Lecture

SAP Mobile Technologies

Hasso-Plattner-Institute at University of Potsdam, June-28, 2003

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Product Manager
Mobile Technology
SAP AG

THE BEST-RUN BUSINESSES RUN SAP

Agenda

- Overview
  - mySAP Mobile Business Vision
  - Online Integration
  - SAP Mobile Infrastructure
  - SAP Mobile Application Studio
  - CRM Middleware Technology
- Examples
  - Offline Laptop
  - Offline Handheld
  - Online Handheld
- Special Features
  - SAP on Tablet PC
  - SAP CRM PDA Companion
- Unification with SAP NetWeaver and Web Dynpro

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  - Offline Handheld
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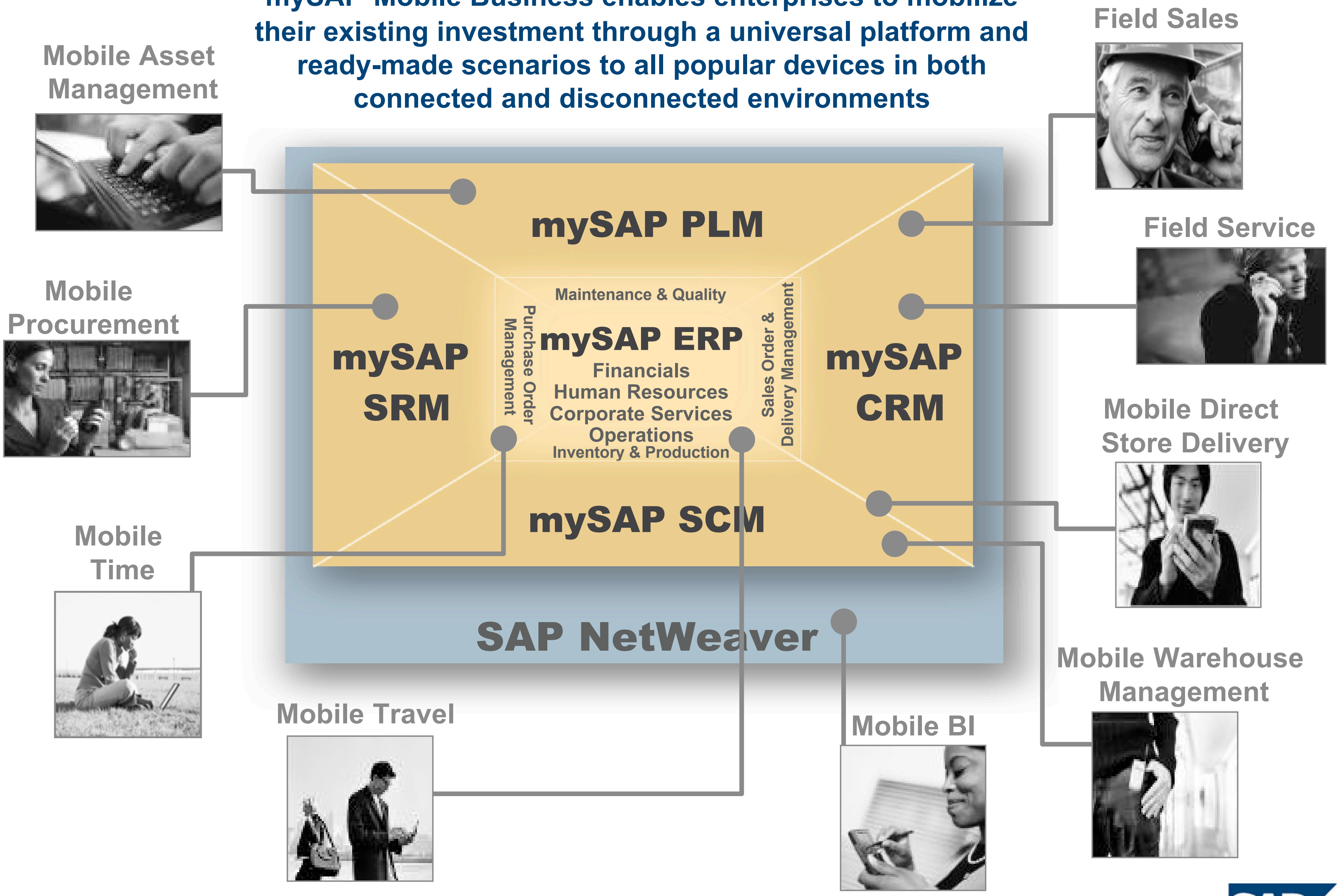
mySAP Mobile Business

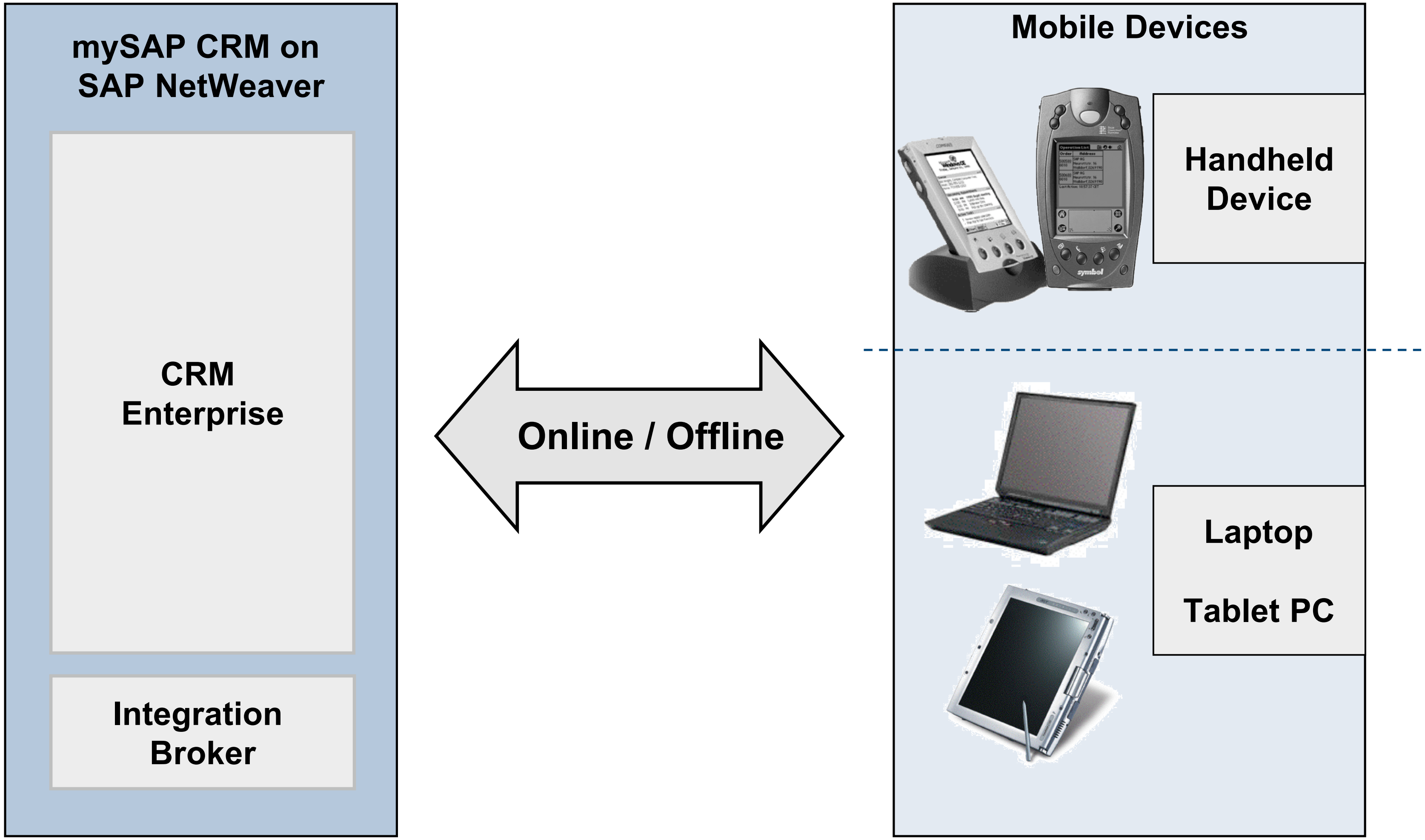
Business in Motion

mySAP Mobile Business enables enterprises to mobilize their existing investment through a universal platform and ready-made scenarios to all popular devices in both connected and disconnected environments


Mobile Asset Management
Field Sales
Field Service
Mobile Procurement
Mobile Direct Store Delivery
Mobile Time
Mobile Warehouse Management
Mobile Travel
Mobile BI
mySAP PLM
mySAP SRM
mySAP CRM
mySAP SCM
Maintenance & Quality
Purchase Order Management
Sales Order & Delivery Management
mySAP ERP
Financials
Human Resources
Corporate Services
Operations
Inventory & Production
SAP NetWeaver

Example: mySAP CRM Mobile Solutions

…to enable users to work anytime and anywhere with all popular devices!



mySAP CRM on SAP NetWeaver

CRM Enterprise

Integration Broker

Online / Offline

Mobile Devices

Handheld Device

Laptop

Tablet PC

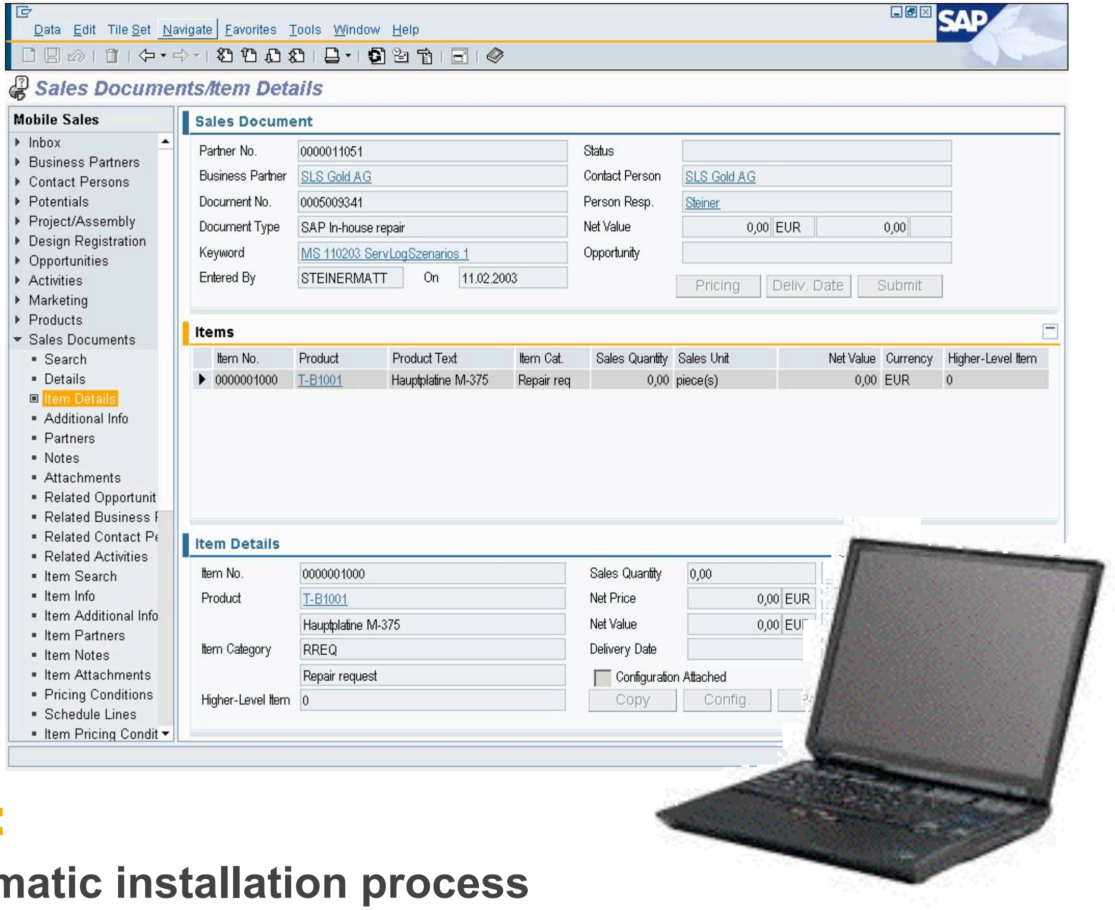
mySAP CRM for Laptops

Offline Operation

- Mobile Client application with separate database on the laptop
- Workgroup Solution
- Groupware Integration
- Local Pricing and Configuration Engine

Data Synchronization with CRM Middleware

- Filtered and unfiltered replication
- Dependencies between objects
- Territory Management
- Realignment



Data Edit Tile Set Navigate Favorites Tools Window Help
SAP
Sales Documents/Item Details
Mobile Sales
Inbox
Business Partners
Contact Persons
Potentials
Project/Assembly
Design Registration
Opportunities
Activities
Marketing
Products
Sales Documents
Search
Details
Item Details
Additional Info
Partners
Notes
Attachments
Related Opportunit
Related Business I
Related Contact Pe
Related Activities
Item Search
Item Info
Item Additional Info
Item Partners
Item Notes
Item Attachments
Pricing Conditions
Schedule Lines
Item Pricing Condit
Pricing
Deliv. Date
Submit
Copy
Config.

Sales Document

Partner No. 0000011051
Business Partner SLS Gold AG
Document No. 0005009341
Document Type SAP In-house repair
Keyword MS 110203 ServLogSzenarios 1
Entered By STEINERMATT On 11.02.2003
Status
Contact Person SLS Gold AG
Person Resp. Steiner
Net Value 0,00 EUR 0,00
Opportunity

Items

Item No.	Product	Product Text	Item Cat.	Sales Quantity	Sales Unit	Net Value	Currency	Higher-Level Item
0000001000	T-B1001	Hauptplatine M-375	Repair req	0,00	piece(s)	0,00	EUR	0

Item Details

Item No. 0000001000
Product T-B1001
Hauptplatine M-375
Item Category RREQ
Repair request
Higher-Level Item 0
Sales Quantity 0,00
Net Price 0,00 EUR
Net Value 0,00 EUR
Delivery Date
☐ Configuration Attached

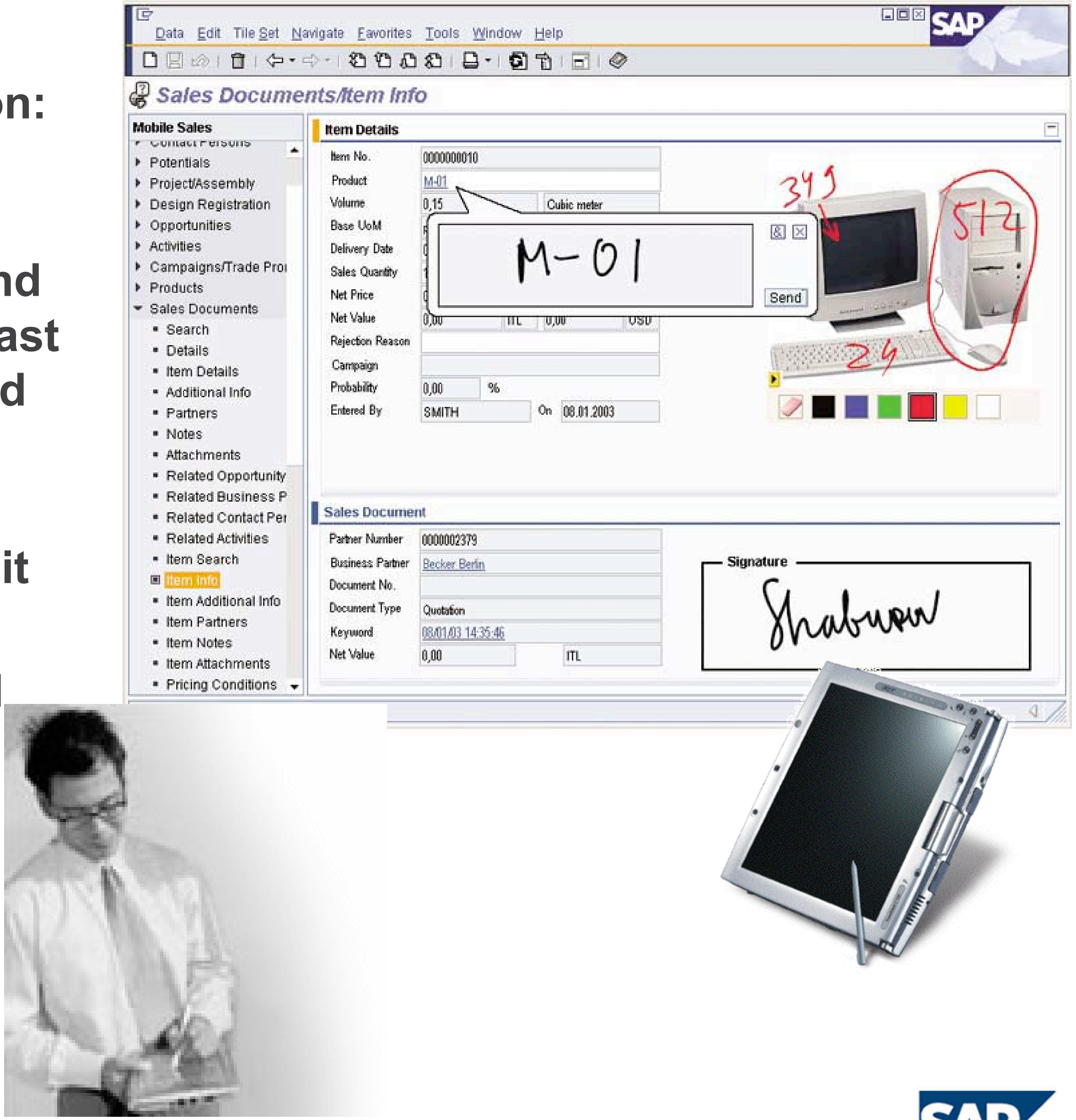
Solution Management

- Fast Deployment with automatic installation process
- Backup and Recovery

mySAP CRM for Tablet PC

Ease-of-use

- Handwriting recognition: writing, drawing and erasing like on paper
- Combining ink input and keyboard support for fast and easy data input and navigation
- Changing Screen orientation from portrait to landscape mode
- Speech navigation and control


Data
Edit
Tile Set
Navigate
Favorites
Tools
Window
Help
SAP
Sales Documents/Item Info
Mobile Sales
Contact Persons
Potentials
Project/Assembly
Design Registration
Opportunities
Activities
Campaigns/Trade Pro
Products
Sales Documents
Search
Details
Item Details
Additional Info
Partners
Notes
Attachments
Related Opportunity
Related Business P
Related Contact Per
Related Activities
Item Search
Item Info
Item Additional Info
Item Partners
Item Notes
Item Attachments
Pricing Conditions
Send
349
512
24

Item Details

Item No. 0000000010

Product M-01

Volume 0,15 Cubic meter

Base UoM

Delivery Date

Sales Quantity

Net Price

Net Value 0,00 ITL 0,00 USD

Rejection Reason

Campaign

Probability 0,00 %

Entered By SMITH On 08.01.2003

M-01

Sales Document

Partner Number 0000002379

Business Partner Becker Berlin

Document No.

Document Type Quotation

Keyword 08.01.03 14:35:46

Net Value 0,00 ITL

Signature

THE BEST-RUN BUSINESSES RUN SAP

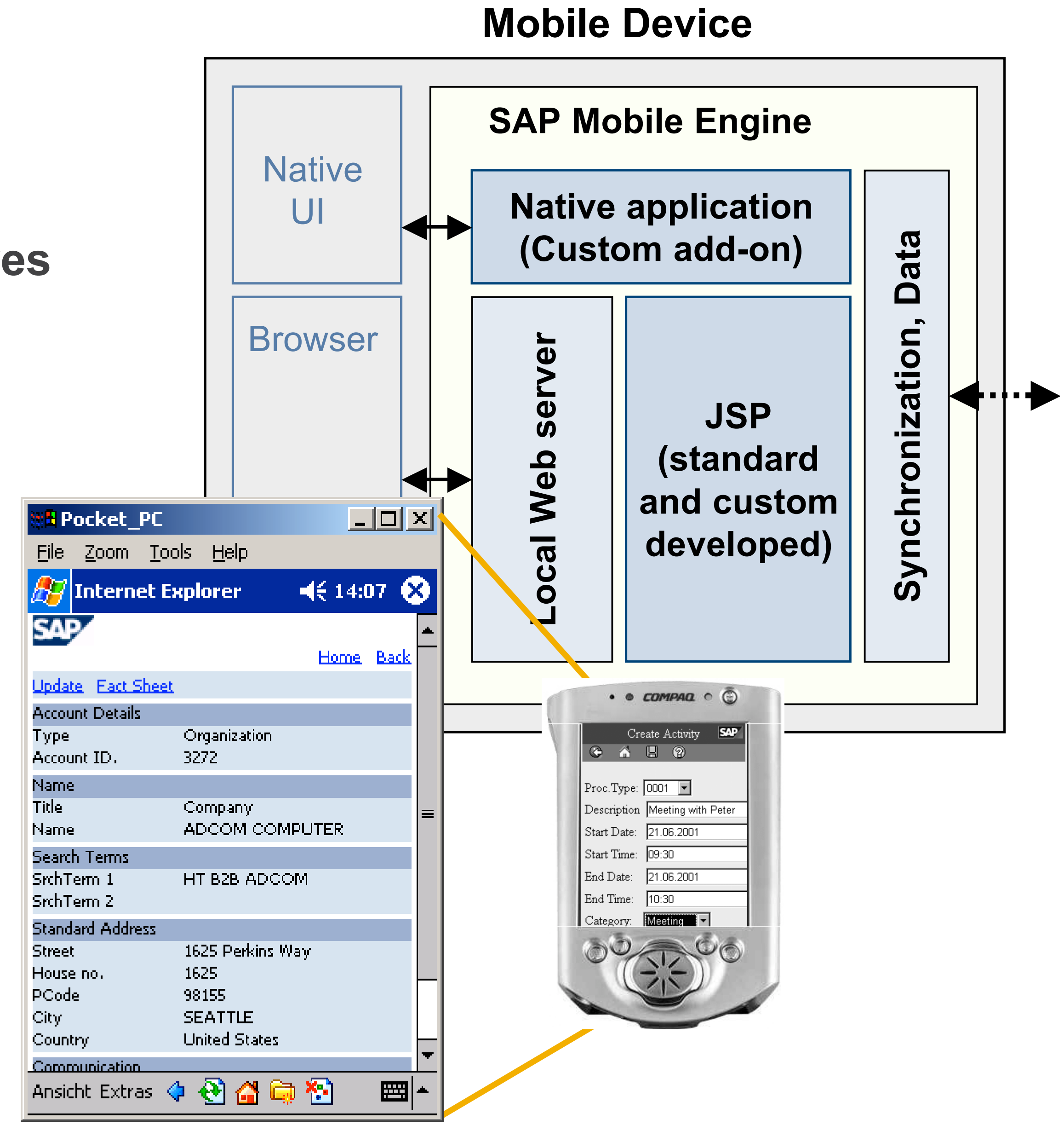
mySAP CRM Handheld Solution

Offline Operation

- JSP based mobile client applications for sales and service representatives on the handheld
- Replication of relevant business data to the user`s handheld
- Territory Management

Based on SAP Mobile Engine

- Platform Pocket PC
- Synchronization Service
- Deployment with automatic installation process



Mobile Device

Native UI

Browser

SAP Mobile Engine

Native application (Custom add-on)

Local Web server

JSP (standard and custom developed)

Synchronization, Data

Pocket_PC
File Zoom Tools Help
Internet Explorer
14:07
SAP
Home Back
Update Fact Sheet
Ansicht Extras

Account Details
Type Organization
Account ID. 3272

Name
Title Company
Name ADCOM COMPUTER

Search Terms
SrchTerm 1 HT B2B ADCOM
SrchTerm 2

Standard Address
Street 1625 Perkins Way
House no. 1625
PCode 98155
City SEATTLE
Country United States

Communication

COMPAQ
Create Activity
SAP

Proc.Type: 0001
Description Meeting with Peter
Start Date: 21.06.2001
Start Time: 09:30
End Date: 21.06.2001
End Time: 10:30
Category: Meeting

mySAP Mobile Business: Solution Overview

mySAP Mobile Business solutions enable SAP to offer innovative and successful end-to-end business solutions for mobile devices.

Mobile Access

- Focus on the entire user experience to advance adoption, reduce training costs, and optimize gains.

Mobile Applications

- Provide tools which span multiple systems and include a broad range of processes, information and knowledge.

