.80	8.00	144.00	40.00	6.40	152.00	32.00
E001	Manager, Marc	1	184.00	50.00 %	92.00	-24.00	232.00	-48.00	-32.00	248.00	-64.00
E003	Projectmanager, Paul	1	184.00	50.00 %	92.00	92.00	0.00	184.00	92.00	0.00	184.00
					220.80	76.00	376.00	176.00	66.40	400.00	152.00

Figure 5: planning employees of a resource pool

ACTUAL DATA RECORDING

Recording the provision of services is crucial to effective project management. The employees that are registered as user are allowed to enter their own working times (services). Invoicing is based on the recorded services but the number of chargeable units can be changed by the project manager or another authorized person.

Time Sheet Entry

The Service Report shows the hours that were recorded by the respective employee. This provides information on the number of recorded hours, overtime and planned working time.

Material Entry

This function allows the user to enter materials required for a project.

Project Entry

Working hours can also be recorded directly for a particular project.

This functionality is particularly useful if the hours of several employees have to be recorded for the same project.

Entry by Manager

Normally, working hours/project times are recorded by the employees carrying out the service. However, it is also possible to authorize managers to record the hours of defined employee groups. Depending on the access rights, the manager can view, edit or change the times of the respective employee. This is useful if you want to record the hours of employees who record their hours differently because they do not have access to a computer.

Reports

Multiple entry journals are available. For example: **Service Report** - daily, weekly or monthly report provided for each employee; **Time Sheet Entry Journal** - provides entry journals for each employee in different forms and on the basis of different selection criteria.

The screenshot displays the 'Time Sheet Entry' window for employee E001 in December 2008. The interface includes a header with employee and period information, a main data table, and a summary section at the bottom.

Tr	Day	Date	Time	Project / BU	Phase	Service	Activity	Hours	Total	Inv.		
	Thu	12/04/2008										
	Fri	12/05/2008		P100011 Service with Limitation		CAD engineering		8.00	8.00	8.00		
	Mon	12/08/2008										
	Mon	12/08/2008		Trip Kick off Start 12/08/2008 7:00:00 AM End 12/08/2008 8:00:00 PM								
	Tue	12/09/2008		P100012 Project with Phases		Kick Off	Copies of drawing 1009 (*)	A/P Inv	50.00	50.00		
	Wed	12/10/2008		P100012 Project with Phases	general	Project management		8.00	8.00	8.00		
	Thu	12/11/2008		P100012 Project with Phases	general	Project management		8.00	8.00	8.00		
	Fri	12/12/2008		P100012 Project with Phases	general	Project management		8.00	8.00	8.00		
	Mon	12/15/2008		P100012 Project with Phases	general	Project management		8.00	8.00	8.00		
	Mon	12/15/2008	9:00	P100011 Service with Limitation				8.00				
	Tue	12/16/2008										
	Tue	12/16/2008	9:00	P100011 Service with Limitation				8.00				
	Wed	12/17/2008										
	Wed	12/17/2008	9:00	P100011 Service with Limitation				8.00				
	Thu	12/18/2008										
	Thu	12/18/2008	9:00	P100011 Service with Limitation				8.00				
	Fri	12/19/2008										
	Fri	12/19/2008	9:00	P100011 Service with Limitation				8.00				
								184.00	Act. Hrs:	40.00 40.00		

Summary section (Time Sheet Entry):

Date: 12/10/2008 | Project: P100012 | Phase: general | Service: Project manager | Activity: Project management | Hours: 8.00

Date to: 12/10/2008 | Matchcode Project: P100012 Project with Phases | Contract Position: Project management | Invoiced: 8.00

Footer: 12/15/2008 12/15/2008 Manager | Memo | Record | Options

Figure 6: employee's time sheet

PURCHASING

ProjectManagement allows recording, managing and maintaining purchase activities. The system supports the entire purchase process, from the quote request sent to different suppliers to the goods receipt. It enables further the creation of different purchase orders for a supplier and the entry of incoming delivery notes/AP invoices. Materials are recorded against the project in order to be able to pass on the costs to the customer.