Mobile Technology

- **Technology infrastructure to support applications in connected and disconnected environments.**

mySAP Mobile Business

Mobile Computing: A Plethora of Buzzwords and Devices

Pocket PC RFID ARM

StrongARM Mobile Application Servers

Multi-Channel Field Service i-Mode

HomeRF SMS Portals M-Commerce

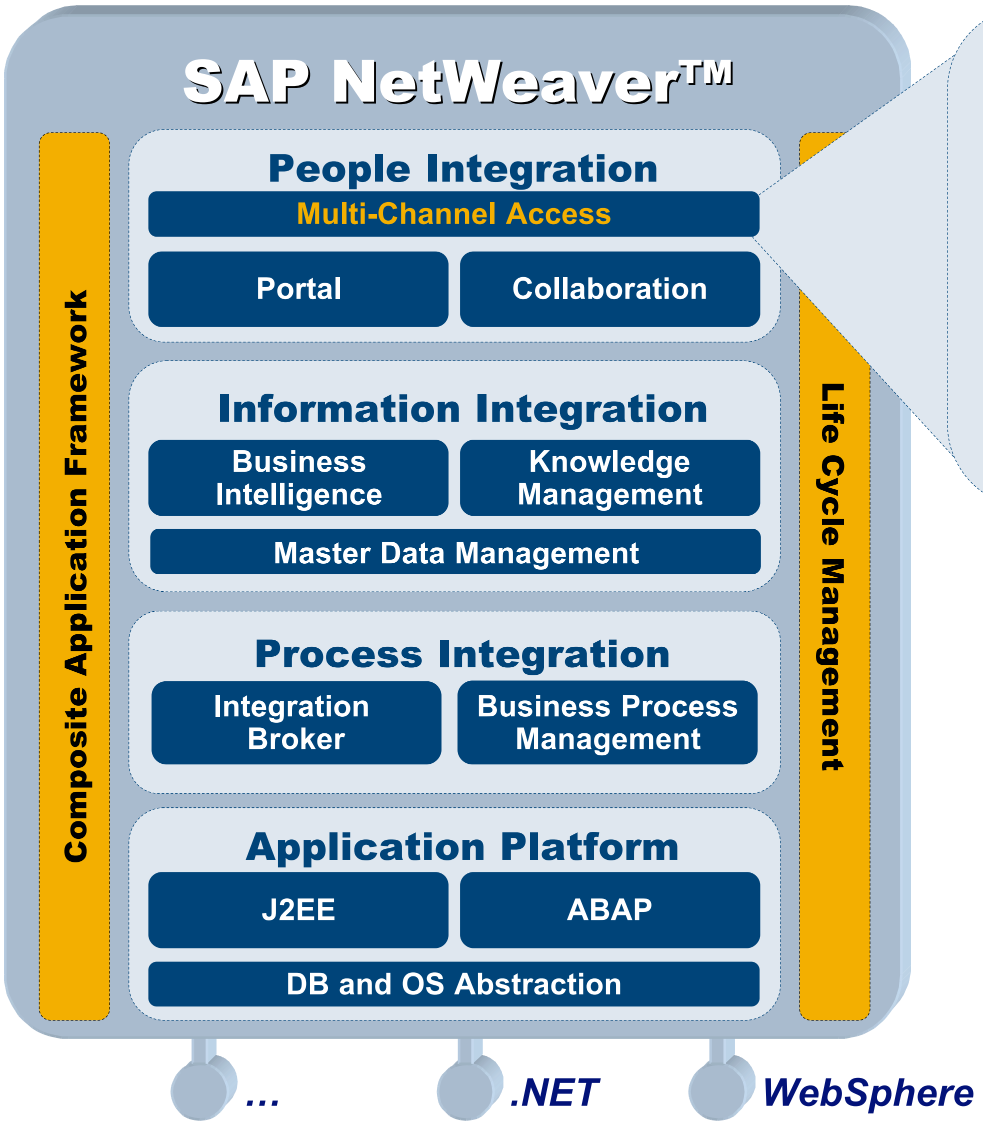
802.11b WAP GPRS

J2ME Bluetooth EDGE

.NET Compact 3G UMTS

SAP NetWeaver™

The comprehensive integration and application platform for lower TCO


SAP NetWeaver™
Composite Application Framework
People Integration
Multi-Channel Access
Portal
Collaboration
Information Integration
Business Intelligence
Knowledge Management
Master Data Management
Process Integration
Integration Broker
Business Process Management
Application Platform
J2EE
ABAP
DB and OS Abstraction
Life Cycle Management
…
.NET
WebSphere

Multi-Channel Access

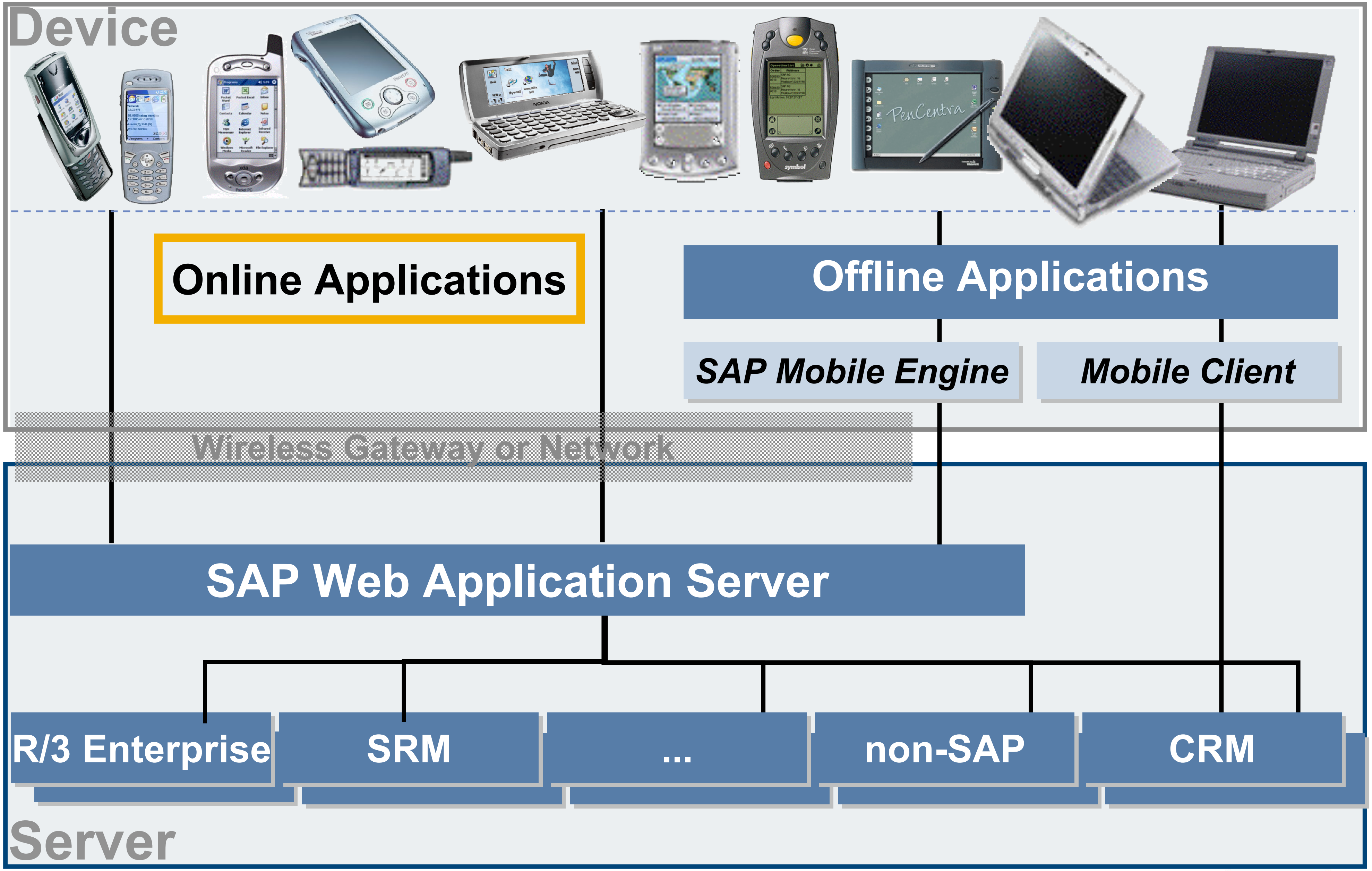
Technical Interaction Channels like

- Internet
- Interaction Center
- Mobile Devices

Mobile Devices

- Handheld Devices
- Laptops
- Tablet PCs
- ...

mySAP Mobile Business Architecture



Device

Online Applications

Offline Applications

SAP Mobile Engine

Mobile Client

Wireless Gateway or Network

SAP Web Application Server

R/3 Enterprise

SRM

...

non-SAP

CRM

Server

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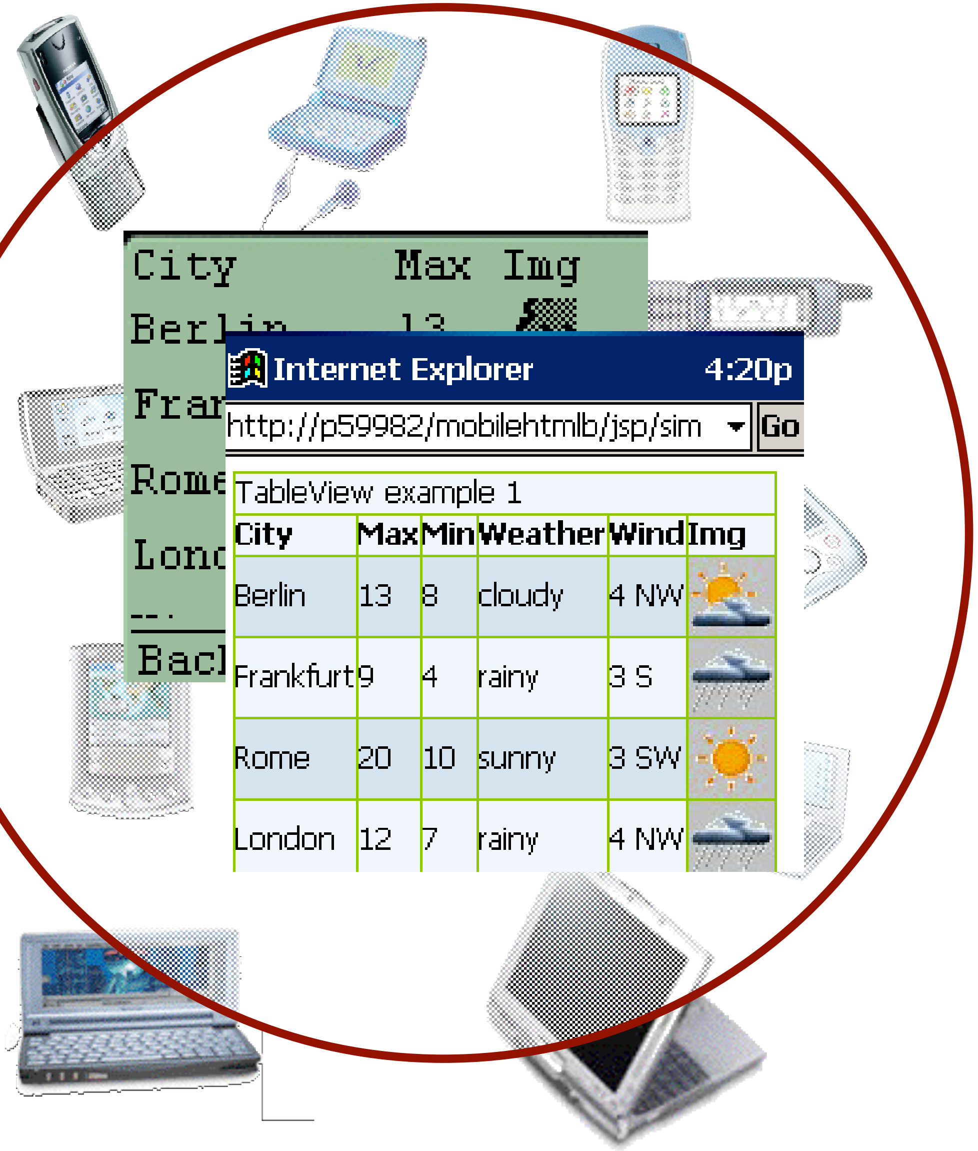
Difficulties in Developing Mobile Applications



City Max Img
Berlin 13
Fran
Rome
Lond
--.
Bacl
Internet Explorer 4:20p
http://p59982/mobilehtmlb/jsp/sim
Go

TableView example 1

City	Max	Min	Weather	Wind	Img
Berlin	13	8	cloudy	4 NW	⛅
Frankfurt	9	4	rainy	3 S	🌧
Rome	20	10	sunny	3 SW	☀
London	12	7	rainy	4 NW	🌧

Markup language

- HTML (which version?)
- WML

Form factor

- Distinguish textual from pixel

Scripting capability

- Is DHTML is supported?
- Regular expressions?

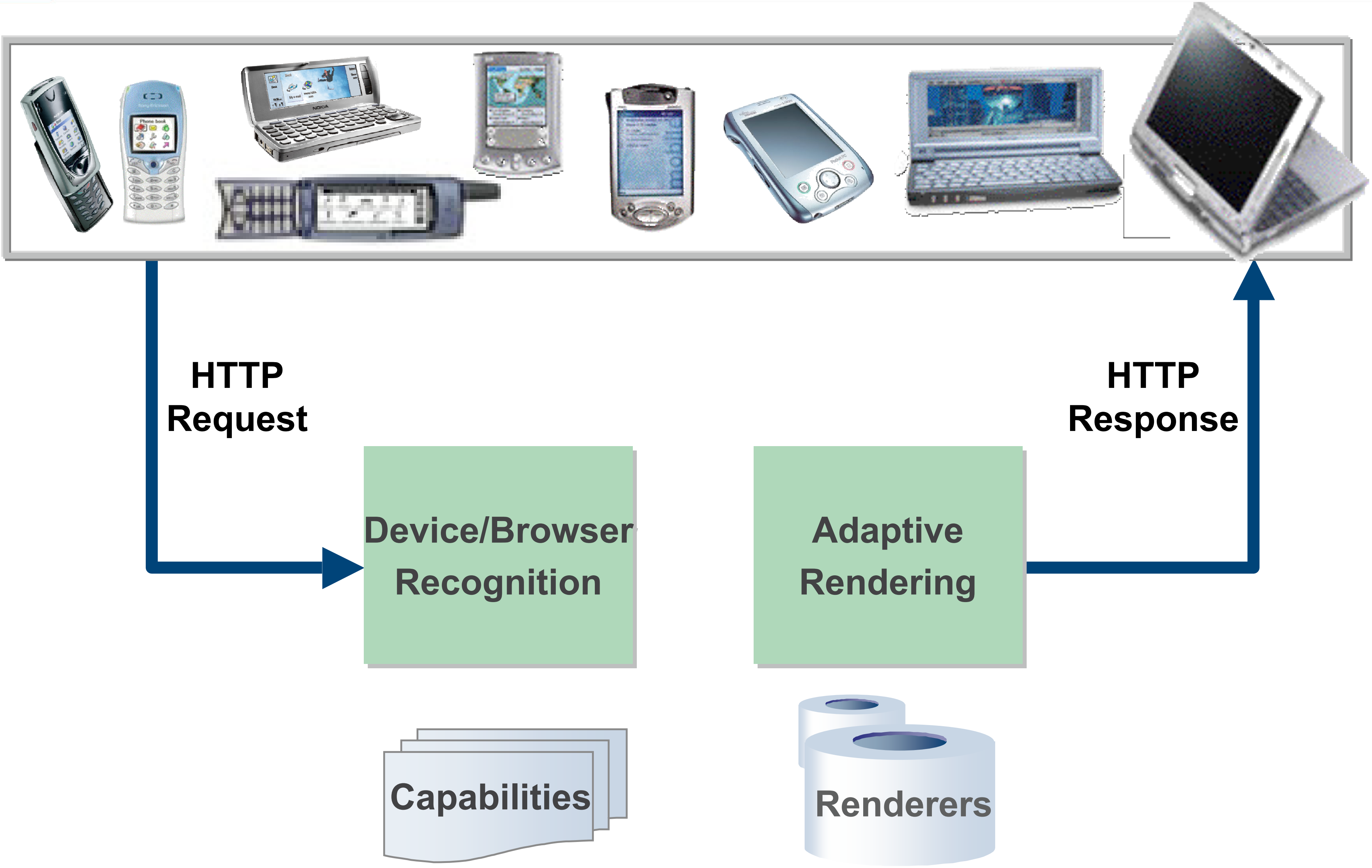
Input method

- Keyboard
- Voice command
- Touch screen
- Keypad

Security

- Cookie support
- Certificate support
- Capabilities of mobile browser

Our Approach



HTTP Request

Device/Browser Recognition

Capabilities

Adaptive Rendering

Renderers

HTTP Response

Device Recognition: Design Goals

Rely on device-independent properties instead of device itself

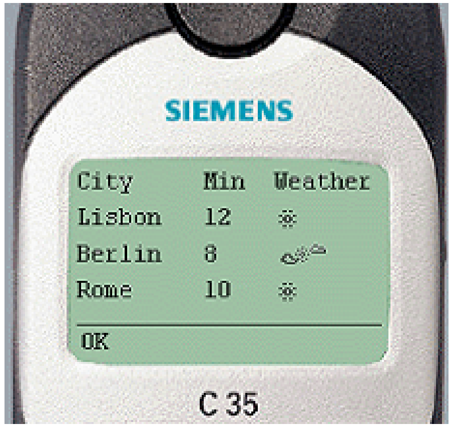
- Device-independent properties should be used
- Code still works when new devices are introduced

Extensible

- New devices can be added
- Property values can be modified

Effects of Recognizing the Micro Browser

OpenWave: Table with icons



City	Min	Weather
Lisbon	12	☼
Berlin	8	☁
Rome	10	☼

OK

R380: More columns

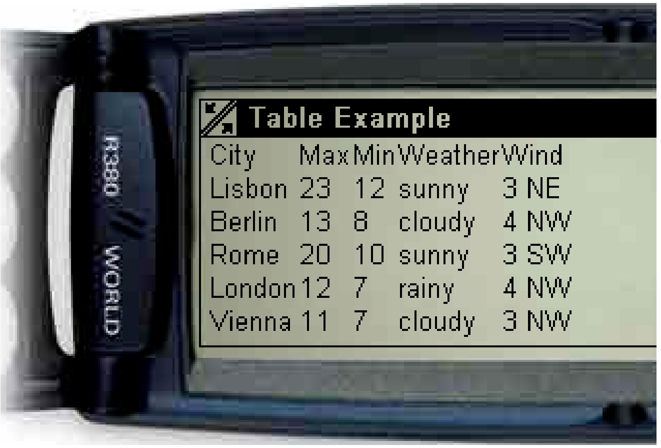


Table Example

City	Max	Min	Weather	Wind
Lisbon	23	12	sunny	3 NE
Berlin	13	8	cloudy	4 NW
Rome	20	10	sunny	3 SW
London	12	7	rainy	4 NW
Vienna	11	7	cloudy	3 NW

Nokia: no table

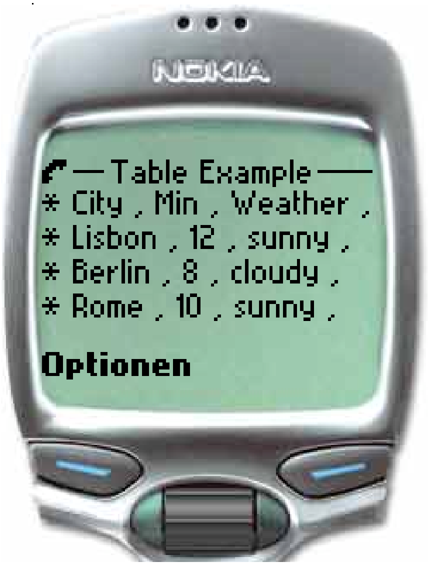
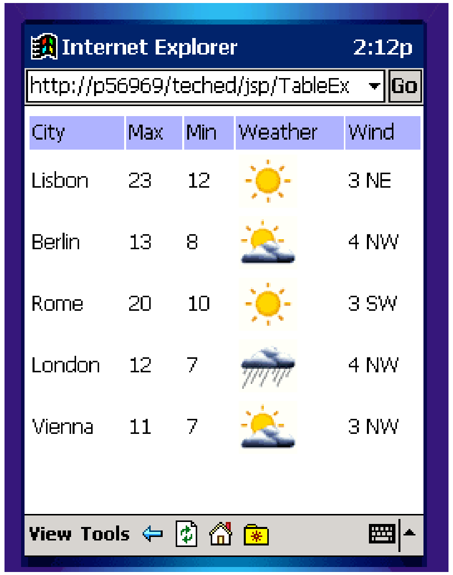


Table Example

- City , Min , Weather ,
- Lisbon , 12 , sunny ,
- Berlin , 8 , cloudy ,
- Rome , 10 , sunny ,

Optionen

Pocket PC: More color



http://p56969/teched/jsp/TableEx

City	Max	Min	Weather	Wind
Lisbon	23	12	☀	3 NE
Berlin	13	8	⛅	4 NW
Rome	20	10	☀	3 SW
London	12	7	🌧	4 NW
Vienna	11	7	⛅	3 NW

ClientInfo →120 Properties

- clientType
- deviceName
- vendor
- model
- mobileBrowserName
- mobileBrowserVersion
- formFactor
- ...
- accepts
- userAgent
- ...

- pixelHeight
- charHeight
- supportsScript
- supportsTitle
- supportsTables
- supportsCss
- ...
- defaultBlockSeparator
- defaultMenuStyle
- ...

Devices and Browsers Recognized

Microsoft

- Pocket IE 2002 (PocketPC)
- Pocket IE 3.0 (PocketPC)
- Pocket IE 2.1 (Handheld PC)

Emulators

- Nokia Toolkit 2.0, 2.1, 3.0
- Openwave SDK 4.x
- PocketPC
- Yospace

Desktop Browsers

- IE3, IE4, IE5, IE5.5
- Netscape 3.x, 4.x. 5.x, 6.0
- Opera 4 & 5

Palm

- Eudora Browser

WAP

- Nokia
  - Generic, 7110, 62xx, 9110, 9210
- Openwave UP
  - Generic, Motorola, Siemens
- Samsung
  - SGH 100
- Ericsson
  - R380, R320, R520

Japan

- NTT DoCoMo's i-mode browser
- J-Phone
- Ezweb

Smart Phones

- Nokia 9110, 9210 (9290) HTML browsers

ClientInfo: How It Works in Java and ABAP

Java

```
ClientInfo clientInfo = myContext.getClientinfo();

if(clientInfo.isTitleSupported())
   // do sth if title is supported
   ...
else
   // do sth if title is not supported
   ...
```

ABAP

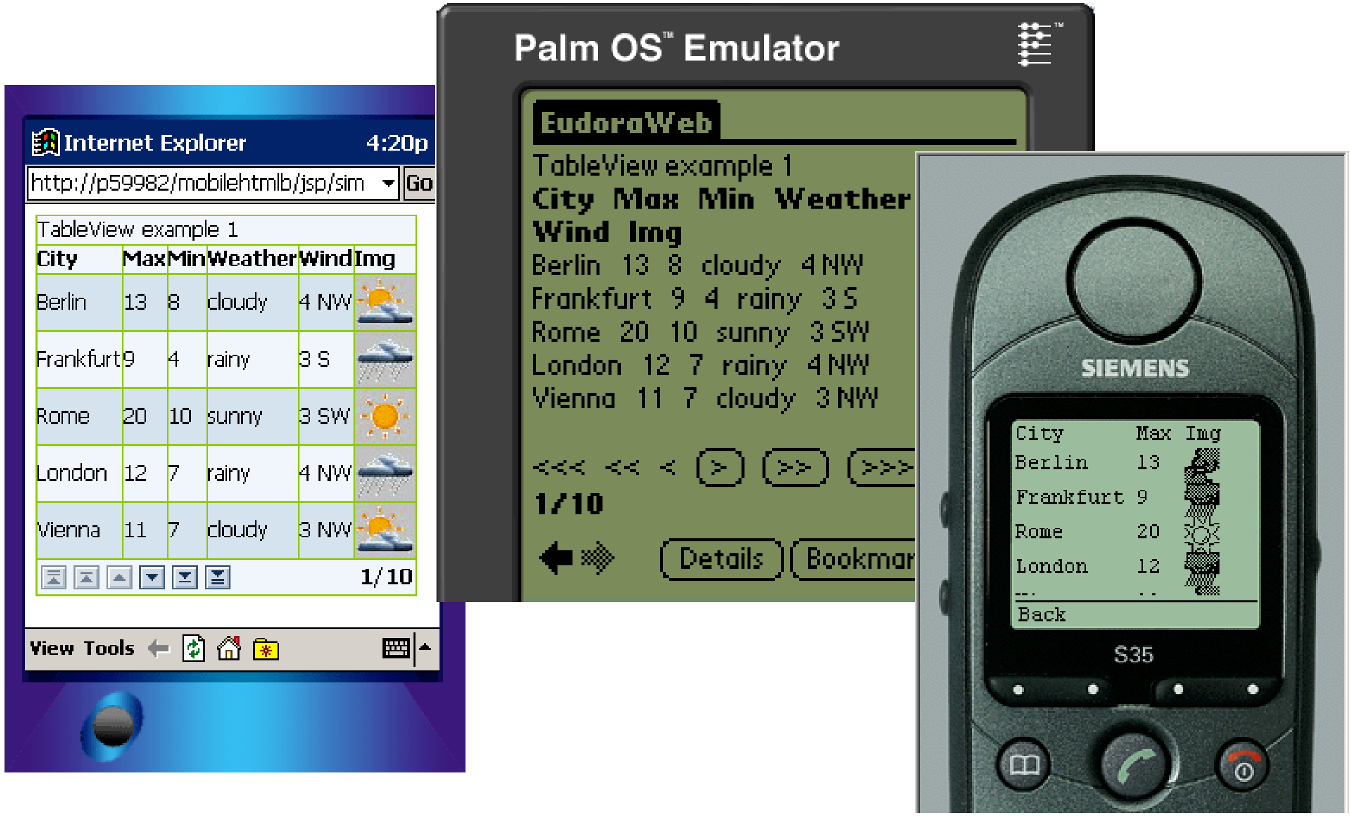
```
DATA client_info TYPE REF TO IF_CLIENT_INFO.

IF_CLIENT_INFO clientInfo = RUNTIME->CLIENT_INFO;

IF client_info->is_title_supported( ) = 1.
* do sth if title is supported
...
ELSE.
* do sth if title is not supported endif.
...
ENDIF.
```

Mobile HTMLB: Table Example

```
<sap:tableView
 model="myTableBean.model"
 design="ALTERNATING"
 onNavigate="myOnNavigate"
 visibleRowCount="5"/>
```



Internet Explorer 4:20p

http://p59982/mobilehtmlb/jsp/sim

TableView example 1

City	Max	Min	Weather	Wind	Img
Berlin	13	8	cloudy	4 NW	⛅
Frankfurt	9	4	rainy	3 S	🌧
Rome	20	10	sunny	3 SW	☀
London	12	7	rainy	4 NW	🌧
Vienna	11	7	cloudy	3 NW	⛅

1/10

EudoraWeb

TableView example 1

City Max Min Weather Wind Img

Berlin 13 8 cloudy 4 NW
Frankfurt 9 4 rainy 3 S
Rome 20 10 sunny 3 SW
London 12 7 rainy 4 NW
Vienna 11 7 cloudy 3 NW

1/10

City Max Img
Berlin 13
Frankfurt 9
Rome 20
London 12
Back

Mobile HTMLB Controls

Supported Browsers

- Pocket IE (PocketPC 2002)
- Pocket IE (PocketPC)
- *Pocket IE 2.1 (Handheld PC)*
- Palm Eudora Browser
- Nokia small browser
- Openwave browser
- *Nokia 9210 HTML browser*
- *Nokia 9210 WAP browser*
- *i-mode browser (e-plus)*

Supported Emulators

- Nokia Toolkit 2.0, 2.1, 3.0
- Openwave SDK 4.x
- PocketPC
- Yospace

Available Controls

- Framework for PocketPC and WAP browser
- Form, Document
- Button, Breadcrumb, Checkbox, CheckBoxGroup, DateNavigator, DropDownListBox, GridLayout, Group, Image, InputField, ItemList, Label, Link, ListBox, RadioButtonGroup, TableView, TabStrip, TextEdit, TextView, Tray

Delivery Paths

- SAP Web AS 6.20
- PDK
- Enterprise Portal 5.0 SP2
- *Web Dynpro as part of Web AS 6.30*
- *Enterprise Portal 6.0*

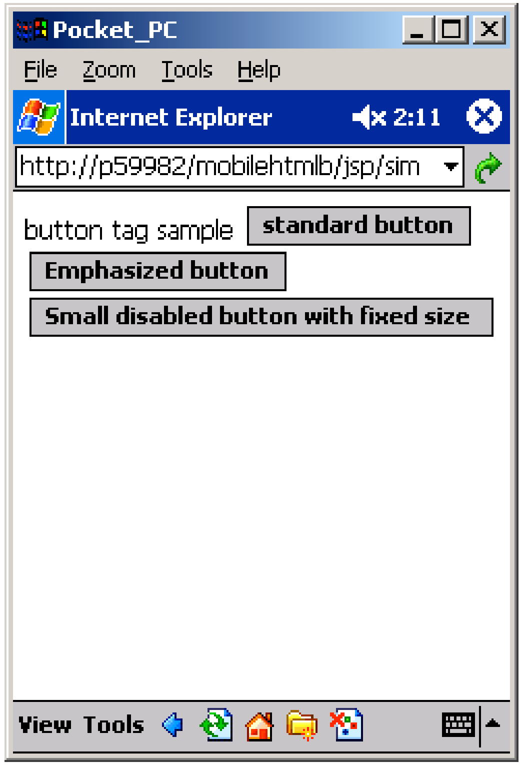
Document Control: After Rendering

```
<html>
  <head><title>Xxx</title>
  </head>
  <body>
  </body>
</html>
```

```
<?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML
1.1//EN"
"http://www.wapforum.org/DTD/wml_1.1.xml">
<wml><head></head>
  <card>
  </card>
</wml>
```

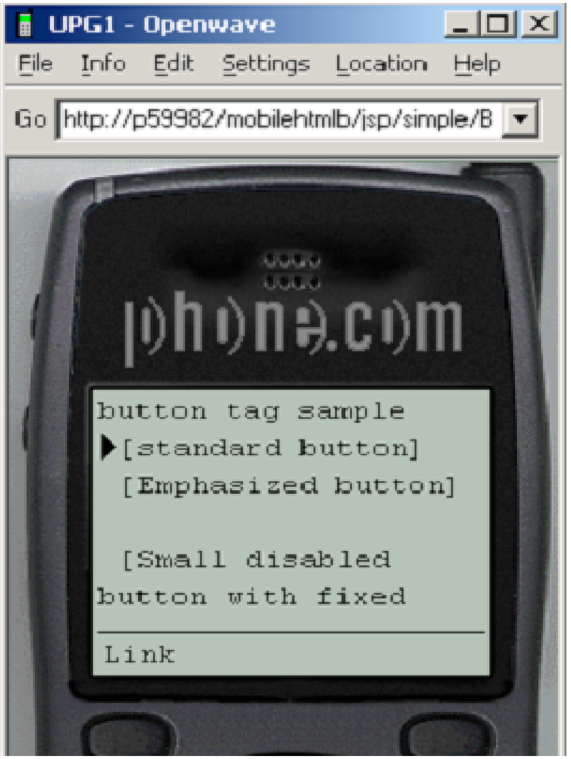
Button

```
<sap:button
 id     ="myButton"
 text   ="standard button"
 design ="STANDARD">
</sap:button>
```



http://p59982/mobilehtmlb/jsp/sim

Pocket_PC
File Zoom Tools Help
Internet Explorer
2:11
button tag sample
standard button
Emphasized button
Small disabled button with fixed size
View Tools



Go http://p59982/mobilehtmlb/jsp/simple/B

UPG1 - Openwave
File Info Edit Settings Location Help
phone.com
button tag sample
[standard button]
[Emphasized button]
[Small disabled
button with fixed
Link

Button: After Rendering

```
<sap:button id="myButton" text=„Click me!" />
```

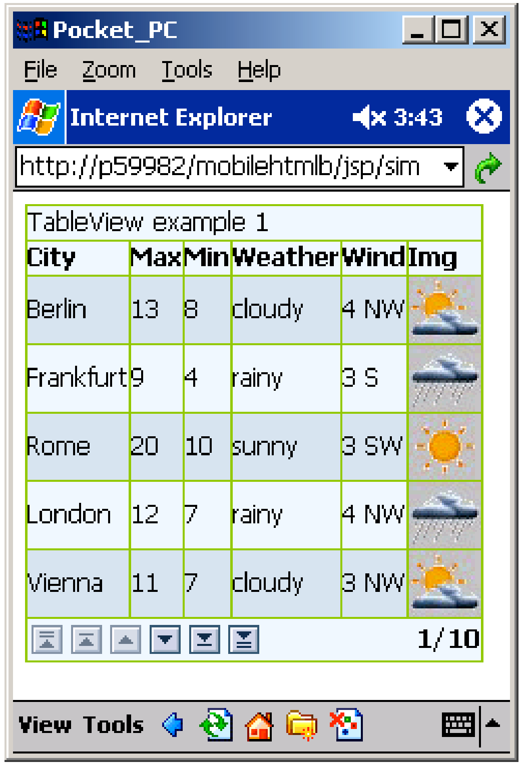
```
<input type="submit"
name="htmlbSubmit(this,'0','htmlb_1_htmlb_1',1,1,0); return
false;" value="Click me!">
```

```
<a href=""
onClick="htmlbSubmit(this,'0','htmlb_1_htmlb_1',1,1,0);
return false;" class="sapBtnStd" id="htmlb_1_htmlb_1_1">
<nobr>Click me!</nobr></a>
```

```
<anchor>Click me!
<go href="#hidden">
<setvar name="htmlbevt_ty" value="0"/><setvar
name="htmlbevt_frm" value="htmlb_1_htmlb_1"/><setvar
name="htmlbevt_oid" value="1"/><setvar name="htmlbevt_id"
value="1"/><setvar name="htmlbevt_cnt" value="0"/>
</go></anchor>
```

Business Data: TableView

```
<sap:tableView
 model="myTableBean.model"
 design="ALTERNATING"
 onNavigate="myOnNavigate"
 visibleRowCount="5"/>
```

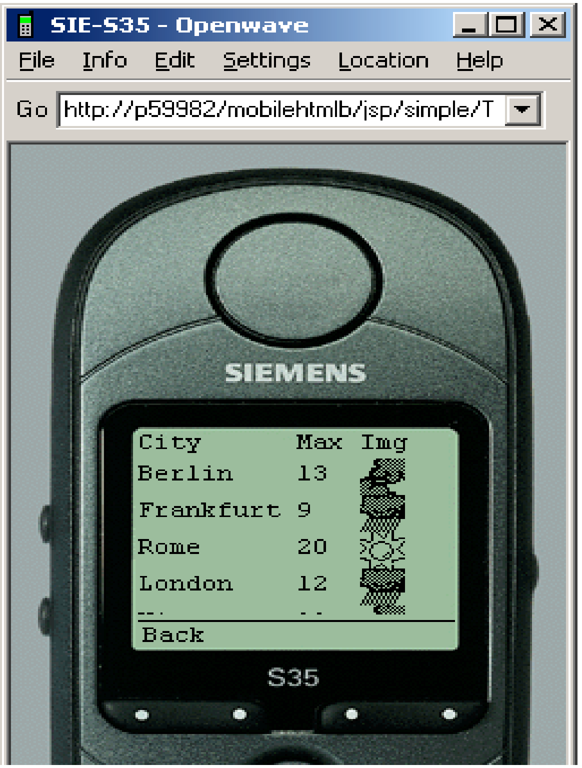

Pocket_PC
File Zoom Tools Help
Internet Explorer
3:43
View Tools

http://p59982/mobilehtmlb/jsp/sim

TableView example 1

City	Max	Min	Weather	Wind	Img
Berlin	13	8	cloudy	4 NW	
Frankfurt	9	4	rainy	3 S	
Rome	20	10	sunny	3 SW	
London	12	7	rainy	4 NW	
Vienna	11	7	cloudy	3 NW	

1/10

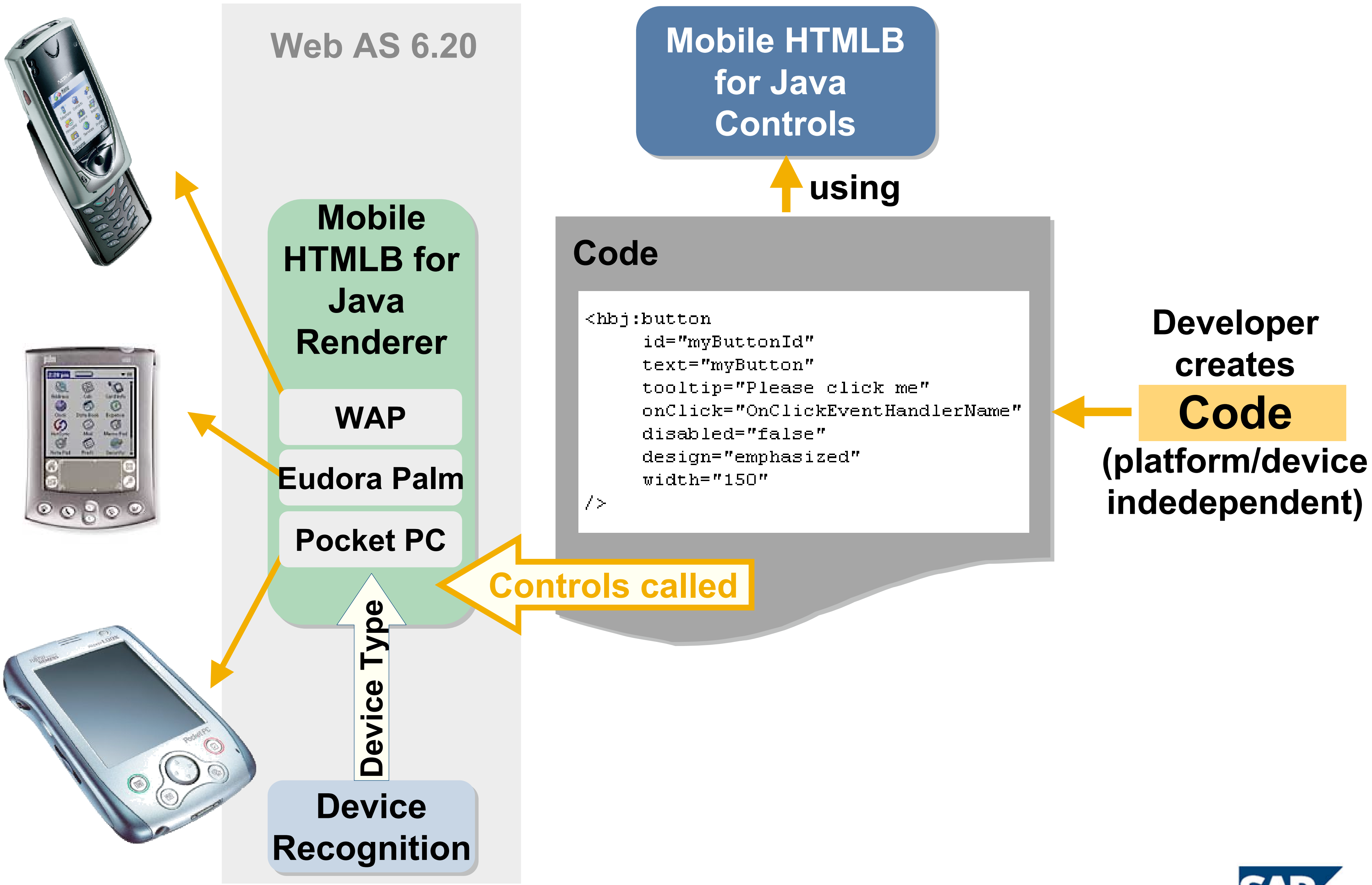

SIE-S35 - Openwave
File Info Edit Settings Location Help
SIEMENS
S35

Go http://p59982/mobilehtmlb/jsp/simple/T

City	Max	Img
Berlin	13	
Frankfurt	9	
Rome	20	
London	12	

Back

Developing Mobile Apps using Mobile HTMLB for Java



Web AS 6.20

Mobile HTMLB for Java Renderer

WAP

Eudora Palm

Pocket PC

Device Type

Device Recognition

Mobile HTMLB for Java Controls

using

Controls called

Code

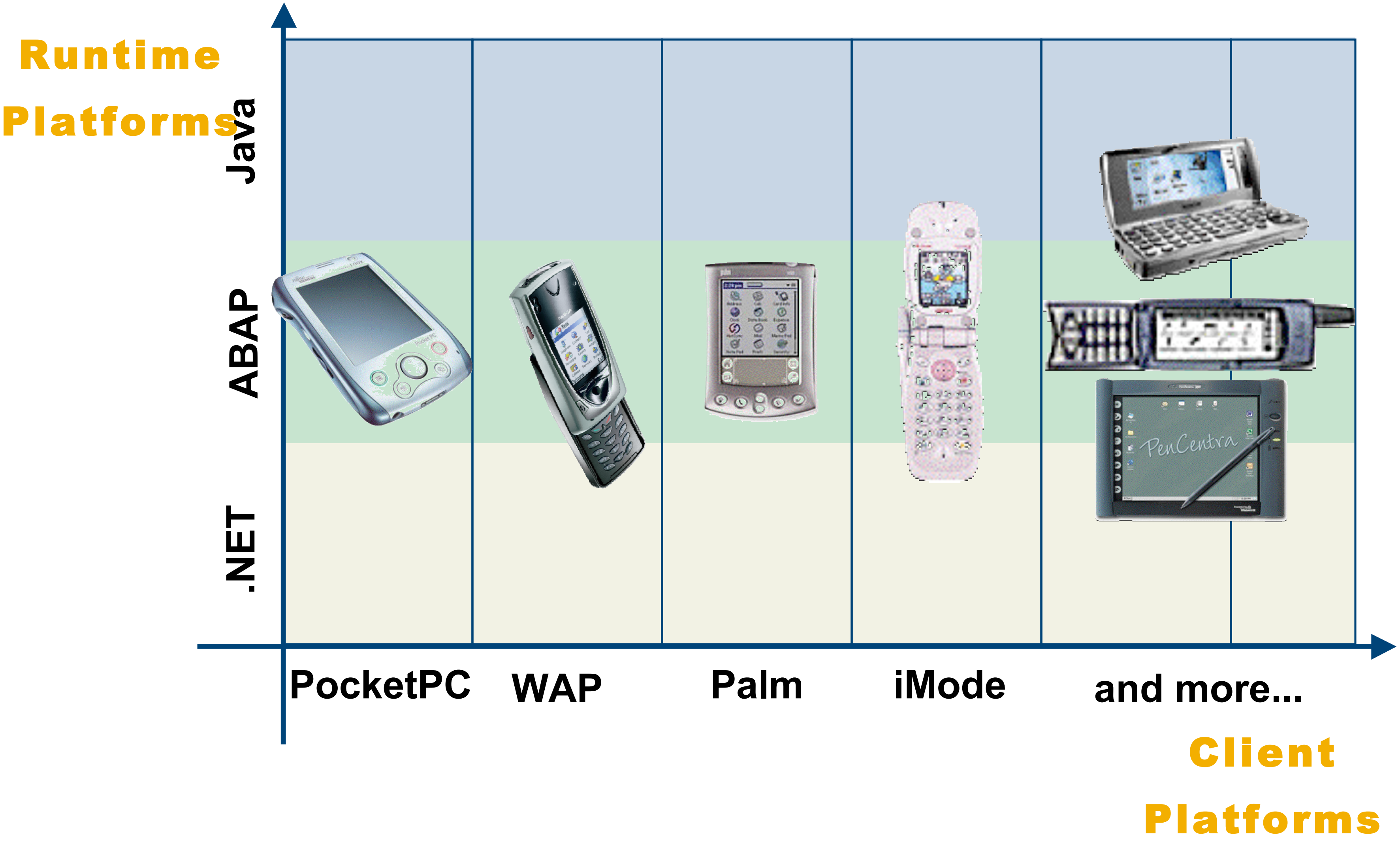
```
<hbj:button
      id="myButtonId"
      text="myButton"
      tooltip="Please click me"
      onClick="OnClickEventHandlerName"
      disabled="false"
      design="emphasized"
      width="150"
/>
```

Developer creates

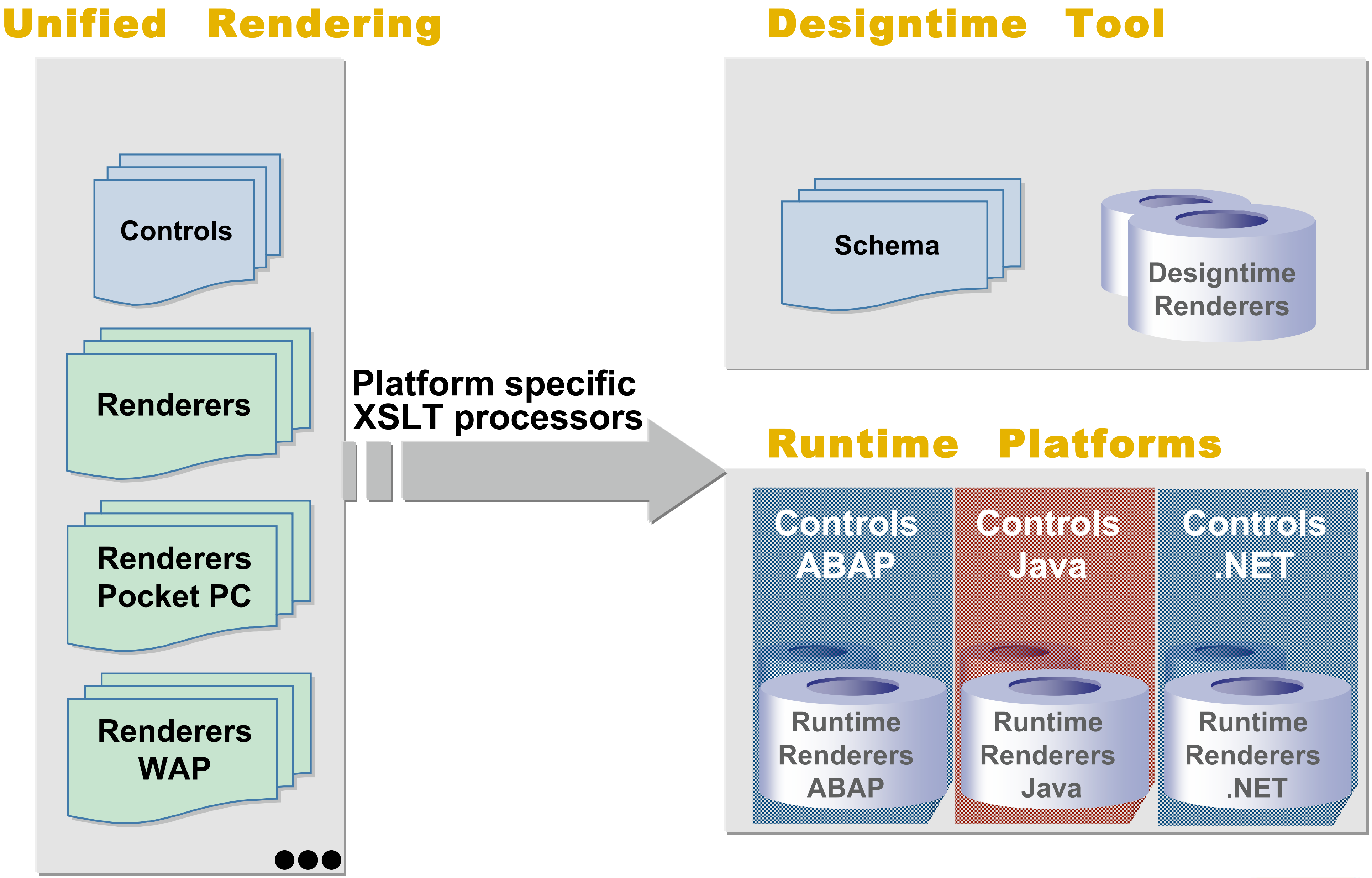
Code

(platform/device indedependent)

Web Dynpro: Unified Rendering with Mobile Devices


Runtime Platforms
Java
ABAP
.NET
PocketPC
WAP
Palm
iMode
and more...
Client Platforms

Web Dynpro: Unified Rendering



Unified Rendering
Controls
Renderers
Renderers Pocket PC
Renderers WAP
●●●
Platform specific XSLT processors
Designtime Tool
Schema
Designtime Renderers
Runtime Platforms
Controls ABAP
Controls Java
Controls .NET
Runtime Renderers ABAP
Runtime Renderers Java
Runtime Renderers .NET

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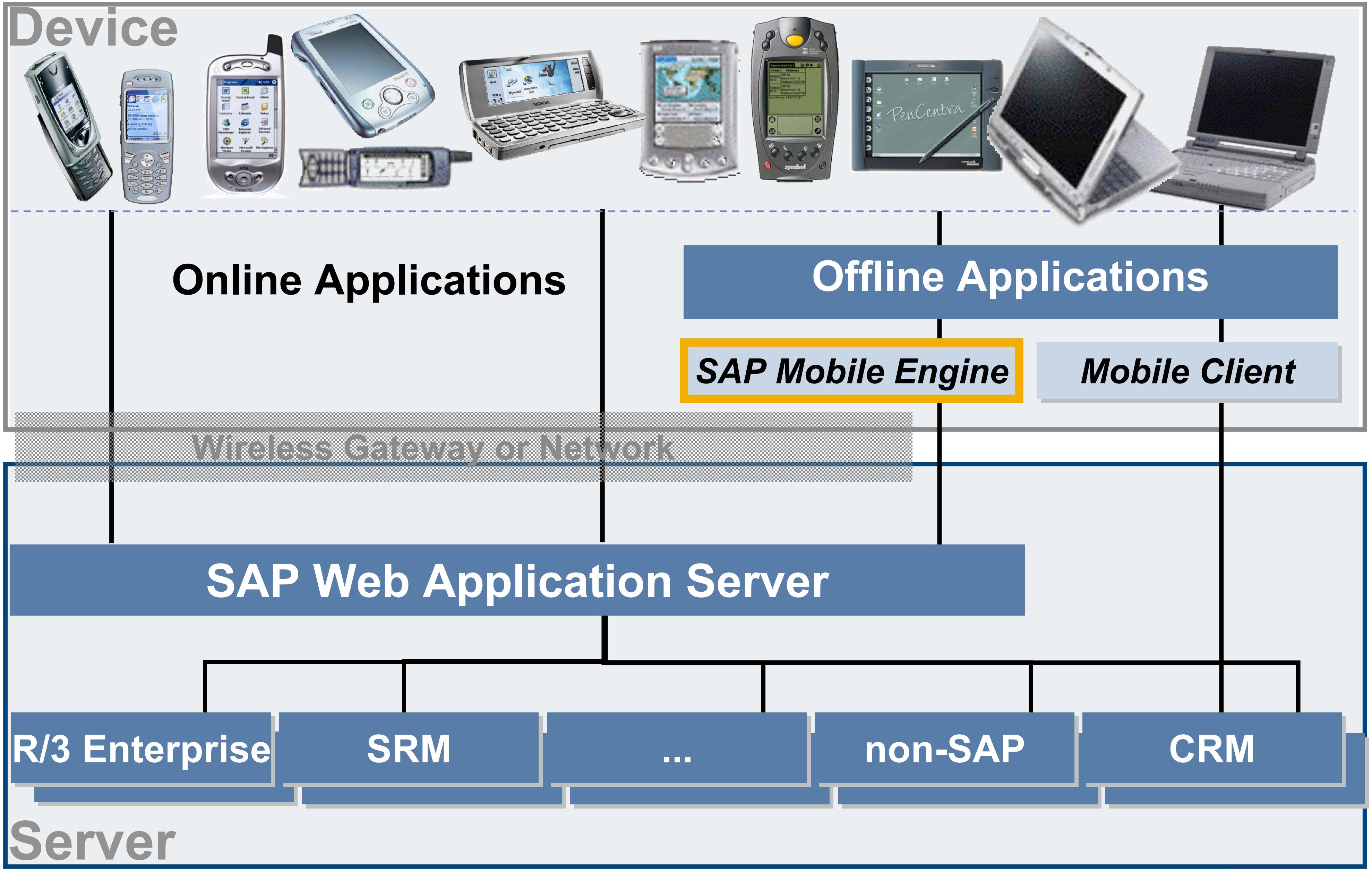
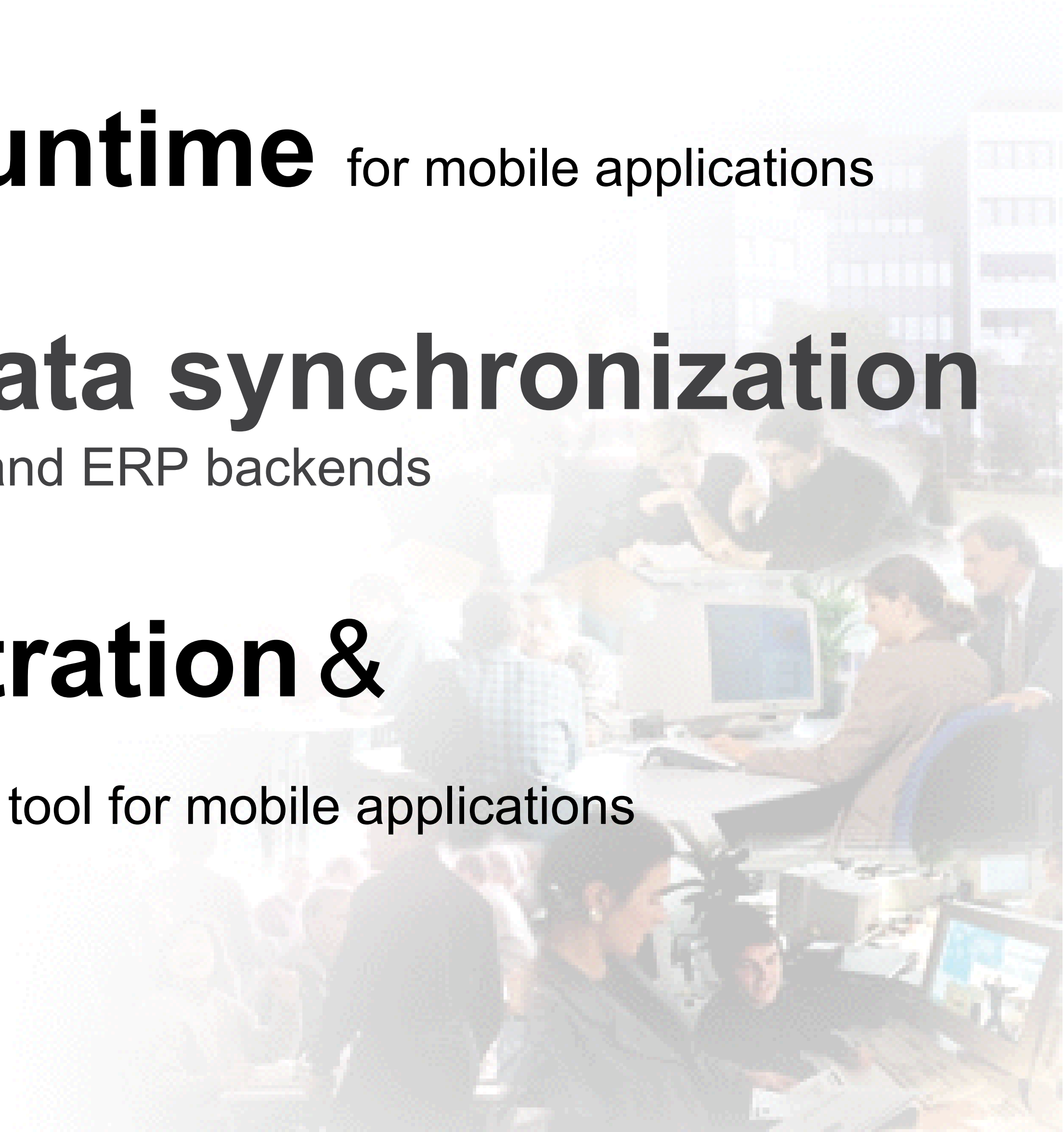
mySAP Mobile Business Architecture

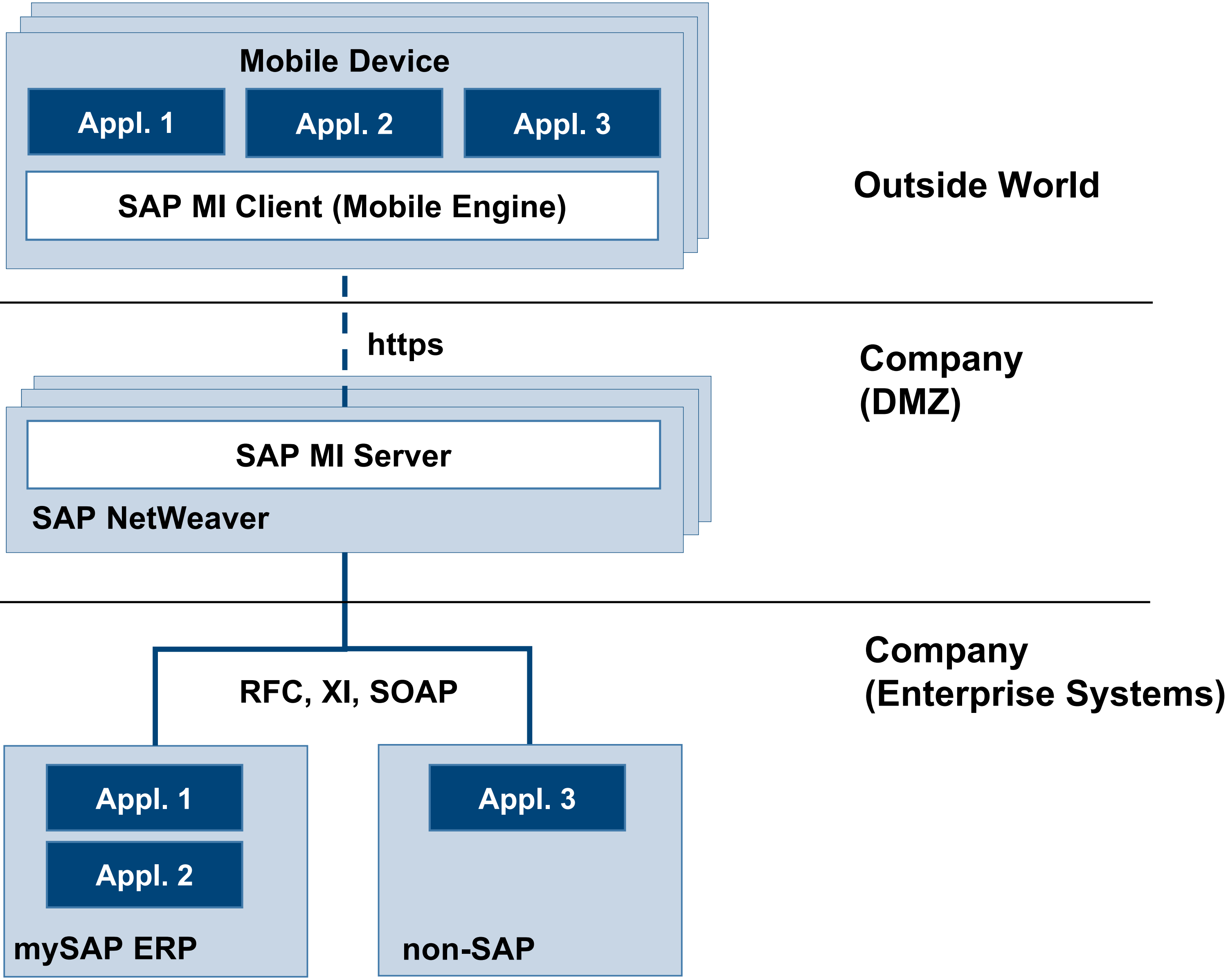

Device
Online Applications
Offline Applications
SAP Mobile Engine
Mobile Client
Wireless Gateway or Network
SAP Web Application Server
R/3 Enterprise
SRM
...
non-SAP
CRM
Server

SAP Mobile Engine is a ...