When goods have been purchased, a balance statistic can be created showing the ratio of the needed quantity compared with the ordered and delivered quantity.

Purchase processes can even be activated and accounted for by period or phase.

One highlight of the purchasing functionality is the handling of freelancers. If freelancers have already recorded their times in the system, the times can be checked when reviewing the AP invoice. Hours in excess of the invoiced time are posted automatically to the project.

ProjectManagement allows you to define approval procedures. You can authorize employees to create documents with values that have been defined before. Documents which exceed defined values have to be approved by an authorized employee.

Date	Qty.	Price	Date	Qty.	Price	Date	Qty.	Price	Date	Qty.	Price
1 Copies of drawing											
12/11/2008	100.00	50.00	12/11/2008	50.00	50.00	12/11/2008	50.00	50.00	12/11/2008	50.00	50.00
			12/11/2008	50.00	50.00						
						12/11/2008	50.00	50.00			
									12/11/2008	50.00	50.00
											100.00
											50.00
											50.00
											50.00

Figure 7: balance statistic

WEB CLIENT

The screenshot displays the ProjectMaster web client interface within a Windows Internet Explorer browser window. The browser address bar shows the URL: [http://vm_sap2005akt/mpnet/\(X\(1\)S\(xmkio4znjccfj55jncxn055\)\)/mariprojekt.aspx?I=010F606312050D707](http://vm_sap2005akt/mpnet/(X(1)S(xmkio4znjccfj55jncxn055))/mariprojekt.aspx?I=010F606312050D707). The page title is "ProjectMaster".

The interface features a navigation bar with icons for "Time Sheet Entry", "Entry of Travel Expenses", "Address Master", "Project Master", "Employee Master", "My Target Working Time", and "My Period Planning". The "Project Master" section is active, displaying project details for project P100010.

Project Information:

Project No.:	P100010	Project Manager:	E001 Manager, Marc
Project Title:	Project with Phases and phase based invoicing	2nd Project Manager:	
Matchcode:	Project with Phases and phase based invoicing	Start Date:	11/21/2008
Business Unit:	Construction	End Date:	
Project Type:	Customer Project	Project Entries:	Entry Cleared
Project Code:	PC100010	Project Status:	Project in Progress
		Commands:	[Search] [Reminder]

Below the project information, there are tabs for "Breakeven Analysis", "Contracts", "Actual Totals", "Planning Totals", and "Folder". The "Phases" tab is selected, showing a list of project phases with their status:

Pos.	Phase	Status
1.	Kick-off meeting	<input checked="" type="checkbox"/>
2.	Planning	<input checked="" type="checkbox"/>
3.	Domestic architecture	<input checked="" type="checkbox"/>
4.	Interior design	<input checked="" type="checkbox"/>
5.	Planning Approval	<input checked="" type="checkbox"/>
6.	Construction	<input checked="" type="checkbox"/>
7.	Building shell	<input checked="" type="checkbox"/>
8.	Completion of the interior	<input checked="" type="checkbox"/>
9.	Construction Approval	<input checked="" type="checkbox"/>
10.	Warranty	<input checked="" type="checkbox"/>

The status bar at the bottom indicates the date and time: 12/10/2008 08:10:10. The user is identified as "User: Manager".

Figure 8: project information and phase structure

The Web Client is a comprehensive information tool and helps the user to

- ▶ record, maintain and provide customer, employee and project data (master data),
- ▶ record and manage working hours,
- ▶ approve projects,
- ▶ record travel expenses and
- ▶ display reports and analyses.

Recorded data can be accessed directly independent of location and time.

The Web Client provides an overview of all your projects, project codes or employees. Depending on the user's access rights, the following balance lists are available:

- ▶ Balance List: Hours
- ▶ Balance List: Days
- ▶ Balance List: Costs
- ▶ Balance List: Revenues
- ▶ Balance List: Hours (Project Manager)
- ▶ Balance List: Costs (Project Manager)
- ▶ Balance List: Revenues (Project Manager)

TRAVEL MANAGEMENT

All self-service functions of travel management are available in the Web Client and in the standard system. Travel expenses are assigned directly to an internal project or a customer project, which means that all costs are available in the system and no expenses are overlooked.