- platform-independent **runtime** for mobile applications
- strong mechanism for **data synchronization** between mobile devices and ERP backends
- central **administration** & **deployment** tool for mobile applications

SAP Mobile Infrastructure - IT Landscape



Mobile Device

Appl. 1

Appl. 2

Appl. 3

SAP MI Client (Mobile Engine)

Outside World

https

Company
(DMZ)

SAP MI Server

SAP NetWeaver

RFC, XI, SOAP

Company
(Enterprise Systems)

Appl. 1

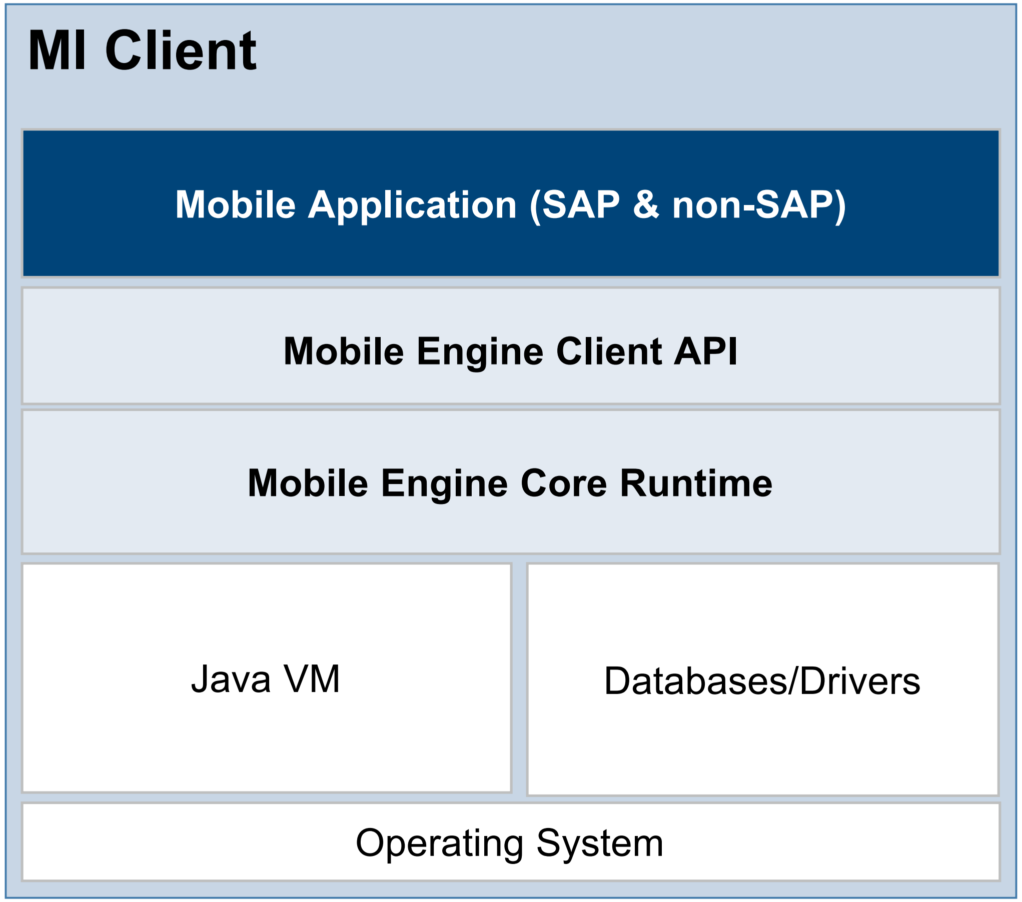
Appl. 2

mySAP ERP

Appl. 3

non-SAP

Architecture – SAP MI Client



MI Client

Mobile Application (SAP & non-SAP)

Mobile Engine Client API

Mobile Engine Core Runtime

Java VM

Databases/Drivers

Operating System

Platform-independent

- Java-based framework
- J2SE and J2ME support
- Local browser or Java UI

Open standard programming models

- Web-Applications (HTML, JSP 1.1)
- pure Java (AWT, J2ME midlets)

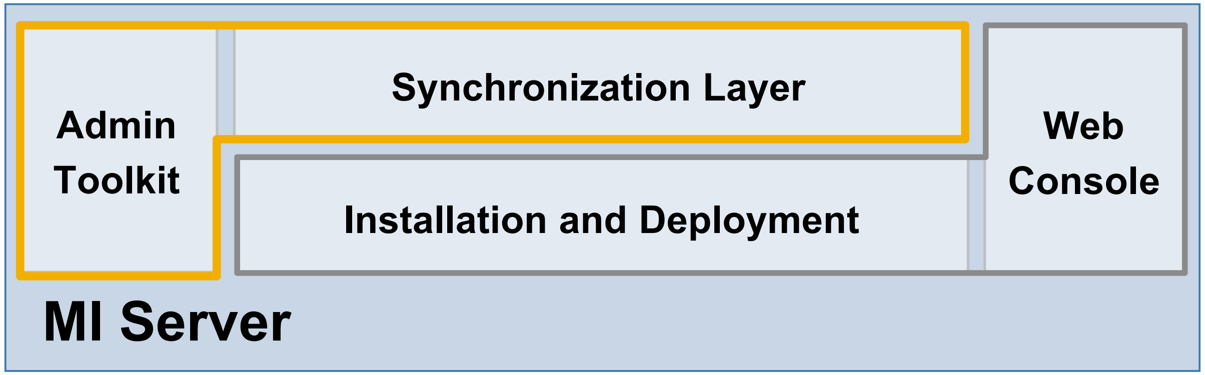
Extensive API for mobile Applications

- Data Persistence
- Synchronization
- Security
- Data Compression
- Tracing

Native Driver and Database support

- Infrared, Bluetooth, built-in
- Database Support

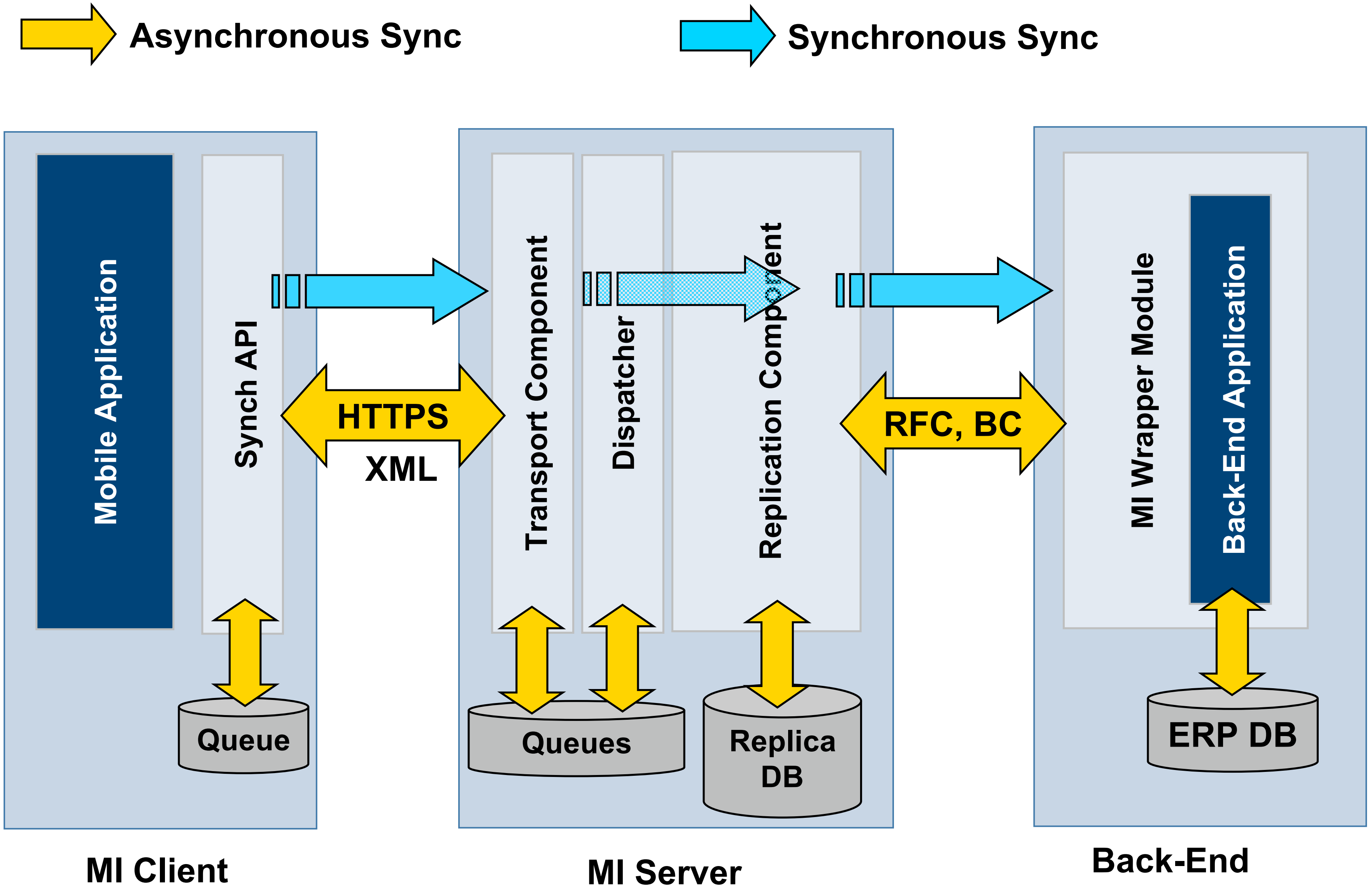
Architecture – SAP MI Server


Admin Toolkit
Synchronization Layer
Installation and Deployment
Web Console
MI Server

- Synchronization Layer
    - Encryption, Compression
    - Transport and Replication
- Admin Toolkit
    - Sync Monitoring
    - Sync Configuration

- Installation and Deployment
    - ME Installation
    - Application Deployment
- Web Console
    - Device Config Management
    - Device Status Monitoring

Synchronization Architecture

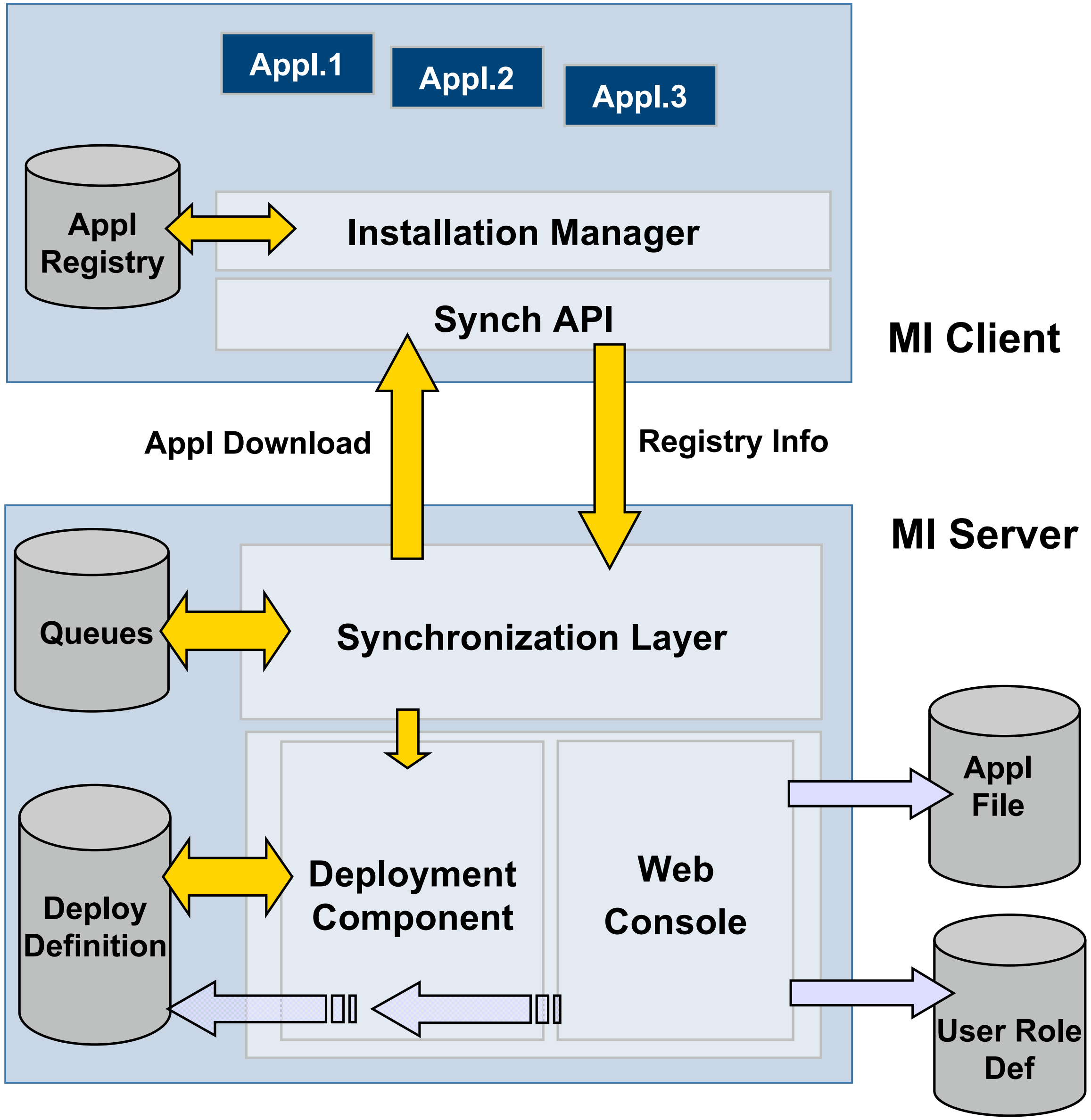


Asynchronous Sync
Synchronous Sync
Mobile Application
Synch API
Queue
HTTPS
XML
Transport Component
Dispatcher
Replication Component
Queues
Replica DB
RFC, BC
MI Wrapper Module
Back-End Application
ERP DB
MI Client
MI Server
Back-End

Synchronization – Key Features

- Bi-directional Data Exchange
- XML-based Data Container
- Compressed and Encrypted
- Conflict Resolution
- Delta Determination
- Fine-granular (Business Object Level)
- Re-Use of ERP-Functions (Wrapper)

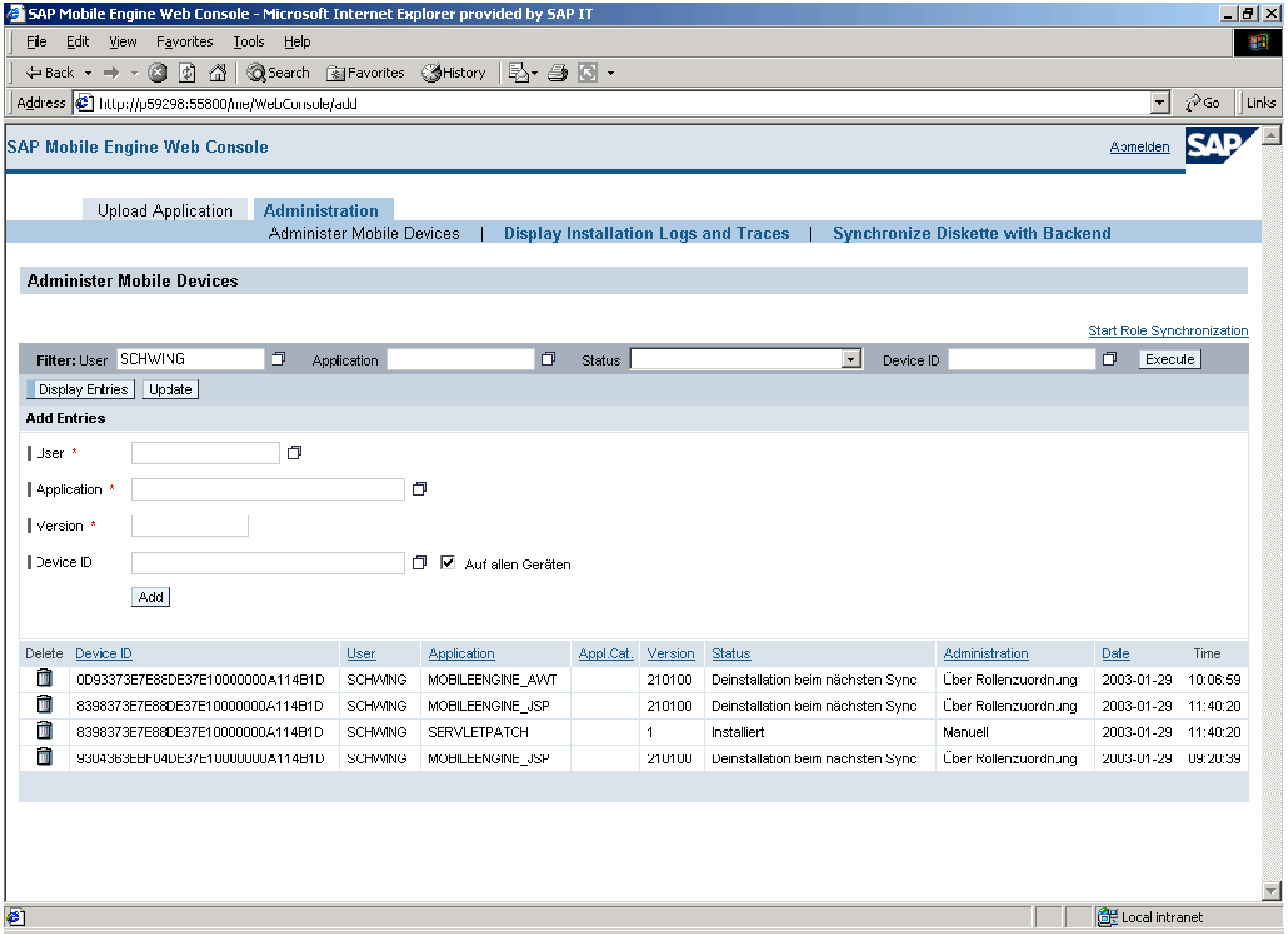
Deployment Architecture


Appl.1
Appl.2
Appl.3
Appl Registry
Installation Manager
Synch API
MI Client
Appl Download
Registry Info
MI Server
Queues
Synchronization Layer
Appl File
Deploy Definition
Deployment Component
Web Console
User Role Def

THE BEST-RUN BUSINESSES RUN SAP

Device Management and Configuration

SAP Mobile Engine Web Console - Screenshot


SAP Mobile Engine Web Console - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://p59298:55800/me/WebConsole/add
Go Links
SAP Mobile Engine Web Console
Abmelden
Upload Application
Administration
Administer Mobile Devices | Display Installation Logs and Traces | Synchronize Diskette with Backend
Start Role Synchronization
Execute
Display Entries
Update
Add
Local intranet

Administer Mobile Devices

Filter: User SCHWING Application Status Device ID

Add Entries

User *

Application *

Version *

Device ID ☑ Auf allen Geräten

Delete	Device ID	User	Application	Appl.Cat.	Version	Status	Administration	Date	Time
🗑	0D93373E7E88DE37E10000000A114B1D	SCHWING	MOBILEENGINE_AWT		210100	Deinstallation beim nächsten Sync	Über Rollenzuordnung	2003-01-29	10:06:59
🗑	8398373E7E88DE37E10000000A114B1D	SCHWING	MOBILEENGINE_JSP		210100	Deinstallation beim nächsten Sync	Über Rollenzuordnung	2003-01-29	11:40:20
🗑	8398373E7E88DE37E10000000A114B1D	SCHWING	SERVLETPATCH		1	Installiert	Manuell	2003-01-29	11:40:20
🗑	9304363EBF04DE37E10000000A114B1D	SCHWING	MOBILEENGINE_JSP		210100	Deinstallation beim nächsten Sync	Über Rollenzuordnung	2003-01-29	09:20:39

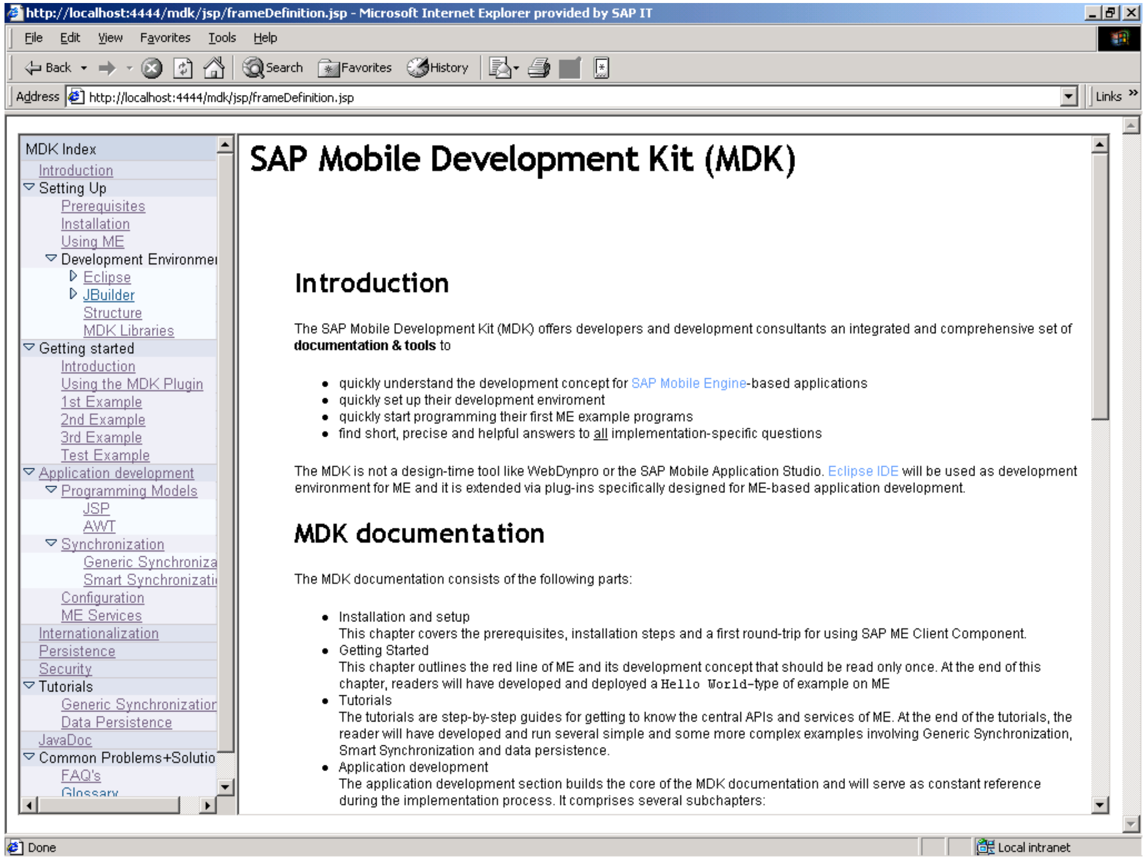
Deployment and Device Management – Key Features

- MI Client Framework
    - Central installation and de-installation
    - Framework upgrade and patch
    - Automatic versioning
- Mobile Application Deployment
    - Central installation and de-installation
    - Application upgrade and versioning
    - Role-based application deployment (seamless integrated into SAP role-concept)
- Monitoring and Administration
    - Central monitoring / tracing / logging
    - Central registration and administration of remote devices

Mobile Application Development

The Mobile Development Kit (MDK) offers an integrated and comprehensive set of Documentation & Tools

- Local installation on developer PC (stand-alone)
- HTML-based with IDE Plug-ins (Eclipse)
- Recommended Toolkit for Customers and Partners


http://localhost:4444/mdk/jsp/frameDefinition.jsp - Microsoft Internet Explorer provided by SAP IT
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://localhost:4444/mdk/jsp/frameDefinition.jsp
Links
MDK Index
Introduction
Setting Up
Prerequisites
Installation
Using ME
Development Environme
Eclipse
JBuilder
Structure
MDK Libraries
Getting started
Introduction
Using the MDK Plugin
1st Example
2nd Example
3rd Example
Test Example
Application development
Programming Models
JSP
AWT
Synchronization
Generic Synchroniza
Smart Synchronizati
Configuration
ME Services
Internationalization
Persistence
Security
Tutorials
Generic Synchronizatior
Data Persistence
JavaDoc
Common Problems+Solutio
FAQ's
Glossary
Done
Local intranet

SAP Mobile Development Kit (MDK)

Introduction

The SAP Mobile Development Kit (MDK) offers developers and development consultants an integrated and comprehensive set of **documentation & tools** to

- quickly understand the development concept for SAP Mobile Engine-based applications
- quickly set up their development enviroment
- quickly start programming their first ME example programs
- find short, precise and helpful answers to all implementation-specific questions

The MDK is not a design-time tool like WebDynpro or the SAP Mobile Application Studio. Eclipse IDE will be used as development environment for ME and it is extended via plug-ins specifically designed for ME-based application development.

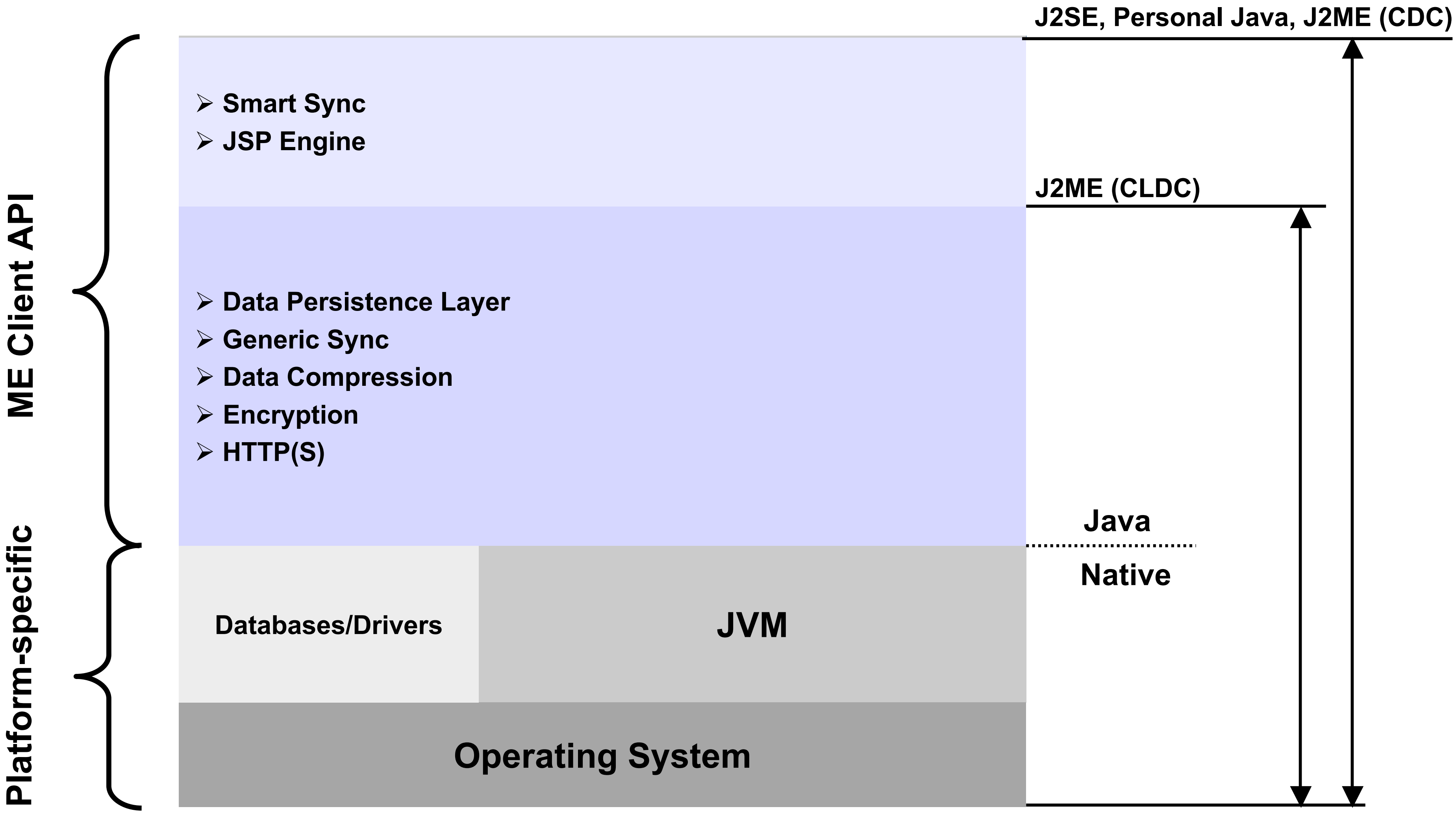
MDK documentation

The MDK documentation consists of the following parts:

- Installation and setup
  This chapter covers the prerequisites, installation steps and a first round-trip for using SAP ME Client Component.
- Getting Started
  This chapter outlines the red line of ME and its development concept that should be read only once. At the end of this chapter, readers will have developed and deployed a `Hello World`-type of example on ME
- Tutorials
  The tutorials are step-by-step guides for getting to know the central APIs and services of ME. At the end of the tutorials, the reader will have developed and run several simple and some more complex examples involving Generic Synchronization, Smart Synchronization and data persistence.
- Application development
  The application development section builds the core of the MDK documentation and will serve as constant reference during the implementation process. It comprises several subchapters:

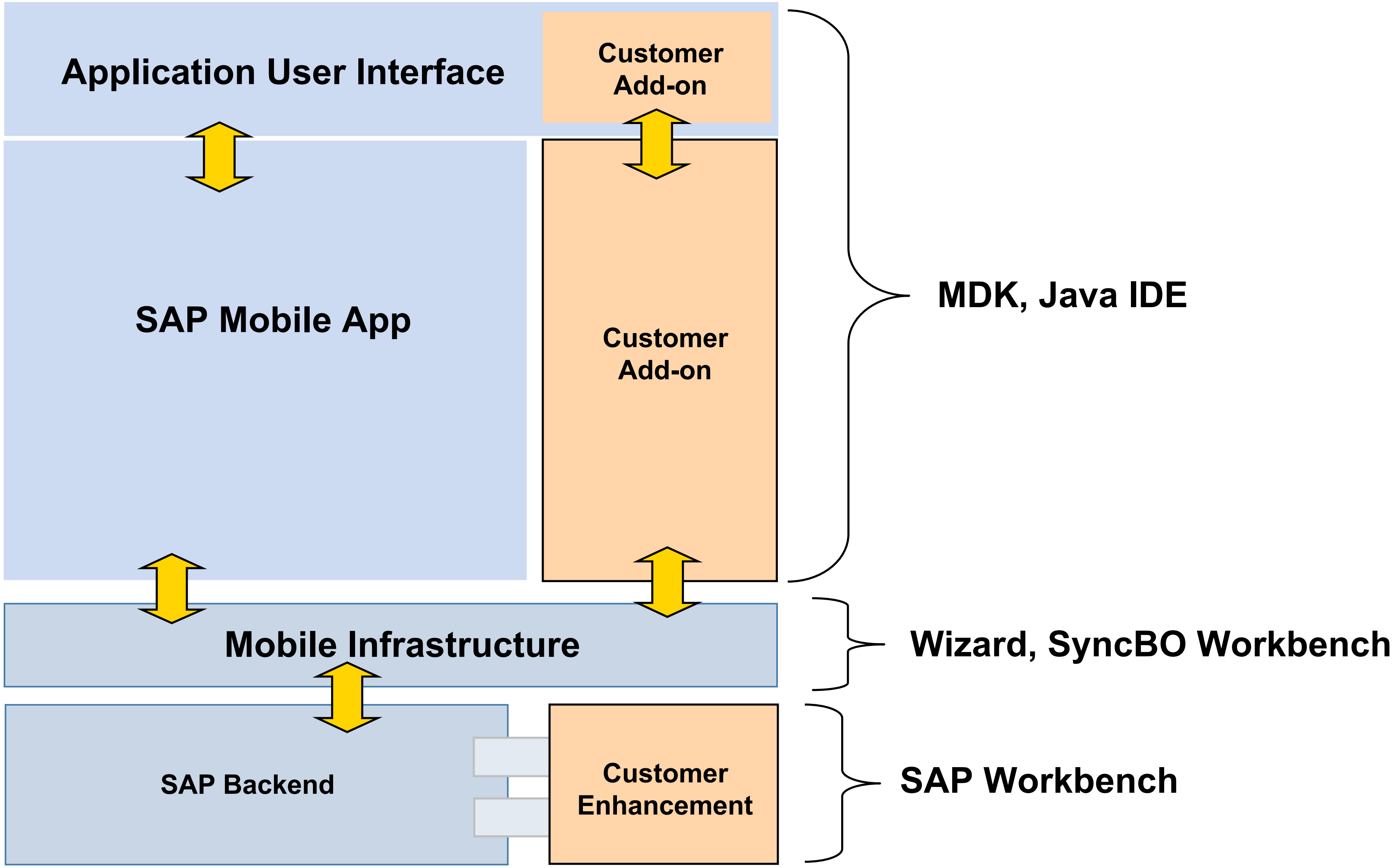
Mobile Engine Client API – Detailed Look

The ME Client API abstracts the application from underlaying device platforms.



ME Client API
Platform-specific
Smart Sync
JSP Engine
Data Persistence Layer
Generic Sync
Data Compression
Encryption
HTTP(S)
Databases/Drivers
JVM
Operating System
J2SE, Personal Java, J2ME (CDC)
J2ME (CLDC)
Java
Native

Customer Enhancements of SAP Mobile Apps



Application User Interface

Customer Add-on

SAP Mobile App

Customer Add-on

Mobile Infrastructure

SAP Backend

Customer Enhancement

MDK, Java IDE

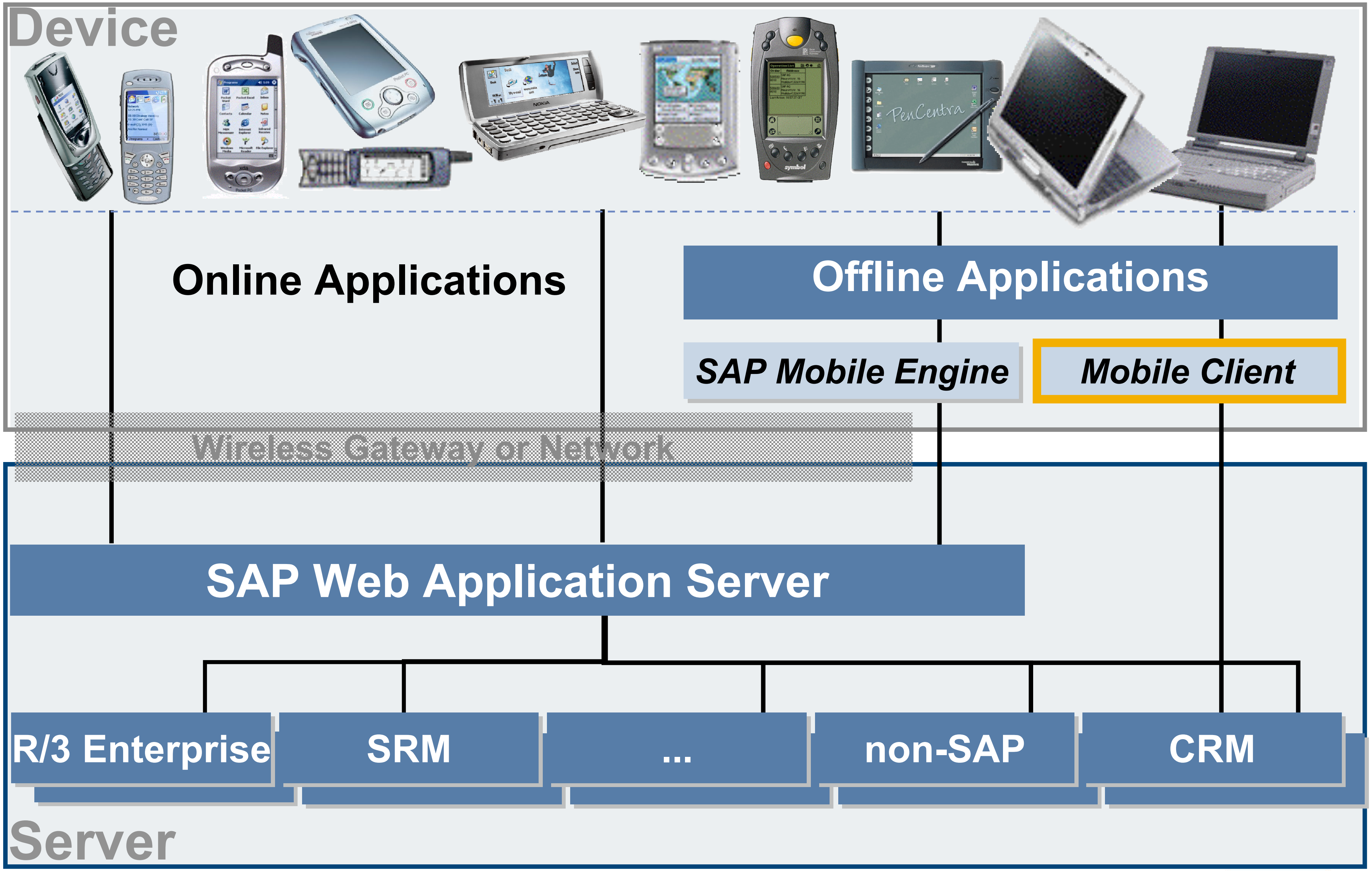
Wizard, SyncBO Workbench

SAP Workbench

Agenda

- Overview
  - mySAP Mobile Business Vision
  - Online Integration
  - SAP Mobile Infrastructure
  - SAP Mobile Application Studio
  - CRM Middleware Technology
- Examples
  - Offline Laptop
  - Offline Handheld
  - Online Handheld
- Special Features
  - SAP on Tablet PC
  - SAP CRM PDA Companion
- Unification with SAP NetWeaver and Web Dynpro

mySAP Mobile Business Architecture



Device

Online Applications

Offline Applications

SAP Mobile Engine

Mobile Client

Wireless Gateway or Network

SAP Web Application Server

R/3 Enterprise

SRM

...

non-SAP

CRM

Server

Mobile Client Applications: Context of Use

Disconnected for long periods

User-managed intelligent synchronization when necessary

Professional user

- Needs many sophisticated functions
- Performs detailed analysis
- Works with a large data volume
- Requires easy text input

Information

- Up-to-date, but not real-time

Offline use

- Network coverage not always available
- Integration with back office required

Example:

mySAP CRM Mobile Sales

SAP
SAP CRM Mobile Sales
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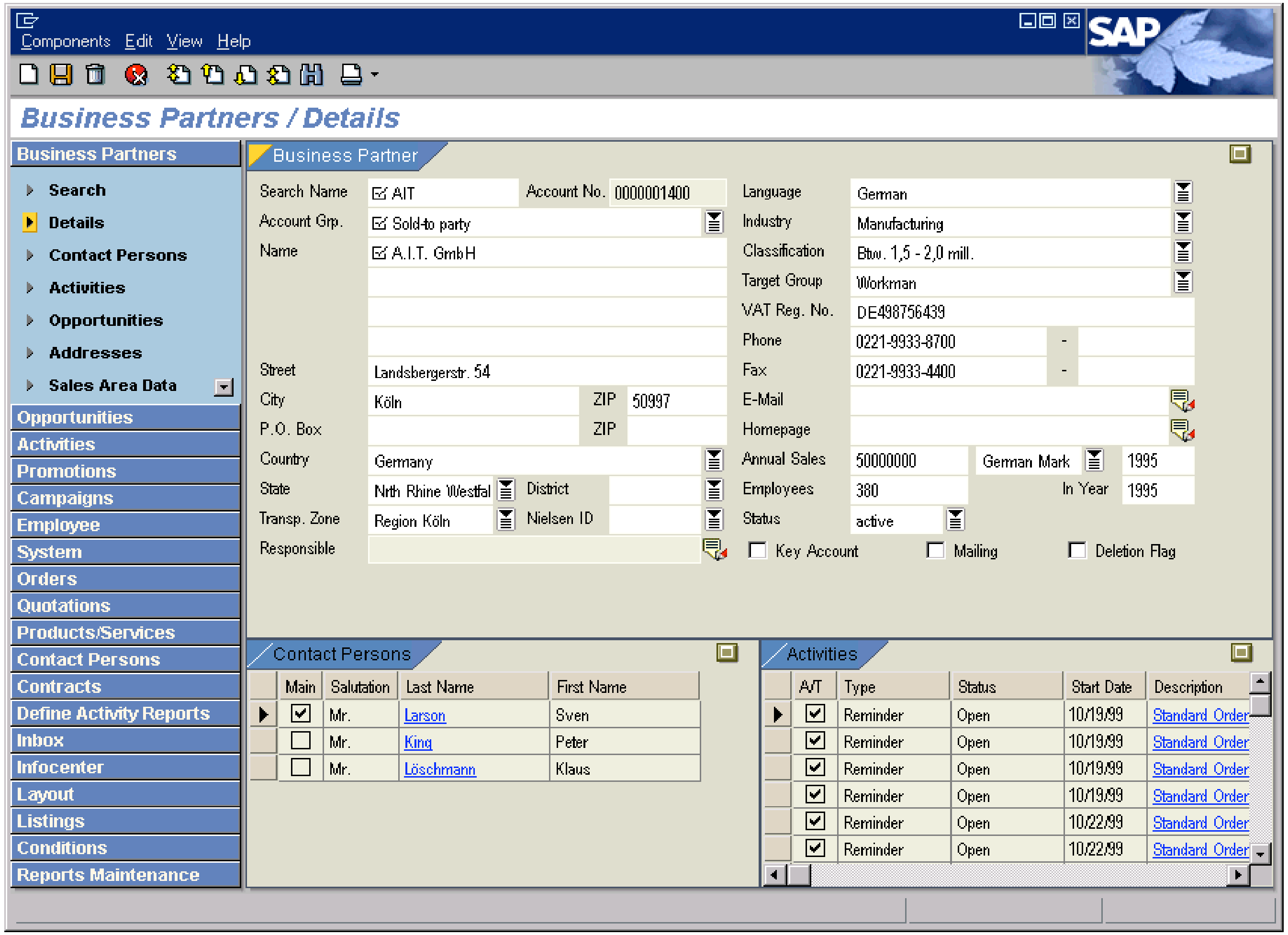
Mobile Client Applications

Mobile Client Applications provide:

- Quick identification of most important information
- Overview and easy access to details
- *Backward* and *Forward* for fast navigation
- Hyperlinks to related information

EXAMPLE: SAP CRM Mobile Sales 3.0


Components
Edit
View
Help
Business Partners / Details
Business Partners
Search
Details
Contact Persons
Activities
Opportunities
Addresses
Sales Area Data
Opportunities
Activities
Promotions
Campaigns
Employee
System
Orders
Quotations
Products/Services
Contact Persons
Contracts
Define Activity Reports
Inbox
Infocenter
Layout
Listings
Conditions
Reports Maintenance
Business Partner

Search Name: AIT
Account No.: 0000001400
Account Grp.: Sold-to party
Name: A.I.T. GmbH
Street: Landsbergerstr. 54
City: Köln
ZIP: 50997
P.O. Box:
ZIP:
Country: Germany
State: Nrth Rhine Westfal
District:
Transp. Zone: Region Köln
Nielsen ID:
Responsible:
Language: German
Industry: Manufacturing
Classification: Btw. 1,5 - 2,0 mill.
Target Group: Workman
VAT Reg. No.: DE498756439
Phone: 0221-9933-8700 -
Fax: 0221-9933-4400 -
E-Mail:
Homepage:
Annual Sales: 50000000 German Mark 1995
Employees: 380 In Year 1995
Status: active
☐ Key Account ☐ Mailing ☐ Deletion Flag

Contact Persons

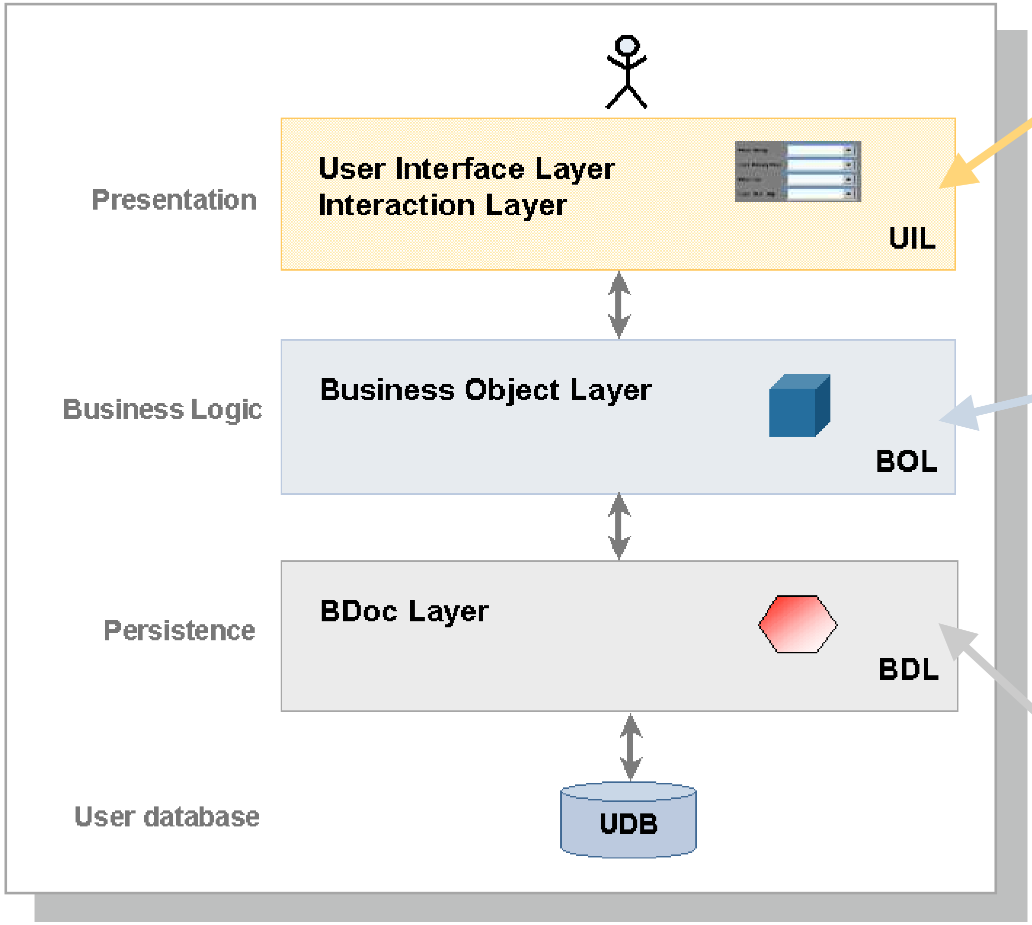
Main	Salutation	Last Name	First Name
☑	Mr.	Larson	Sven
☐	Mr.	King	Peter
☐	Mr.	Löschmann	Klaus

Activities

A/T	Type	Status	Start Date	Description
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order

Mobile Client Application Architecture

The Mobile Client Application is based on an object-oriented software development approach. The application is split up into three tiers: UIL, BOL, and BDL.



Presentation

User Interface Layer
Interaction Layer

UIL

Business Logic

Business Object Layer

BOL

Persistence

BDoc Layer

BDL

User database

UDB

User Interface Layer (UIL)

This layer interprets data for the user.

Business Object Layer (BOL)

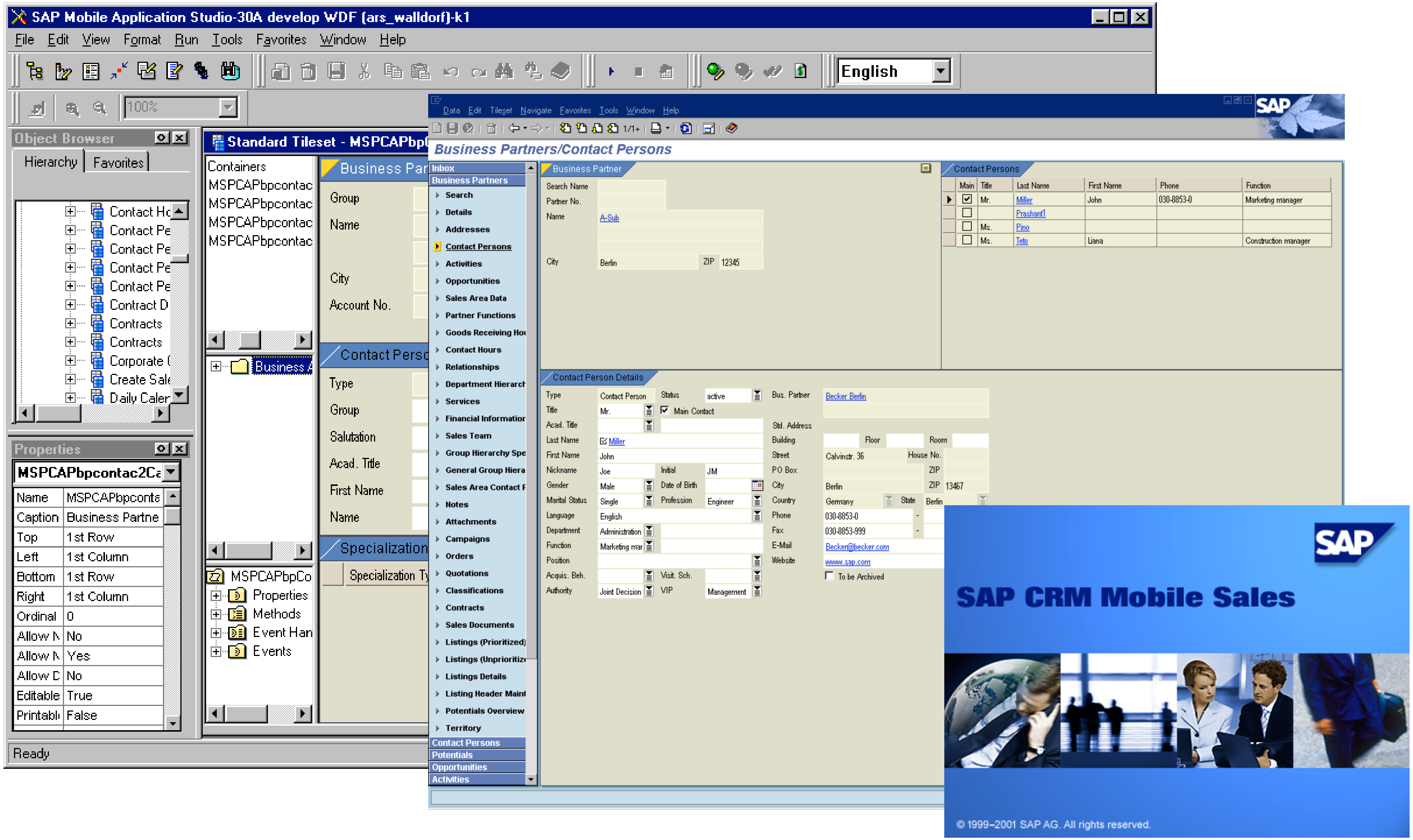
This layer validates user input, business rules, and other standard operations such as Save, Delete, Revert, and so on. This layer delivers data to the UIL.

BDoc Layer (BDL)

This layer provides an abstraction over the underlying database and provides the required object-oriented wrapper over relational data.