The user can define different travel categories (e.g. mileage, accommodation, allowances etc.) to manage the expenses entry. In addition, internal G/L accounts, tax codes and sales positions can be assigned to these categories.

Travel Expenses Entry

Travel expenses can be recorded and assigned to a particular project phase. Amounts can be entered in all currencies.

Travel Expenses Accounting

The user can view all trips that have not been settled. He can select one or all trips and can account for the expenses at the touch of a button. A travel expenses statement is created automatically with an accounting document number.

Invoicing to Customer

If agreed by contract, recorded travel expenses can be charged directly to the customer.

Posting Travel Expenses

When approval has been received, the user can select the employees' accounting statements generated by the system in order to post the expenses to the corresponding G/L accounts.

Travel Expenses Entry by Accountant

Normally, the employee's manager or the accountants are authorized to change incorrect or incomplete entries by the employees or to enter missing travel expenses.

Travel Management Reporting

The comprehensive travel management reporting options make relevant information readily available. Reports that show, for example, travel expenses by project, employee or travel category etc. are visible at the touch of a button.

The screenshot shows the 'Travel Expenses Accounting Wizard' interface. The 'Billing' field is set to 100000. The 'Posting Period' is set to November 2008. The 'Employee' field is set to E001 (Manager, Marc), the 'Creditor' field is set to 70002 (Manager, Marc), and the 'Credit Card Creditor' field is set to 70003 (Marc Manager Credit Card). The 'OI-No.' field is set to TX100000. The 'Valid' field is set to Valid, and the 'Posted' field is set to Not Posted. The 'Entered on' and 'Entered by' fields are empty. A 'Generate Travel Records' button is located below the form fields.

The 'Accounting Records' section displays a table with the following data:

Company	Debit	Credit	Profit Center	Project Code	Doc.No.	TC	Net	Gross	C...	OI	Description
Trip: Training with multiple Participants 11/17/2008 8:00:00 AM 11/17/2008 10:00:00 PM E001/Manager, Marc											
Travel Category: Accommodation											
Saunders Engineeri	_SYS000	70002	200	PC100018	100000		300.00	300.00	USD	TX100000	Accommoda
Trip: Training with multiple Participants 11/21/2008 8:00:00 AM 11/21/2008 10:00:00 PM E001/Manager, Marc											
Travel Category: Accommodation											
Saunders Engineeri	_SYS000	70002	200	PC100018	100000		300.00	300.00	USD	TX100000	Accommoda

At the bottom of the window, the 'Account Type' is set to TE Employee Creditor and the 'Description' is set to Manager, Marc. There are buttons for 'Save Entries', 'Transfer Entries', and 'Print...'. The 'Entries' field shows 0 and the 'Error (Financial Acc)' field shows 0.

Figure 9: travel expenses accounting wizard

PROJECT APPROVAL

Approval is the prerequisite for the accounting of a project. The authorized person approves entire projects or individual hours, materials or travel expenses and changes the number of chargeable activity units if necessary. When data has been reviewed and approval received, services can be charged to the customer.

Project Approval

The user can view all hours recorded by the employees. Before the hours are charged to the customer, the number of chargeable hours can be changed. The Approval module allows authorized users access to all projects which they are allowed to approve based on preset authorization levels.

Material Approval

The approval form displays also recorded materials which have to be approved for invoicing to the customer. Also the number of chargeable materials can be modified prior to approval.

Travel Expenses Approval

Travel expenses can only be approved if they have been accounted for by the employee. Depending on authorization, travel expenses are visible on the revenue side of your project.

Travel Expenses Approval by Manager

Managers can check the travel expenses of their employees and can notify the accounting department via email on the approval.

Approval Summary Report

This report shows the hours according to different criteria, i.e. the hours that have been approved, the hours that have been approved but not yet invoiced or the hours that still have to be approved.