SAP Mobile Application Studio

Tailoring Mobile Solutions to Your Business Requirements


SAP Mobile Application Studio-30A develop WDF (ars_walldorf)-k1
File Edit View Format Run Tools Favorites Window Help
English
100%
Object Browser
Hierarchy Favorites
Contact Hc
Contact Pe
Contact Pe
Contact Pe
Contact Pe
Contract D
Contracts
Contracts
Corporate (
Create Sale
Daily Caler
Properties
Standard Tileset - MSPCAPbp(
Containers
MSPCAPbpcontac
MSPCAPbpcontac
MSPCAPbpcontac
MSPCAPbpcontac
Business A
MSPCAPbpCo
Properties
Methods
Event Han
Events
Business Par
Group
Name
City
Account No.
Contact Perso
Type
Group
Salutation
Acad. Title
First Name
Name
Specialization
Specialization Ty
Ready
Data Edit Tileset Navigate Favorites Tools Window Help
1/1+
Business Partners/Contact Persons
Inbox
Business Partners
Search
Details
Addresses
Contact Persons
Activities
Opportunities
Sales Area Data
Partner Functions
Goods Receiving Hou
Contact Hours
Relationships
Department Hierarch
Services
Financial Informatior
Sales Team
Group Hierarchy Spe
General Group Hiera
Sales Area Contact P
Notes
Attachments
Campaigns
Orders
Quotations
Classifications
Contracts
Sales Documents
Listings (Prioritized)
Listings (Unprioritize
Listings Details
Listing Header Maint
Potentials Overview
Territory
Contact Persons
Potentials
Opportunities
Activities
SAP
SAP CRM Mobile Sales
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MSPCAPbpcontac2Ca

Name	MSPCAPbpconts
Caption	Business Partne
Top	1st Row
Left	1st Column
Bottom	1st Row
Right	1st Column
Ordinal	0
Allow N	No
Allow N	Yes
Allow D	No
Editable	True
Printabl	False

Business Partner

Search Name
Partner No.
Name: A-Sub
City: Berlin ZIP: 12345

Contact Persons

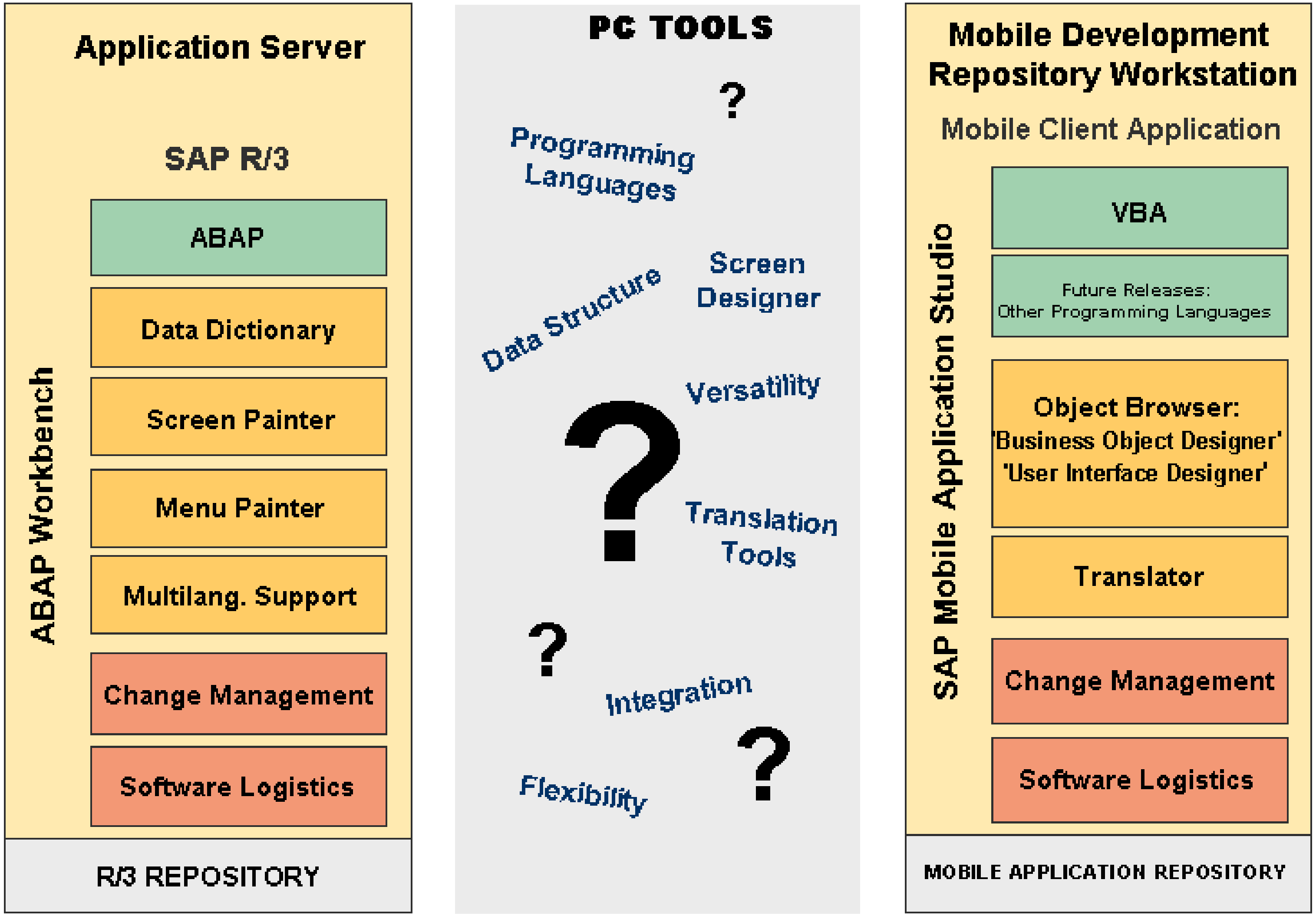
Main	Title	Last Name	First Name	Phone	Function
☑	Mr.	Miller	John	030-8853-0	Marketing manager
☐		Prashant1			
☐	Ms.	Pino			
☐	Ms.	Teto	Liana		Construction manager

Contact Person Details

Type: Contact Person
Status: active
Bus. Partner: Becker Berlin
Title: Mr.
☑ Main Contact
Acad. Title:
Std. Address
Last Name: Miller
Building: Floor: Room:
First Name: John
Street: Calvinstr. 36 House No.:
Nickname: Joe Initial: JM
PO Box: ZIP:
Gender: Male Date of Birth:
City: Berlin ZIP: 13467
Marital Status: Single Profession: Engineer
Country: Germany State: Berlin
Language: English
Phone: 030-8853-0
Department: Administration
Fax: 030-8853-999
Function: Marketing mar
E-Mail: Becken@becker.com
Position:
Website: www.sap.com
Acquis. Beh.: Visit. Sch.:
☐ To be Archived
Authority: Joint Decision VIP: Management

Why the SAP Mobile Application Studio?

With the introduction of laptop solutions, there was a continuing demand for an integrated development environment providing the same degree of flexibility, functionality, and versatility as the ABAP Development Workbench.



Application Server

SAP R/3

ABAP Workbench

- ABAP
- Data Dictionary
- Screen Painter
- Menu Painter
- Multilang. Support
- Change Management
- Software Logistics

R/3 REPOSITORY

PC TOOLS

- Programming Languages
- Data Structure
- Screen Designer
- Versatility
- Translation Tools
- Integration
- Flexibility

Mobile Development Repository Workstation

Mobile Client Application

SAP Mobile Application Studio

- VBA
- Future Releases: Other Programming Languages
- Object Browser: 'Business Object Designer' 'User Interface Designer'
- Translator
- Change Management
- Software Logistics

MOBILE APPLICATION REPOSITORY

SAP Mobile Application Studio: Key Features

SAP Mobile Application Studio

CRM 3.0 B SR 01 Copyright © 2000 - 2001 SAP AG

How Does the SAP Mobile Application Studio Simplify Your Work?

✓ Visual modeling reduces manual coding to a minimum

✓ Easy to learn and use

✓ Modification support

✓ Change management and software logistics

✓ Integration with SAP Middleware technology

✓ Multilingual and translation capability

✓ Effortless generation

SAP Mobile Application Studio: Typical Scenarios

SAP
SAP Mobile Application Studio
Products/Services/Search
CRM 3.0 B SR 01 Copyright © 2000 - 2001 SAP AG

Context:

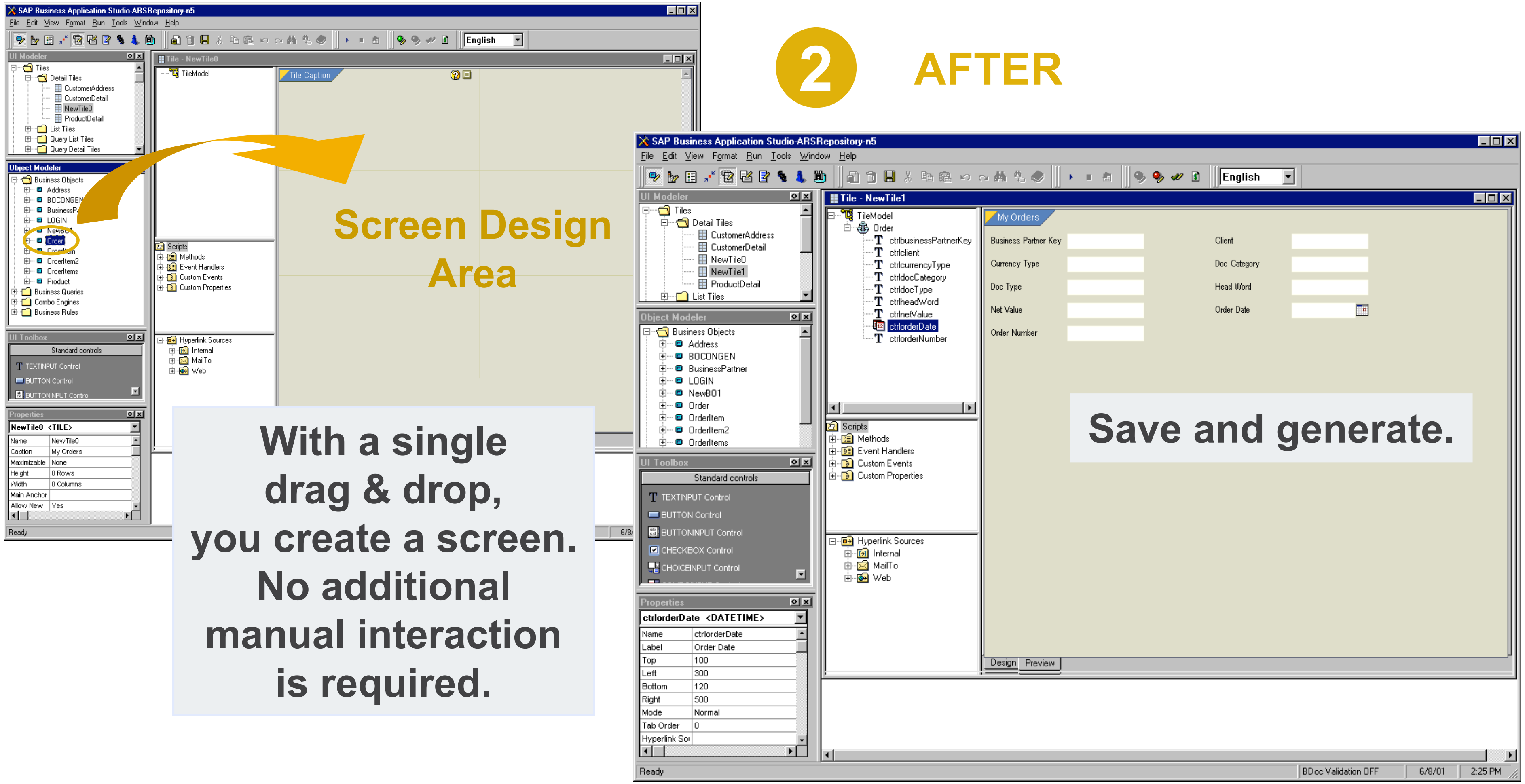
- Designing a mobile solution
- Enhancing mobile solution functions

To do this…	*You use these MAS tools…*
Design the screens (tile, tile set, component, application)	Object Browser, Tile Wizard and Tile Set Wizard
Model the underlying business logic (business objects, relationships, queries, business rules)	Object Browser
[Change management:] Track changes, view previous versions, analyze differences, resolve collisions	Change list Browser, Collision Browser, Version Tree
Generate the application	Generator
[Software logistics:] Transport development objects to other repositories or systems, manage upgrades	Upgrade Console, Transport Tool
Create system messages, translate interface text	Message Editor, Translator
Logically group development objects to make them industry-specific	Template Modeler

Easy Screen Design: Two-Part Procedure

① **BEFORE**

② **AFTER**



SAP Business Application Studio-ARSRepository-n5
File Edit View Format Run Tools Window Help
English
UI Modeler
Tiles
Detail Tiles
CustomerAddress
CustomerDetail
NewTile0
ProductDetail
List Tiles
Query List Tiles
Query Detail Tiles
Object Modeler
Business Objects
Address
BOCONGEN
LOGIN
Order
OrderItem2
OrderItems
Product
Business Queries
Combo Engines
Business Rules
UI Toolbox
Standard controls
TEXTINPUT Control
BUTTON Control
BUTTONINPUT Control
Tile - NewTile0
TileModel
Tile Caption
Scripts
Methods
Event Handlers
Custom Events
Custom Properties
Hyperlink Sources
Internal
MailTo
Web
Ready

Screen Design Area

Properties

NewTile0 <TILE>

Name	NewTile0
Caption	My Orders
Maximizable	None
Height	0 Rows
Width	0 Columns
Main Anchor	
Allow New	Yes

With a single drag & drop, you create a screen. No additional manual interaction is required.

SAP Business Application Studio-ARSRepository-n5
File Edit View Format Run Tools Window Help
English
UI Modeler
Tiles
Detail Tiles
CustomerAddress
CustomerDetail
NewTile0
NewTile1
ProductDetail
List Tiles
Object Modeler
Business Objects
Address
BOCONGEN
BusinessPartner
LOGIN
NewBO1
Order
OrderItem
OrderItem2
OrderItems
UI Toolbox
Standard controls
TEXTINPUT Control
BUTTON Control
BUTTONINPUT Control
CHECKBOX Control
CHOICEINPUT Control
Tile - NewTile1
TileModel
Order
ctrlbusinessPartnerKey
ctrlclient
ctrlcurrencyType
ctrldocCategory
ctrldocType
ctrlheadWord
ctrlnetValue
ctrlorderDate
ctrlorderNumber
Scripts
Methods
Event Handlers
Custom Events
Custom Properties
Hyperlink Sources
Internal
MailTo
Web
My Orders
Business Partner Key
Currency Type
Doc Type
Net Value
Order Number
Client
Doc Category
Head Word
Order Date
Design
Preview
Ready
BDoc Validation OFF
6/8/01
2:25 PM

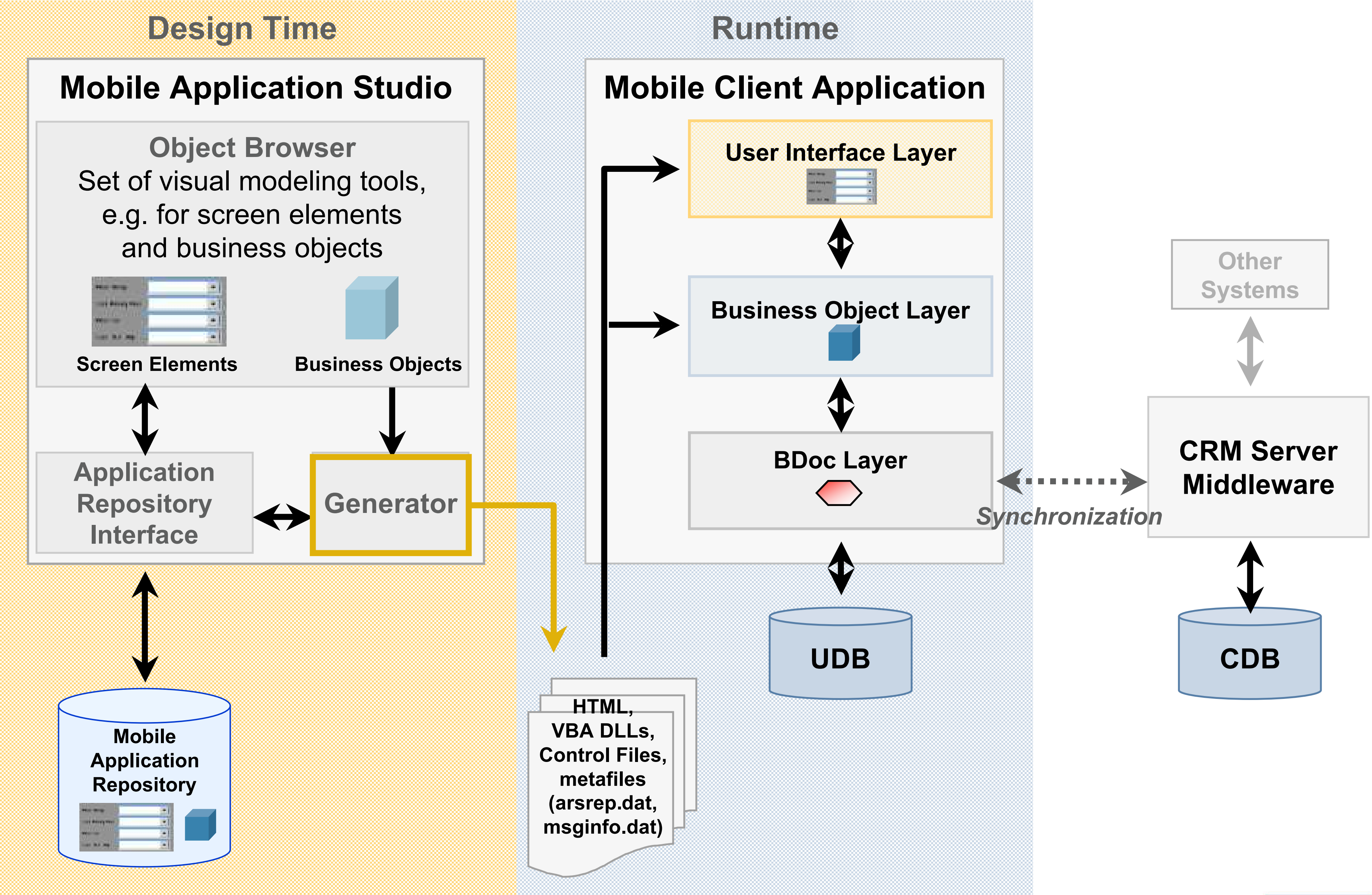
Properties

ctrlorderDate <DATETIME>

Name	ctrlorderDate
Label	Order Date
Top	100
Left	300
Bottom	120
Right	500
Mode	Normal
Tab Order	0
Hyperlink Sou	

Save and generate.

Design Time and Runtime



Design Time

Mobile Application Studio

Object Browser
Set of visual modeling tools, e.g. for screen elements and business objects

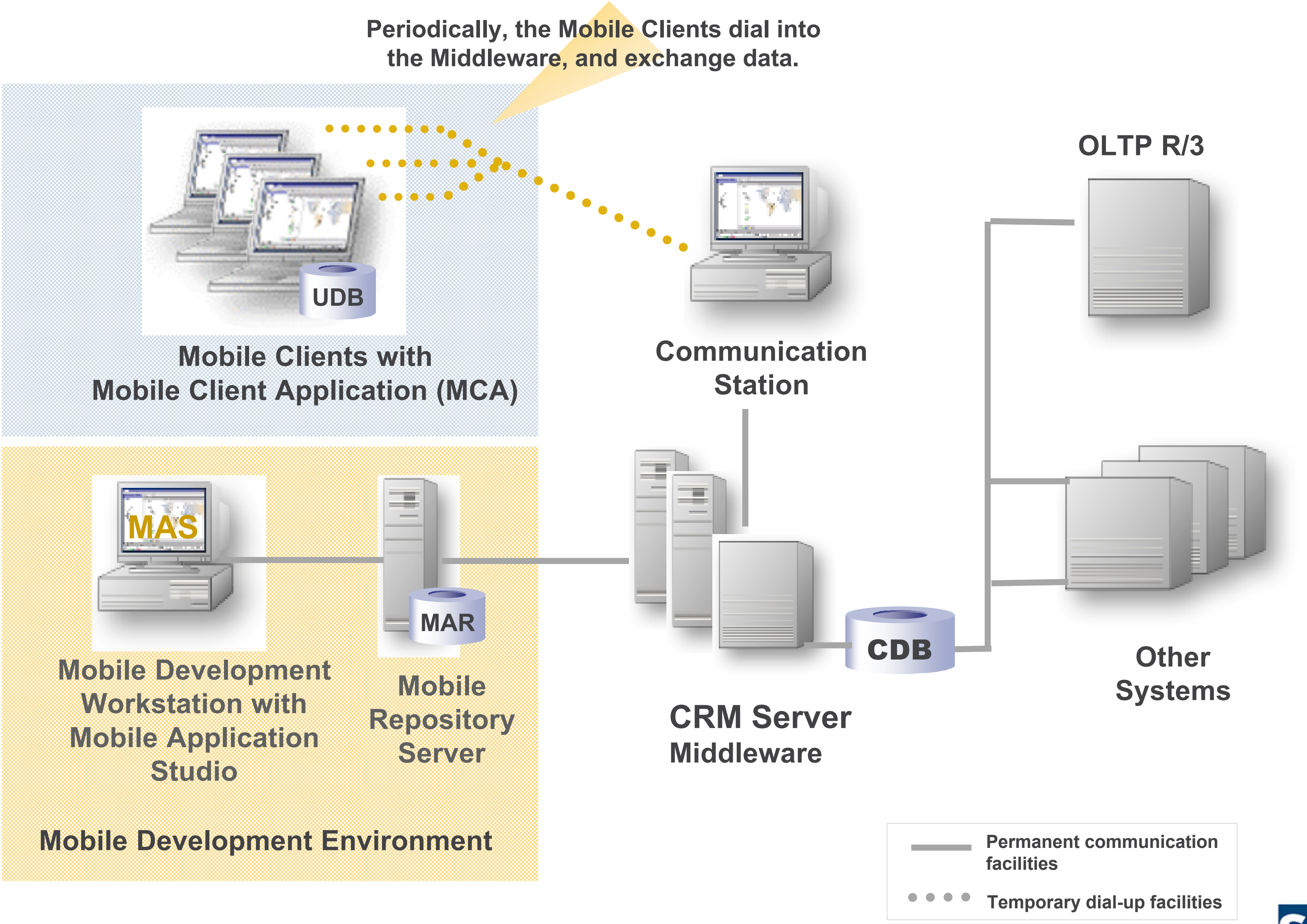
Screen Elements
Business Objects
Application Repository Interface
Generator
Mobile Application Repository

Runtime

Mobile Client Application

User Interface Layer
Business Object Layer
BDoc Layer
UDB
HTML, VBA DLLs, Control Files, metafiles (arsrep.dat, msginfo.dat)
Synchronization
Other Systems
CRM Server Middleware
CDB

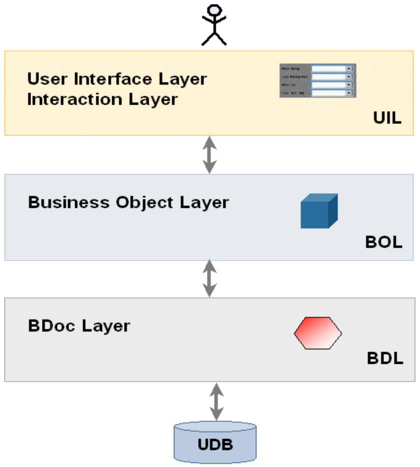
mySAP CRM System Landscape: Mobile Scenario



Periodically, the Mobile Clients dial into the Middleware, and exchange data.

UDB
Mobile Clients with
Mobile Client Application (MCA)
Communication Station
OLTP R/3
MAS
MAR
Mobile Development Workstation with Mobile Application Studio
Mobile Repository Server
Mobile Development Environment
CDB
CRM Server
Middleware
Other Systems
Permanent communication facilities
Temporary dial-up facilities

Mobile Client Applications: Architecture Summary


User Interface Layer
Interaction Layer
UIL
Business Object Layer
BOL
BDoc Layer
BDL
UDB

Based on modern industry standards

- Uses object-oriented approach
- Based on COM/DCOM
- Integrates Microsoft Visual Basic for Applications (VBA) for business rule development
- Highly configurable and reusable objects

Browser-based environment

Flexible deployment

- Scalable to thousands of offline users

Development environment

SAP
SAP Mobile Application Studio
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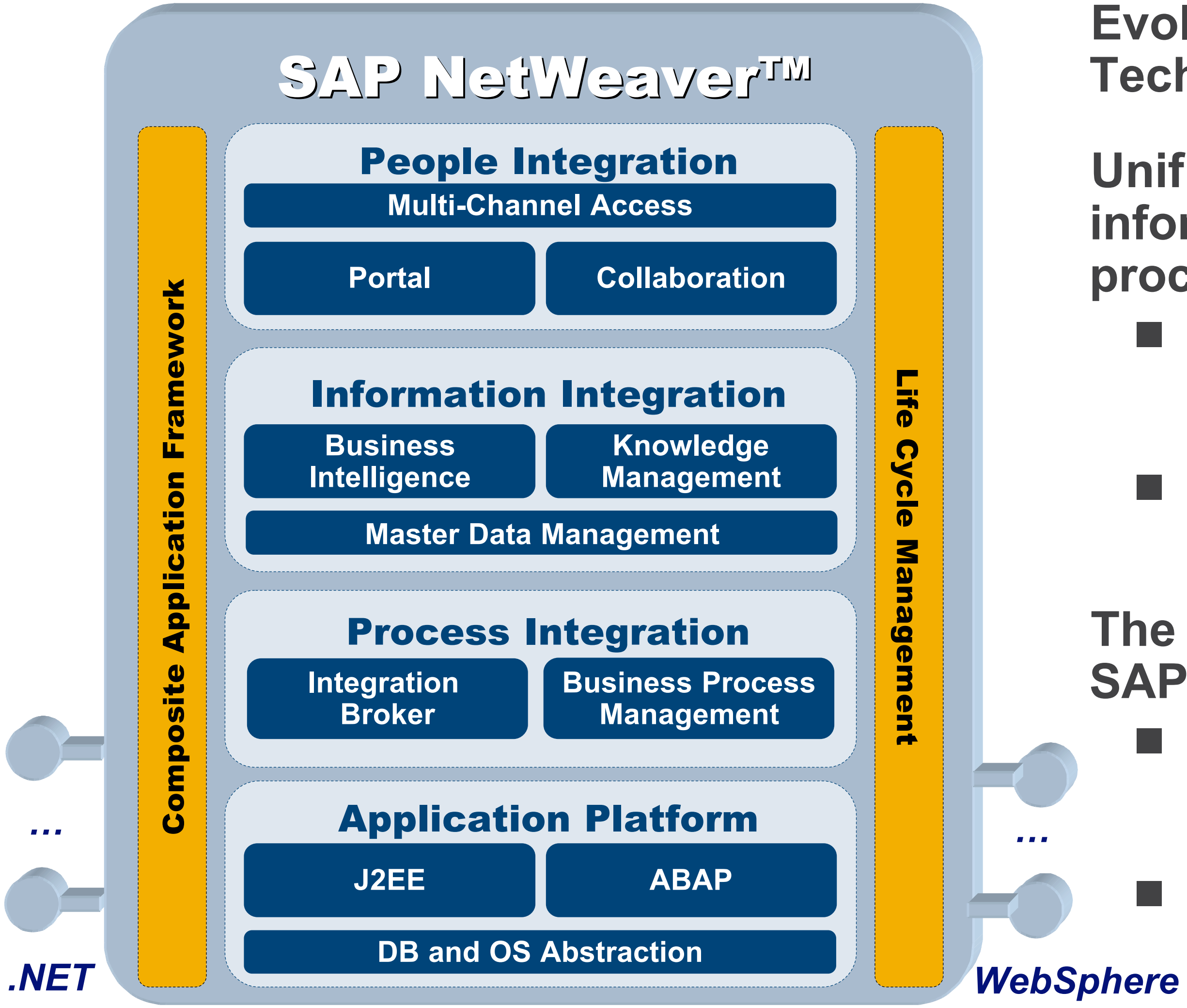
- SAP Mobile Application Studio
  (integrated visual development environment)
- Mobile Application Repository for storing metadata
- Generators for generating application-specific runtime objects

Open to third-party systems

Agenda

- Overview
  - mySAP Mobile Business Vision
  - Online Integration
  - SAP Mobile Infrastructure
  - SAP Mobile Application Studio
  - CRM Middleware Technology
- Examples
  - Offline Laptop
  - Offline Handheld
  - Online Handheld
- Special Features
  - SAP on Tablet PC
  - SAP CRM PDA Companion
- Unification with SAP NetWeaver and Web Dynpro

SAP NetWeaver™
The integration and application platform for lower TCO


SAP NetWeaver™
People Integration
Multi-Channel Access
Portal
Collaboration
Information Integration
Business Intelligence
Knowledge Management
Master Data Management
Process Integration
Integration Broker
Business Process Management
Application Platform
J2EE
ABAP
DB and OS Abstraction
Composite Application Framework
Life Cycle Management
…
…
.NET
WebSphere

Evolution of mySAP Technology

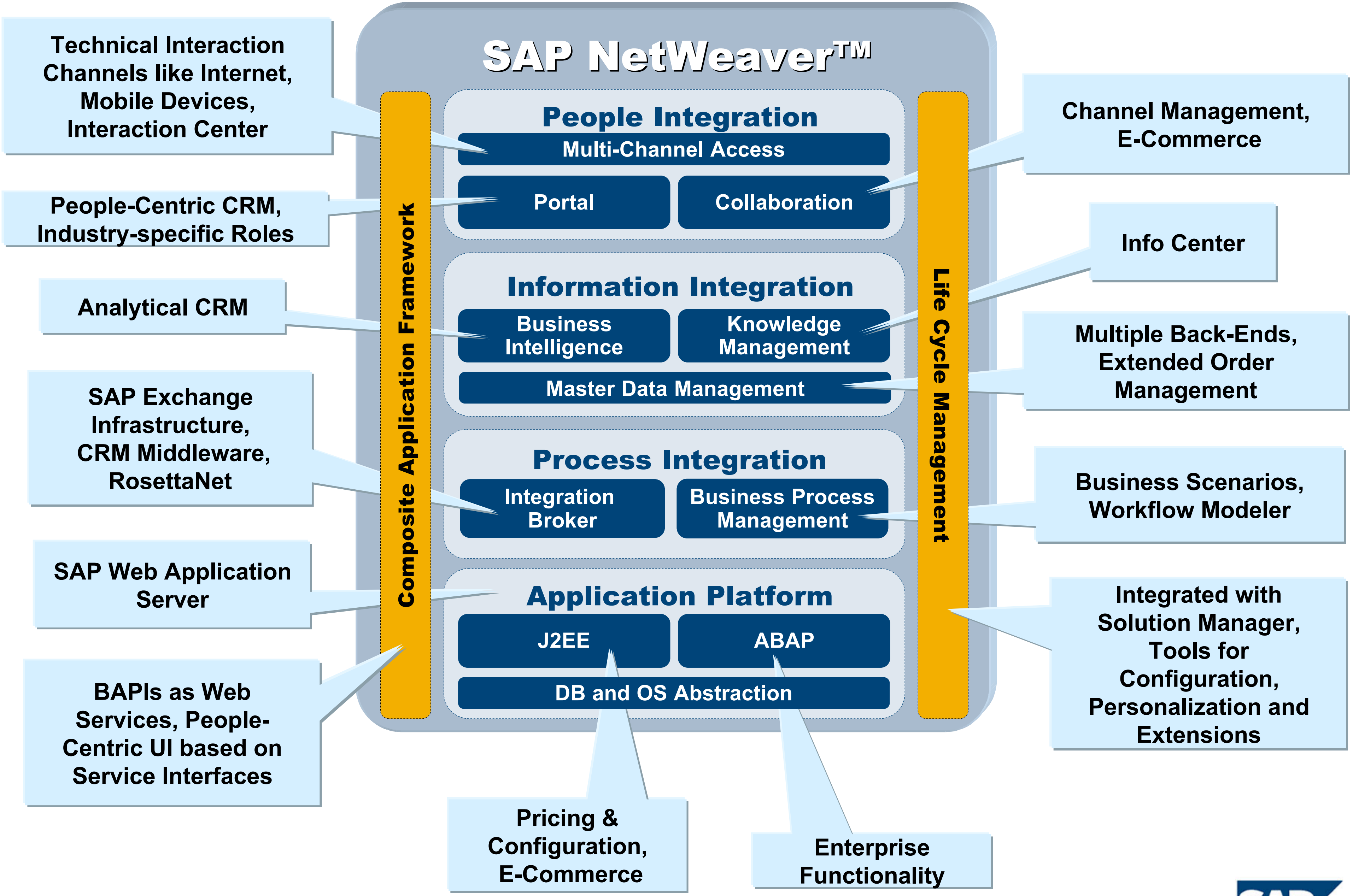
Unifies and aligns people, information and business processes

- Integrates across technologies and organizational boundaries
- A safe choice with full .NET and J2EE interoperability

The business foundation for SAP and partners

- Powers business-ready solutions that reduce custom integration
- Its Enterprise Services Architecture increases business process flexibility

How mySAP CRM Pushes SAP NetWeaver Ahead



SAP NetWeaver™
Composite Application Framework
People Integration
Multi-Channel Access
Portal
Collaboration
Information Integration
Business Intelligence
Knowledge Management
Master Data Management
Process Integration
Integration Broker
Business Process Management
Application Platform
J2EE
ABAP
DB and OS Abstraction
Life Cycle Management

Technical Interaction Channels like Internet, Mobile Devices, Interaction Center

People-Centric CRM, Industry-specific Roles

Analytical CRM

SAP Exchange Infrastructure, CRM Middleware, RosettaNet

SAP Web Application Server

BAPIs as Web Services, People-Centric UI based on Service Interfaces

Channel Management, E-Commerce

Info Center

Multiple Back-Ends, Extended Order Management

Business Scenarios, Workflow Modeler

Integrated with Solution Manager, Tools for Configuration, Personalization and Extensions

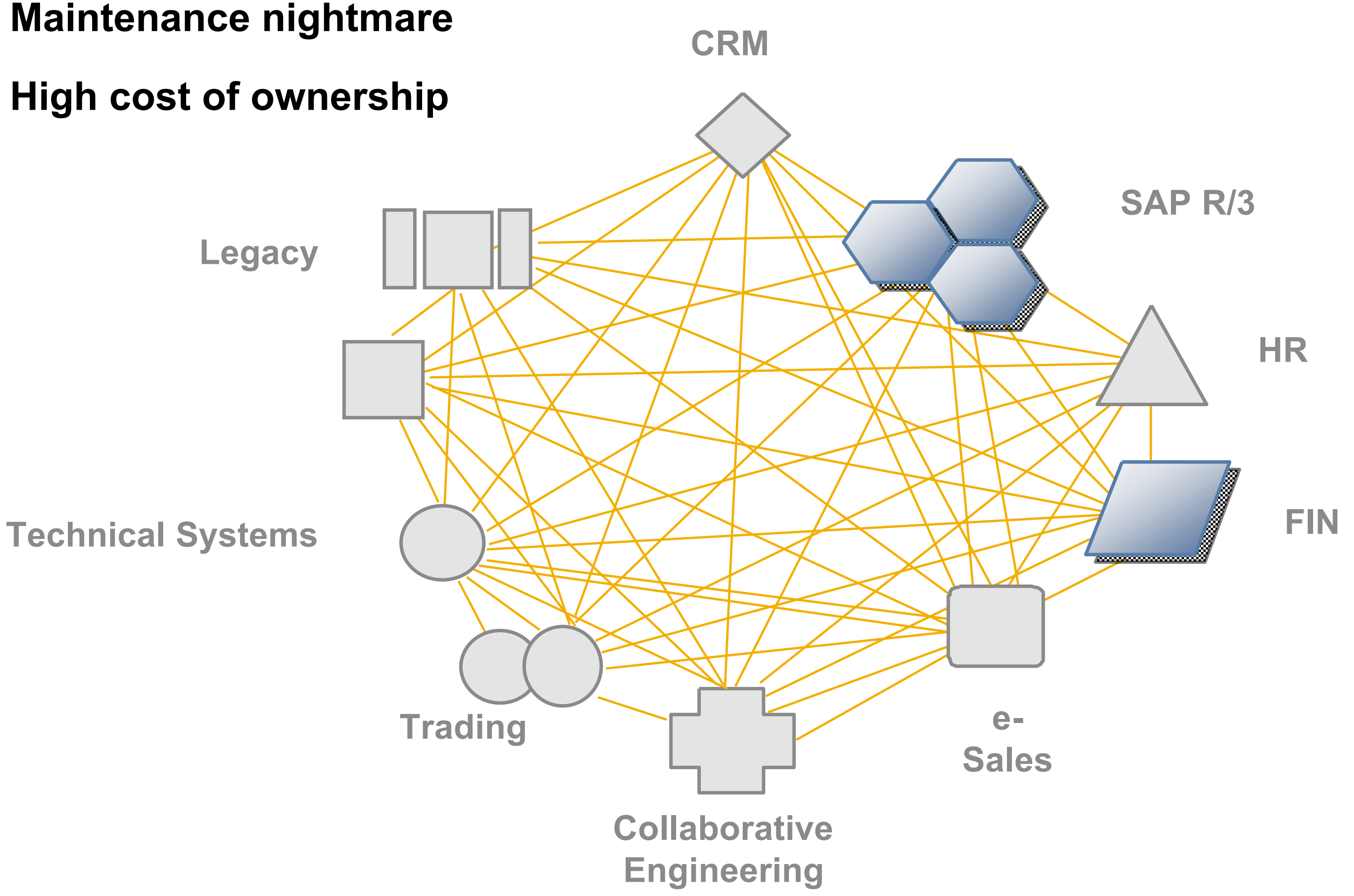
Pricing & Configuration, E-Commerce

Enterprise Functionality

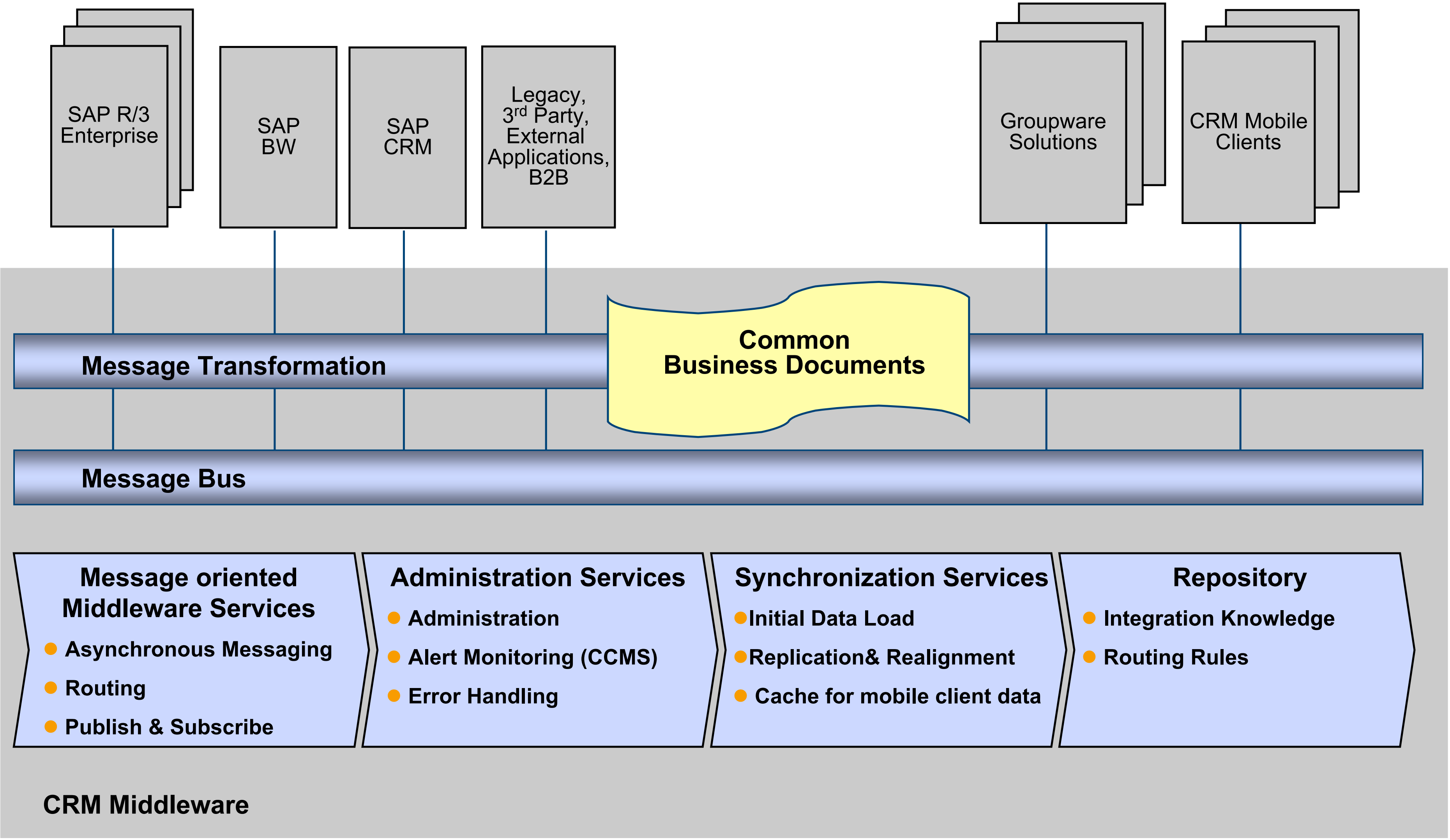
One Complex Customer‘s Integration Landscape

Point-to-Point ‘spaghetti’ Integration

- Maintenance nightmare
- High cost of ownership


CRM
SAP R/3
Legacy
HR
FIN
Technical Systems
Trading
e-Sales
Collaborative Engineering

mySAP CRM EAI Architecture



SAP R/3 Enterprise

SAP BW

SAP CRM

Legacy, 3rd Party, External Applications, B2B

Groupware Solutions

CRM Mobile Clients

Message Transformation

Common Business Documents

Message Bus

Message oriented Middleware Services
- Asynchronous Messaging
- Routing
- Publish & Subscribe

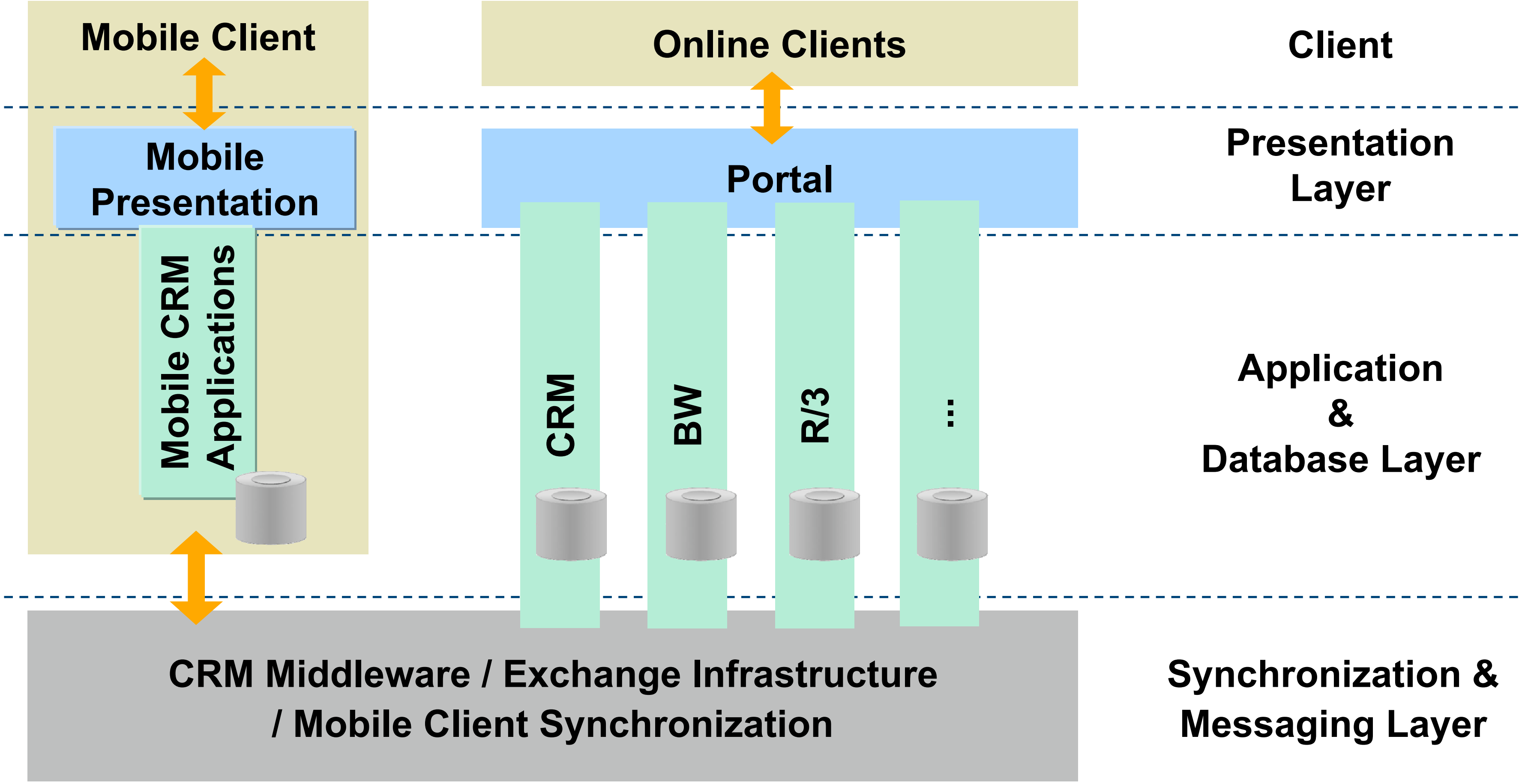
Administration Services
- Administration
- Alert Monitoring (CCMS)
- Error Handling

Synchronization Services
- Initial Data Load
- Replication& Realignment
- Cache for mobile client data

Repository
- Integration Knowledge
- Routing Rules

CRM Middleware

Architecture – mySAP CRM Architectural Layers



Mobile Client

Mobile Presentation

Mobile CRM Applications

Online Clients

Portal

CRM

BW

R/3

...

CRM Middleware / Exchange Infrastructure / Mobile Client Synchronization

Client

Presentation Layer

Application & Database Layer

Synchronization & Messaging Layer

Architecture – CRM Server

The CRM Middleware

Is an integral part of the CRM Server

Is the message hub

Requires

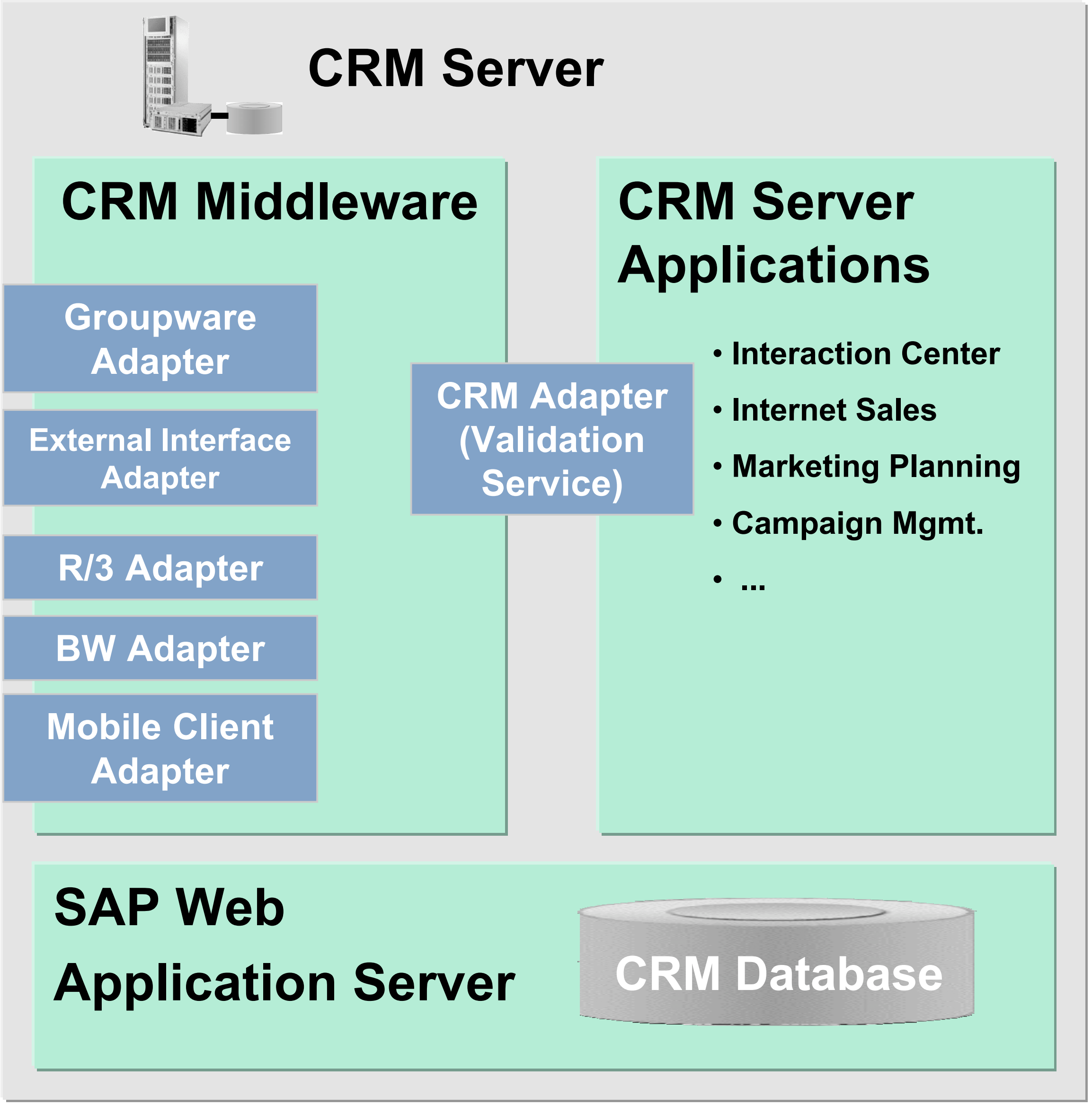
No extra software

No extra installation

No extra server

Benefit:

Reduced integration costs



CRM Server

CRM Middleware

- Groupware Adapter
- External Interface Adapter
- R/3 Adapter
- BW Adapter
- Mobile Client Adapter

CRM Adapter (Validation Service)

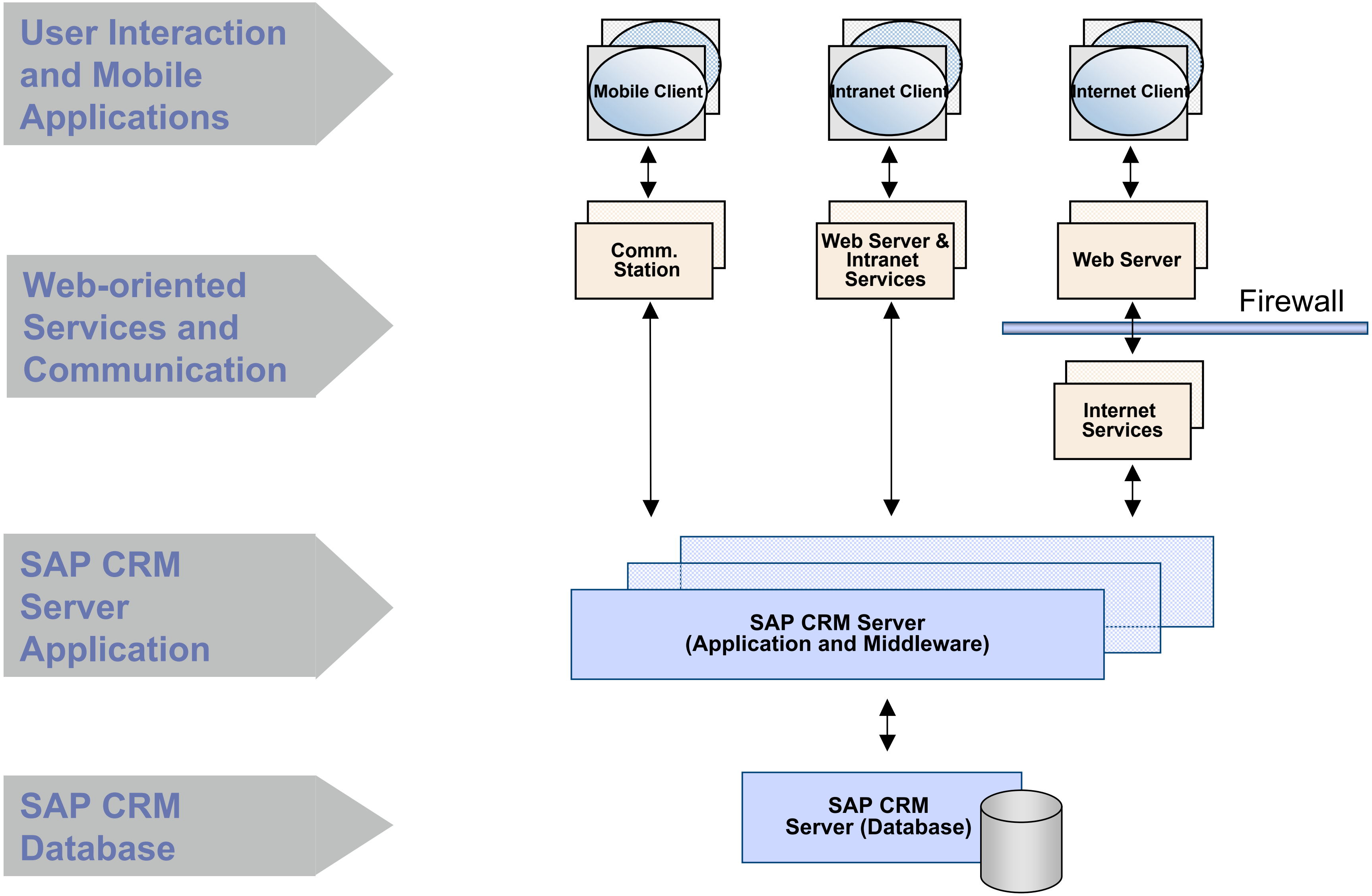
CRM Server Applications

- Interaction Center
- Internet Sales
- Marketing Planning
- Campaign Mgmt.
- ...