The screenshot shows the 'Project Approval' window. It features a tree view on the left with three levels: Project (P100005), Employee (E001), and Period (200801). The main area contains a table of entries with the following data:

Entry	Select	Matchcode	Phase	Activity	Me...	Qty.	Invoiced	Revenues	Approval
P100005	▶	Construction Project San Fran				40.00	40.00	4,800.00	5 Open
P100011	▶	Project with Items				88.00	88.00	11,440.00	11 Open
P100010	▶	Project with Phases and phas				40.00	40.00	6,500.00	5 Open
E001	▶	Manager, Marc				40.00	40.00	6,500.00	5 Open
200801	▶	November 2008				40.00	40.00	6,500.00	5 Open
		11/ Project Management	Kick-off meeting			8.00	8.00	1,300.00	1 Open
		11/ Project Management	Domestic architecture			8.00	8.00	1,300.00	1 Open
		11/ Project Management	Domestic architecture			8.00	8.00	1,300.00	1 Open
		11/ Project Management	Domestic architecture			8.00	8.00	1,300.00	1 Open
		11/ Project Management	Domestic architecture			8.00	8.00	1,300.00	1 Open
P100007	▶	Service at Cost				238.16	238.16	33,264.00	29 Open
P100009	▶	Service with Limitation				24.00	24.00	3,120.00	3 Open
P100018	▶	Training with multiple Particip				80.00	80.00	8,800.00	10 Open

Figure 10: project approval form

CONTRACT MANAGEMENT

Contracts form the basis for the project accounting. They contain all critical information on the defined accounting conditions and on the prices and accounting units for different services, materials and travel expenses.

Contract Types

ProjectManagement provides different contract types, such as Fixed Price Contract, Service at Cost Contract, Phases and Milestone Contract, Recurrent Invoicing Contract, Maintenance Contracts, Down Payment Contracts, Call-Off Contracts etc.

Contract Reports

A variety of reports gives you an immediate overview of costs and revenues. For example:

Contract Totals Report - shows all services and materials for a particular contract and provides an actual/target comparison on a value and a quantity basis. In addition, the gross revenue can be displayed.

Residual Volume Report – shows the contract volume not charged as percentage or on a value basis

ACCOUNTING

Many accounting options based on the project contract are available. Users can set optional filters for employee, phase or service data. Depending on the project contract, the system represents approved data or shows data based on due date or milestones achieved. If the print preview is correct, the invoice can be printed and posted automatically to the financial system.

Contract Collector

A wizard assists in generating invoices by making invoice proposals for all contracts according to selected criteria, such as due date, period, service date, milestone etc. The user can select several contracts and he can batch print the invoices.

Contract No.	Matchcode	Customer	REF. No.	Project	Qty.	Price	Total	Down Payment
▶ C000002	Service at co	10001 Larr		P100007			1,080.00	0.00
▶ C000006	Project with	10001 Larr		P100011			10,000.00	0.00
▶ C000009	Fixed Price P	10001 Larr		P100014			700,000.00	0.00
▼ C000011	Recurrent inv	10002 Prec		P100016			7,692.30	0.00
1.a	Building Superv				1.00	3,846.15	3,846.15	
1.b	Building Superv				1.00	3,846.15	3,846.15	
▶ C000012	Project with	10003 Beac		P100017			60,000.00	0.00
							778,772.30	0.00

Final Account for Down Payment Contracts

When down payment has been agreed, a final invoice can be generated. If the customer has made one or more down payments, these down payments reduce the total amount of the final account.

Invoice Attachment

In order to provide the customer with information on the rendered services and the used materials, the user can print service reports, such as activity reports, phase reports or daily reports which can be attached to the invoice.

Intra-Company and Inter-Company Distribution

ProjectManagement enables intra-company and inter-company distribution. Services or travel expenses can be distributed between profit centers or between branches or branch offices of a group of companies or a holding company. This function is used, for example, if employees belong to different business units or if employees of different branch offices work on the same project.

Figure 11: the contract collector allows printing one or more invoices

CONTROLLING

Many reports support users in controlling their business and in monitoring the development of business units and single projects. The system provides info screens with data that is only visible on the screen and analyses that are used for printing and data export.

The following info screens are available:

- ▶ Project/Employee Summary
- ▶ Project Totals, Employee Totals etc.
- ▶ Project Information
- ▶ Info Screen Management
- ▶ Breakeven Analysis

The following analyses are available:

- ▶ Balance Lists
- ▶ Journals/Reports
- ▶ Project Report Financial Accounting
- ▶ Service Reports.

Management Information

Many management reports provide top down views of all projects, i.e. all companies of a group, all business units in a company and all projects in a business unit. You can create your own analysis trees for more analyses that show, for example, data by region (e.g. EMEA, America), by countries (e.g. Germany, Spain, UK) and by cities within the same countries. In addition, filter options and the option of creating additional columns in reports gives users flexibility in creating project views.

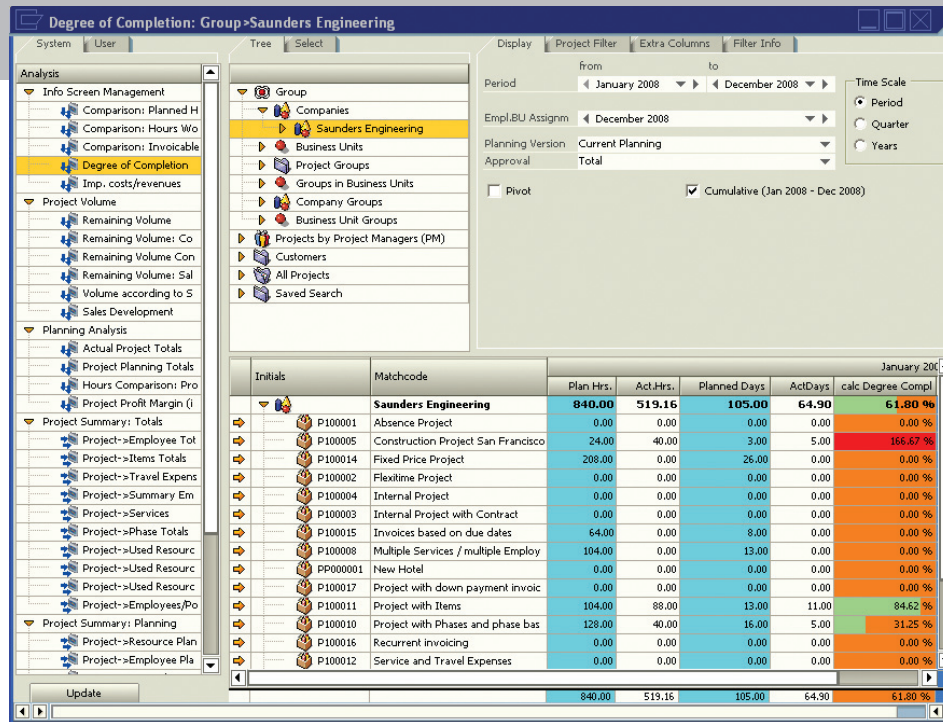


Figure 12: Degree of Completion

The following is a description of a selection of predefined reports:

Comparison Planned/Actual Hours

This report shows the planned and actual hours, including the difference as percentage and on a value basis.

Residual Volume

This report shows the residual contract volume of all project contracts and the number of contracts that have been settled, not settled or not yet approved.

Project/Employee Totals

This report shows the actual and chargeable hours, the costs and revenues and the gross revenue of a project.

Degree of Completion

This report shows the calculated degree of completion based on planned and actual hours. If required, the subjective degree of completion can be changed manually. This overview is available in the management summary reports and represents top down views of the available analysis trees.

Breakeven Analysis

Different breakeven analyses are provided that can be customized by the user. In addition to imputed costs deriving from time and material entry, the real costs and revenues based on financial accounting are provided. Furthermore, total lines and formula are available to the user.

REPORTING

Powerful Reports

The Crystal Reports® report generator is integrated in ProjectManagement. Reports can be modified or created to help users make smart business decisions that can lead to increased profitability. Many predefined printable reports are available. In addition, users are able to create own reports that differ from those that come as standard, e.g. reports with embedded graphics.

All reports are accessible instantly with the Web Client via the Internet browser. Furthermore, users can export any reports to Microsoft Excel.

ProjectManagement provides the following kind of reports:

System Reports

System reports are part of the program and can only be changed by software engineers.

User Reports

User reports are system reports modified with Crystal Reports by the user or a system administrator. In addition to system reports, these reports are available for printing. System reports can be replaced by user reports depending on authorization level.

User-Defined Reports

In addition to user and system reports, ProjectManagement supports the creation of reports without defaults. These reports can be made available to users in the main menu of the Web Client.

Phase	Employee	Period	Plan Hrs	Plan. Costs	Act. Hrs	Imp. Costs
Kick-off meeting	Marc Manager	2008011	0.00	0.00	8.00	760.00
	Marc Manager	2008012	8.00	760.00	0.00	0.00
Phase Total			8.00	760.00	8.00	760.00
Planning	<empty>	0	120.00	11,400.00	32.00	3,040.00
	Phase Total			120.00	11,400.00	32.00
Domestic architecture	Marc Manager	2008011	0.00	0.00	32.00	3,040.00
	Fred Freelancer	2008012	80.00	7,600.00	0.00	0.00
Phase Total			80.00	7,600.00	32.00	3,040.00
Interior design	Marc Manager	2008012	40.00	3,800.00	0.00	0.00
	Phase Total			40.00	3,800.00	0.00
Planning Approval	<empty>	0	0.00	0.00	0.00	0.00
	Phase Total			0.00	0.00	0.00
Construction	<empty>	0	0.00	0.00	0.00	0.00
	Phase Total			0.00	0.00	0.00
Building shell	<empty>	0	0.00	0.00	0.00	0.00
	Phase Total			0.00	0.00	0.00
Completion of the interior	<empty>	0	0.00	0.00	0.00	0.00
	Phase Total			0.00	0.00	0.00

Figure 13: Project Phase Report

SYSTEM ADAPTATION

Solution Configuration

ProjectManagement provides comprehensive options to easily adapt the solution to your individual needs.

Formatting

You can define the format of key fields used in the master data, such as employee number, project number etc.

Time and Material Entry

The basic settings of the time and material entry allow you to define whether hours worked by your employees are to be recorded with or without the exact time. In addition, you can define the values for the conversion of hours into days.

Groups

Groups form the basis for analyses and summaries. The definition of groups allows you to define analysis criteria that meet your individual needs.

Folders

Folders enable you to save documents and to structure data, such as address, employee, project, contract, material or service data. They include configurable folder indexes.

User-Defined Fields

Users can define their own fields for master data objects. Individual fields can be defined for each object. All definitions are made in the administrator of ProjectManagement. This enables you to record and manage information specific to your different business activities.

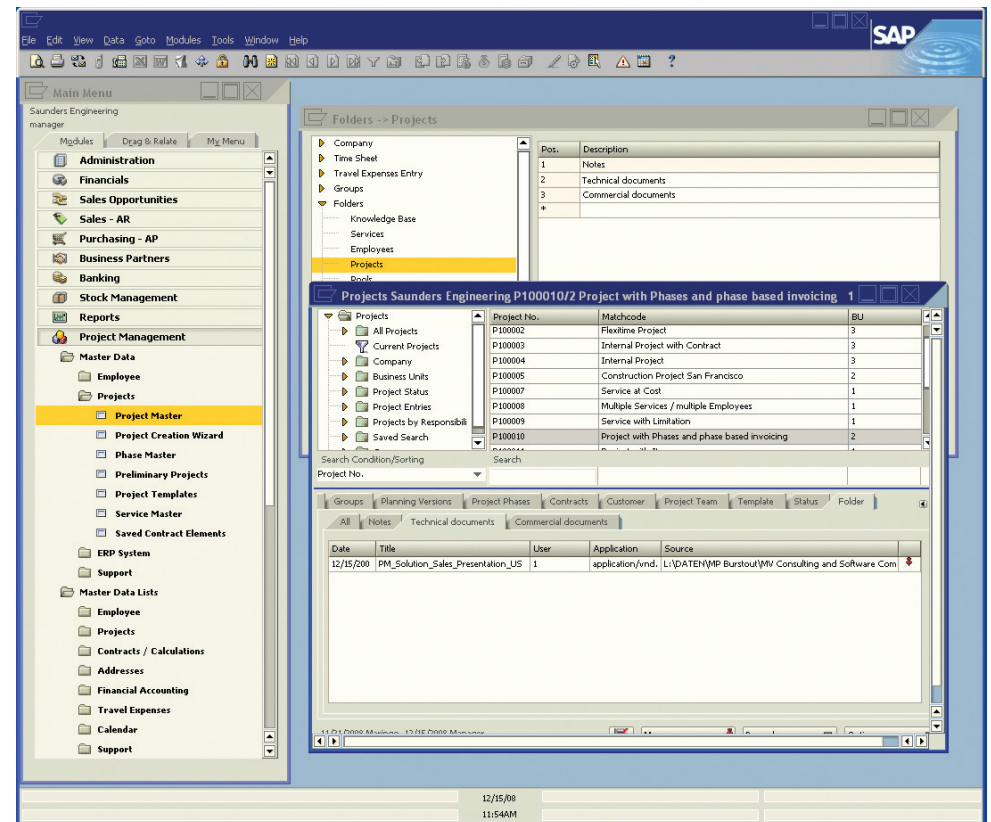


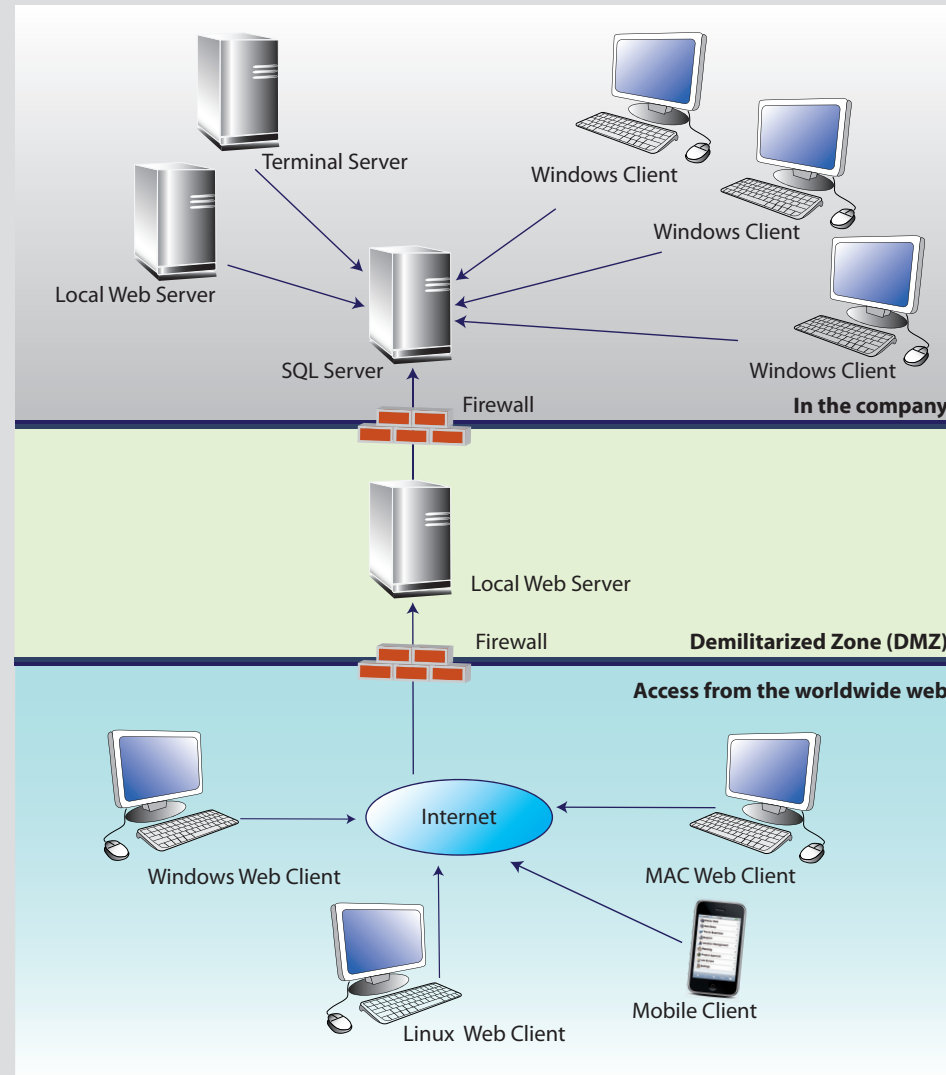
Figure 14: user-defined settings – here: creating new indexes in the Project folder

ROLE-BASED ACCESS RIGHTS

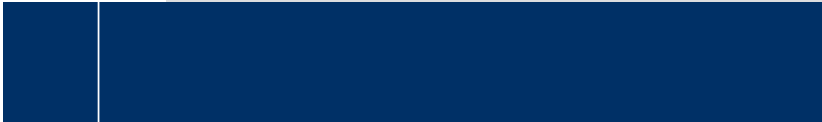
Keeping data centrally could create risks because not all users of the system should have access to data or should be able to edit data. Pre-defined authorization limits ensure that each user only gains access to data they need.

ProjectManagement includes a sophisticated access right system which can be adapted to the individual needs of your business. Access rights are assigned on the basis of the employees' roles within the company (e.g. Administration, Management, and Project Management). A project manager requires different program functions (e.g. Project Planning) to a managing director (e.g. Breakeven Analysis) while users often enter only their working times and travel expenses.

SOFTWARE ARCHITECTURE



Database Server	
Operating System	Microsoft Windows Server 2003, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows Server 2003 R2, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows Server 2008, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows Server 2008 R2, Standard 64 Bit, Enterprise 64 Bit more systems see SAP Business One
CPU	3 - 20 Users: 1x Intel Pentium IV 21 - 75 Users: 2x Intel Pentium IV 75+ Users: 4x Intel Pentium IV
RAM	3 - 10 Users: 2 GB; more than 10 Users: 2 GB + 64 MB per user
Free Hard Disk Storage Unit	MS SQL Server - system partition 1 GB; data partition 10 GB
Database	Microsoft Windows SQL Server 2005, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows SQL Server 2008, Standard 32/64 Bit, Enterprise 32/64 Bit
Software	Microsoft IE 6.0 SP1 or higher; Microsoft .Net Framework 3.5
Workstation	
Operating System	Microsoft Windows XP Professional 32 Bit Microsoft Windows Vista, 32/64 Bit, Business, Enterprise & Ultimate Edition Microsoft Windows 7, 32/64 Bit, Business, Enterprise & Ultimate Edition
CPU	1x Intel Pentium IV or higher
RAM	1 GB + 60 – 80 MB per additional AddOn, running on the workstation, plus 120 – 140 MB per PM
Free Hard Disk Storage Unit	2 GB
Graphic	1024 x 768 mit 24 Bit colours or higher
Software	Microsoft .Net Framework 3.5
Web Server	
Operating System	Microsoft Windows Server 2003, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows Server 2003 R2, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows Server 2008, Standard 32/64 Bit, Enterprise 32/64 Bit Microsoft Windows Server 2008 R2, Standard 64 Bit, Enterprise 64 Bit
CPU	1x Intel Pentium or higher
RAM	2 GB or higher
Free Hard Disk Storage Unit	2 GB
Software	Microsoft Internet Information Server 6.0 SP1 or higher; in 32 bit mode, Microsoft .Net Framework 3.5



FURTHER INFORMATION

ProjectManagement for engineering companies has been specifically designed for small and midsize businesses. It's an integrated management solution for project planning and accounting. Project-Management is available in different languages and in many countries.

For more information, visit

www.sap.com/solutions/sme/businessone or

www.maringo-usa.com/projectmanagement



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