SAP Web Application Server

CRM Database

Scalability on all Layers



User Interaction and Mobile Applications

Mobile Client

Intranet Client

Internet Client

Web-oriented Services and Communication

Comm. Station

Web Server & Intranet Services

Web Server

Firewall

Internet Services

SAP CRM Server Application

SAP CRM Server (Application and Middleware)

SAP CRM Database

SAP CRM Server (Database)

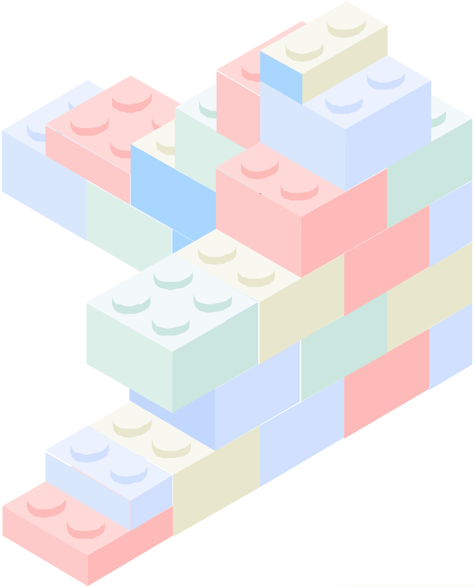
Main CRM Middleware Concepts

Site types

BDocs

Replication types

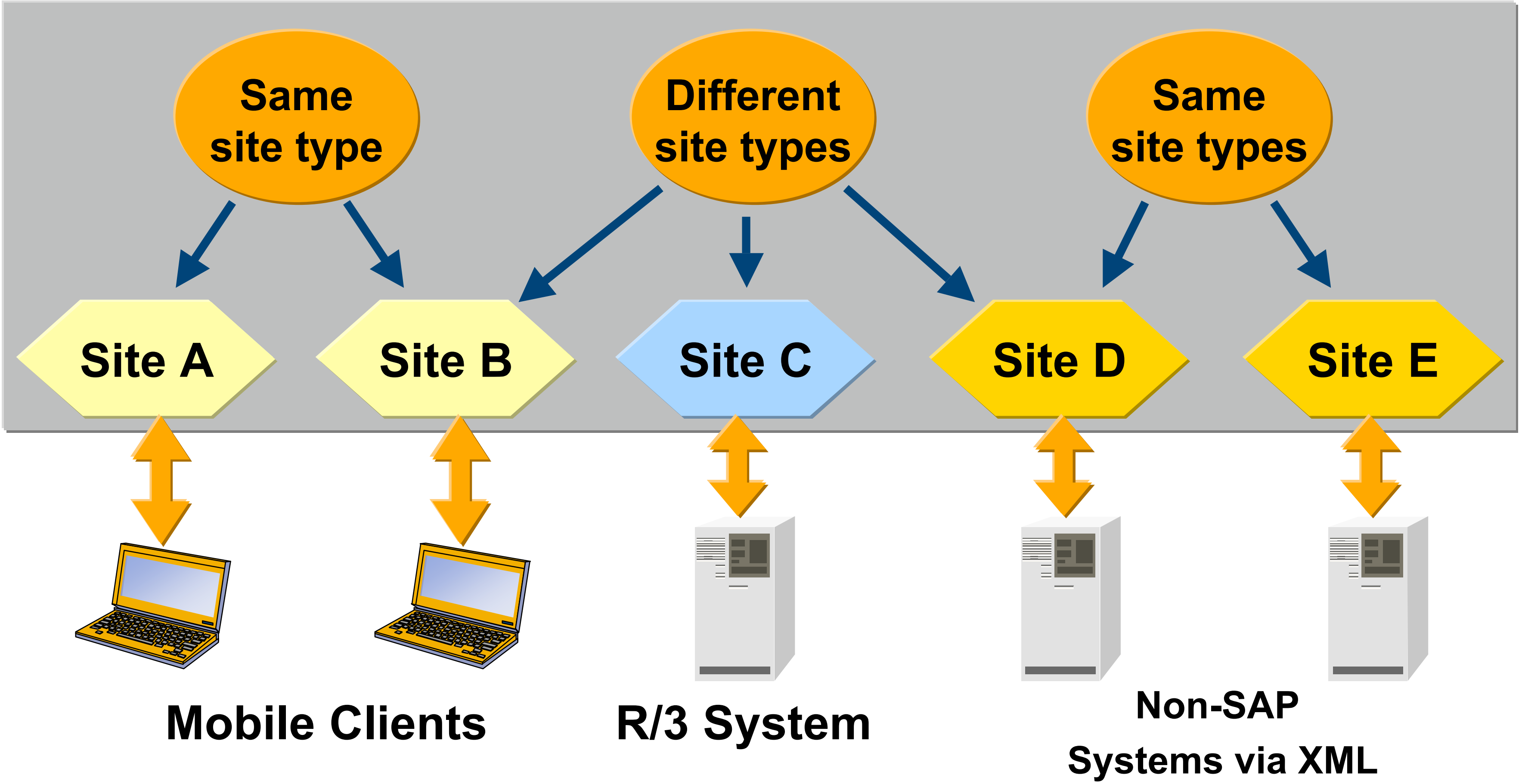
Internal data flow



Site Type Concept

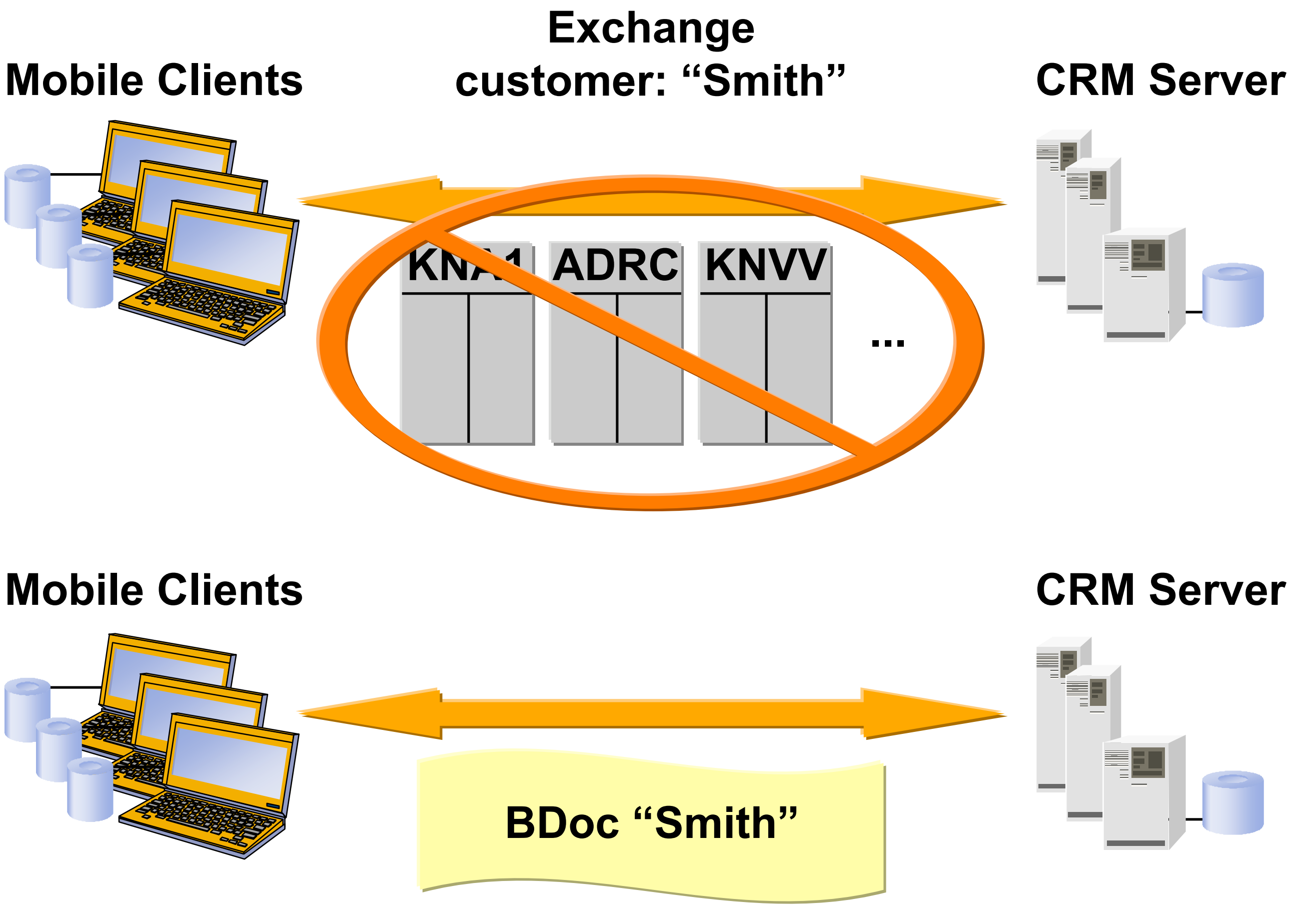
Every receiver instance is represented by an abstract site

Every site belongs to a site type, e.g. Mobile Client, R/3 system


Same site type
Different site types
Same site types
Site A
Site B
Site C
Site D
Site E
Mobile Clients
R/3 System
Non-SAP Systems via XML

Business Documents (BDocs) - Motivation

Idea: process/transport business objects as one unit



Exchange customer: “Smith”

Mobile Clients

CRM Server

KNA1 ADRC KNVV ...

Mobile Clients

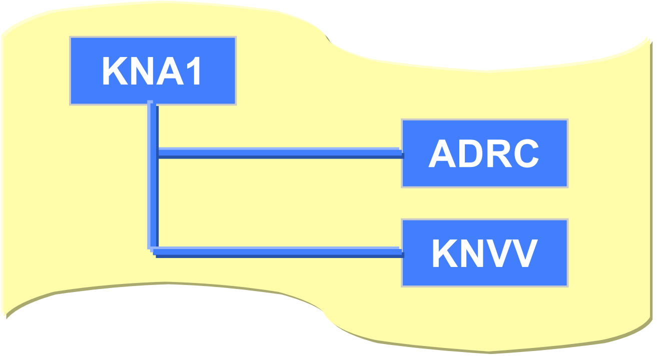
CRM Server

BDoc “Smith”

What are BDocs?

Distinction:

- BDoc type (structure)



- BDoc instance

Customer BDoc "Smith":
NAME1 = "Smith"
NAME2 = "John"
KUNNR = "2045"
....

(all fields)

- BDoc message

also: "insert" or "delete"

Customer BDoc "Smith": TASK = "update"
Fields: CITY1 = "New York", STREET = "1 Broadway"

(contains only modified fields)

More about BDoc messages

BDoc

The definition of BDoc messages does not contain implementation details

BDoc messages can be represented in various way

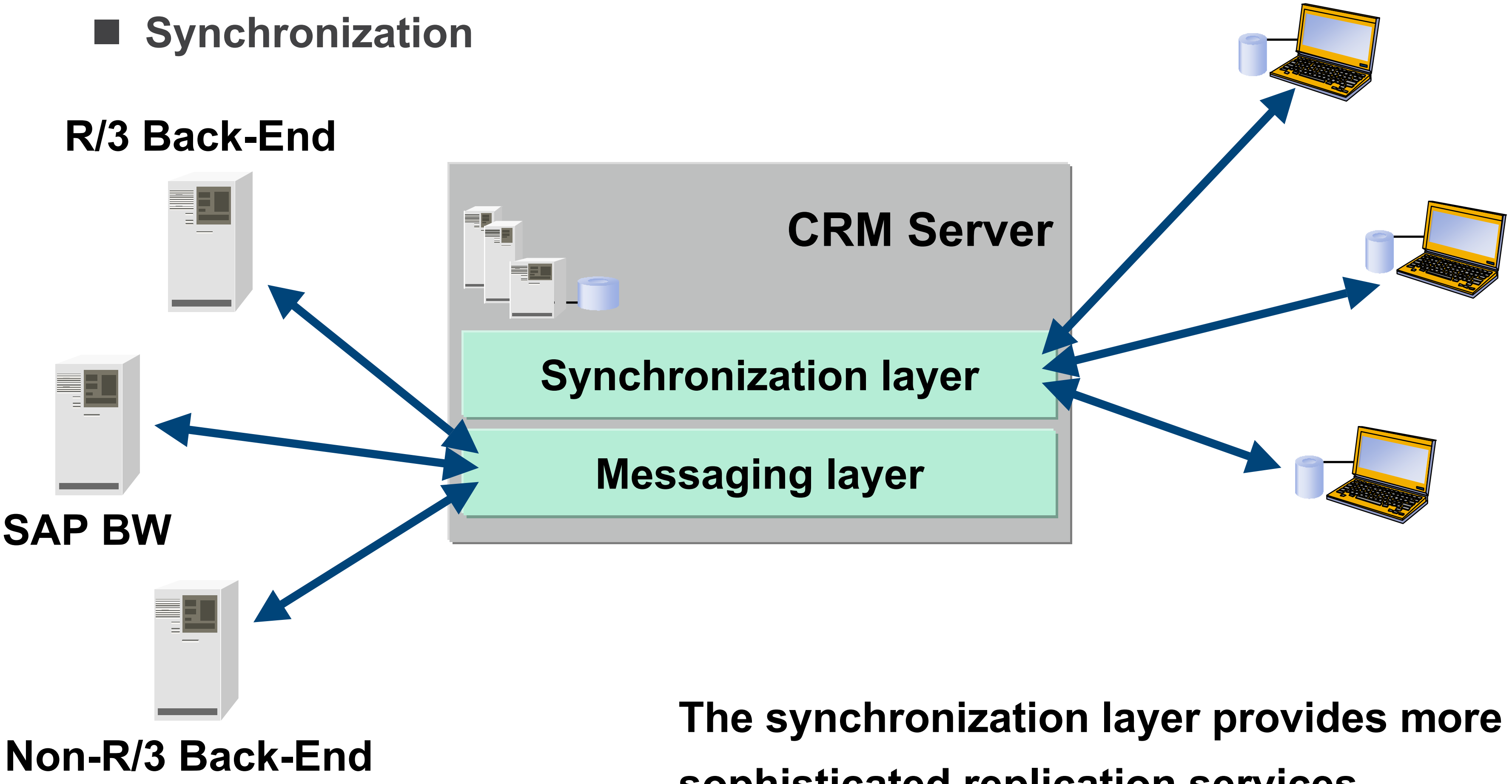
Depending on the environment an optimal representation is used, e. g.

- CRM Server: Internal tables
- Laptops: ADO record sets
- Non-SAP System: XML

Decoupling of Messaging and Synchronization

Two integration layers:

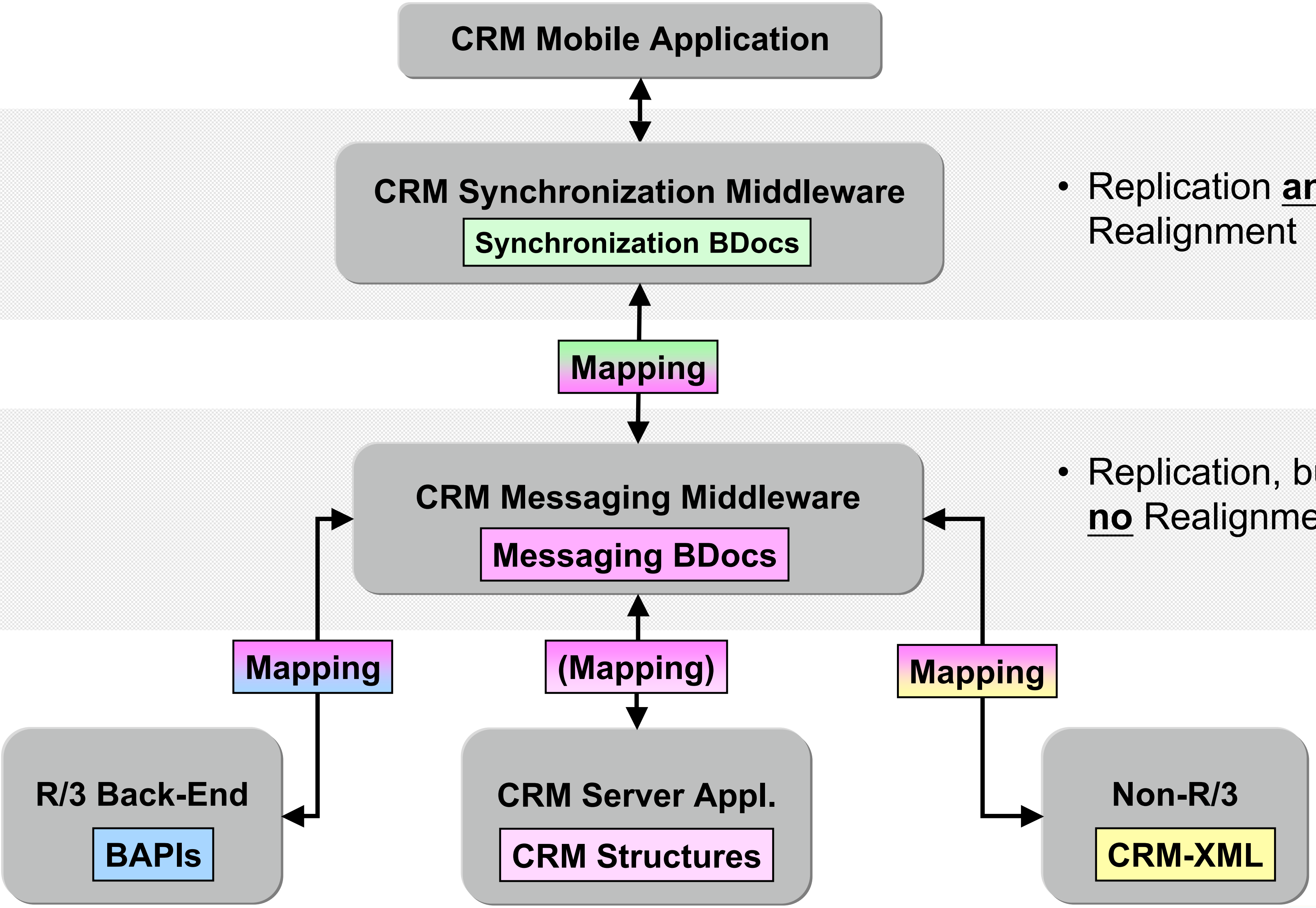
- Messaging
- Synchronization



R/3 Back-End
CRM Server
Synchronization layer
Messaging layer
SAP BW
Non-R/3 Back-End

The synchronization layer provides more sophisticated replication services

Synchronization and Messaging BDoc Classes



CRM Mobile Application

CRM Synchronization Middleware

Synchronization BDocs

Mapping

CRM Messaging Middleware

Messaging BDocs

Mapping

(Mapping)

Mapping

R/3 Back-End

BAPIs

CRM Server Appl.

CRM Structures

Non-R/3

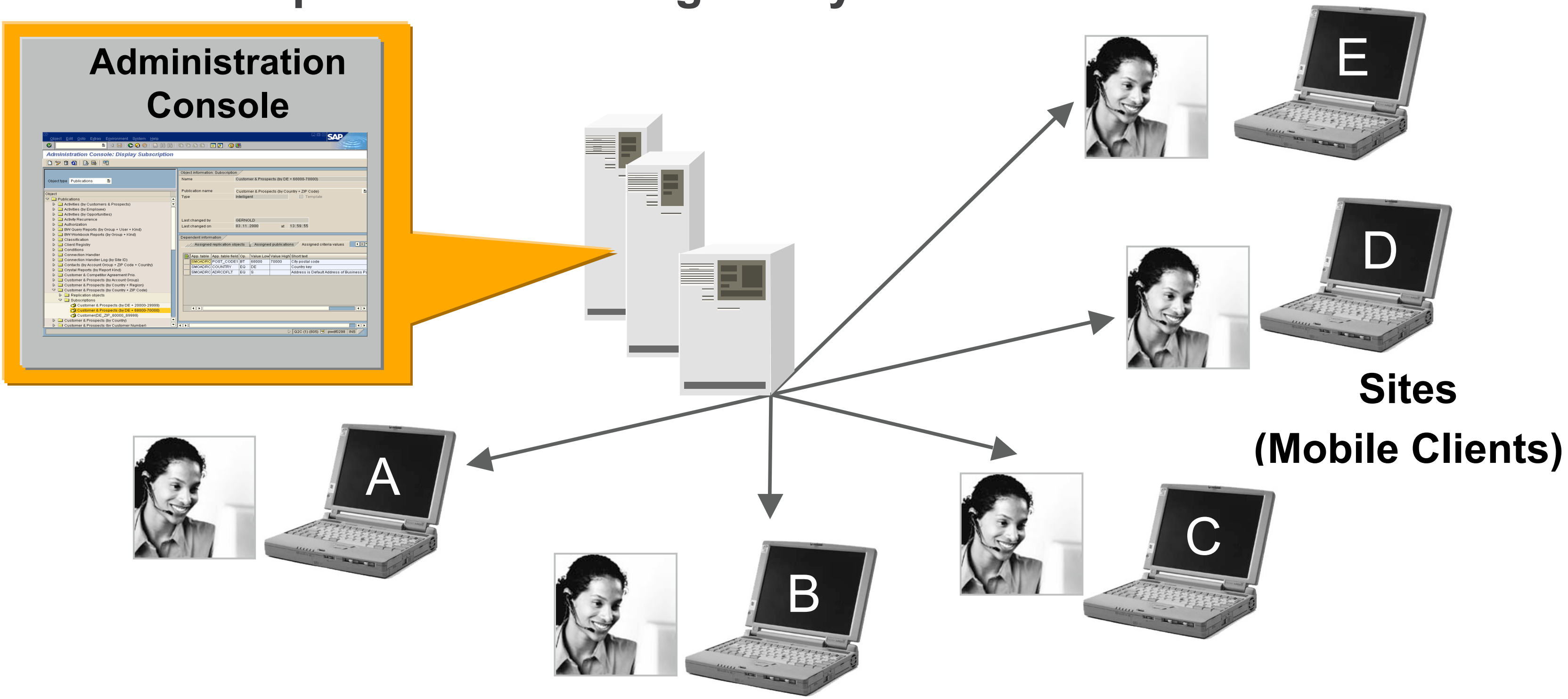
CRM-XML

- Replication **and** Realignment
- Replication, but **no** Realignment

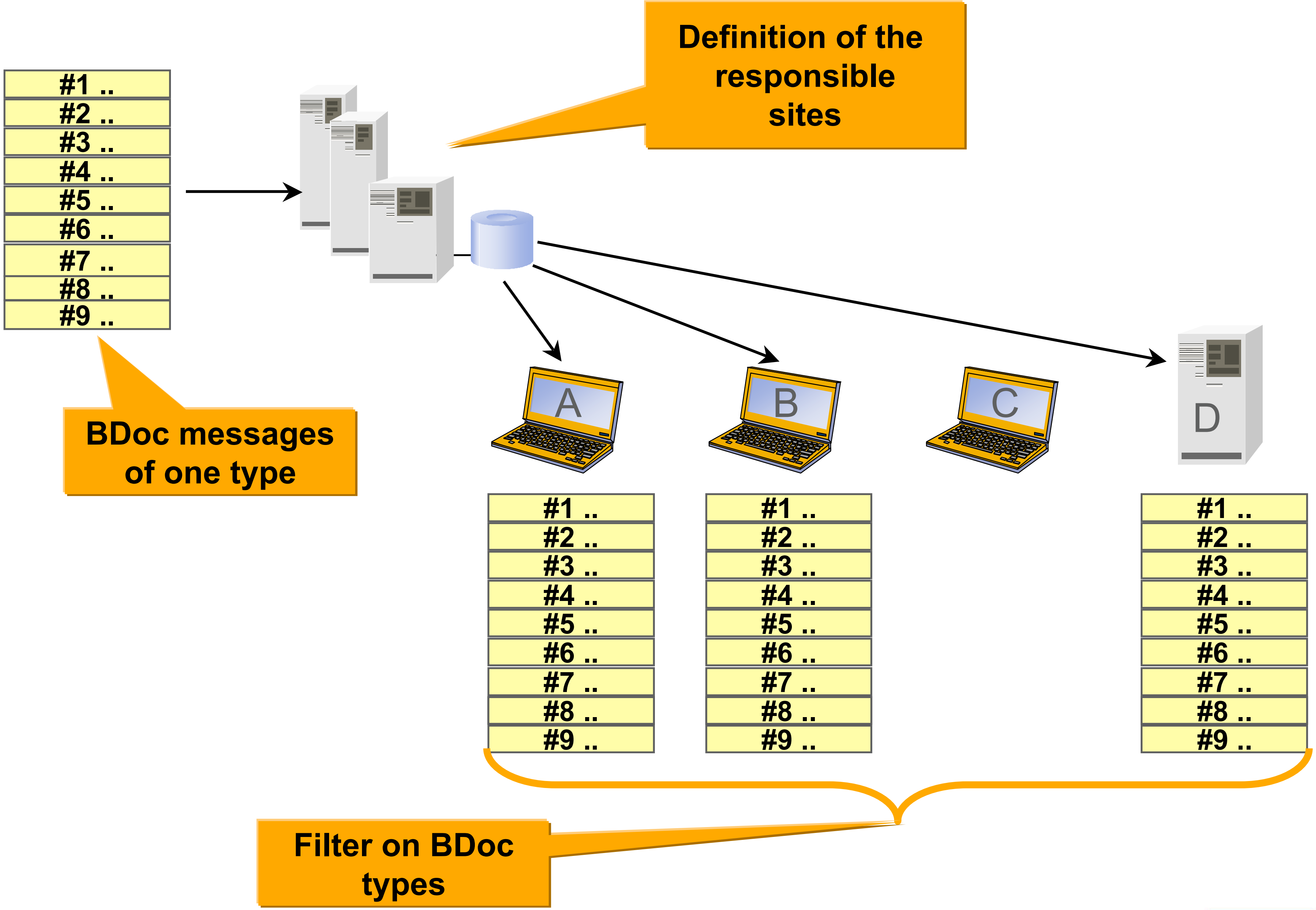
Mobile Client Synchronization – Replication Modeling

Central Replication Modeling using Administration Console

- Publish-and-subscribe concept
- Standard publications delivered by SAP
- Additional publications designed by customers


Administration Console
E
D
Sites
(Mobile Clients)
A
B
C

Unfiltered Replication

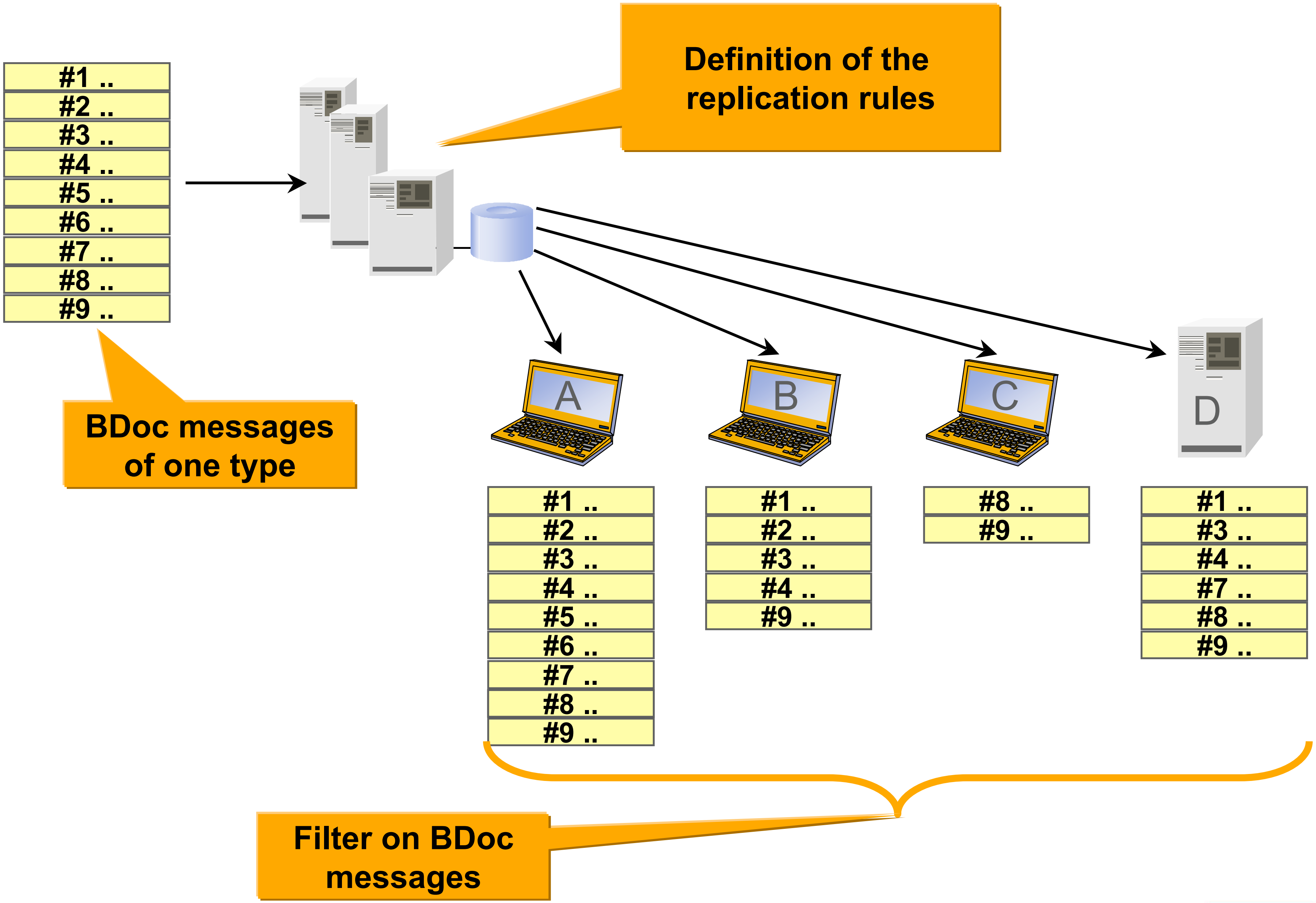

#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..
#7 ..
#8 ..
#9 ..
A
B
C
D
#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..
#7 ..
#8 ..
#9 ..
#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..
#7 ..
#8 ..
#9 ..
#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..
#7 ..
#8 ..
#9 ..

Definition of the responsible sites

BDoc messages of one type

Filter on BDoc types

Filtered Replication



Definition of the replication rules

#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..
#7 ..
#8 ..
#9 ..

BDoc messages of one type

A:
#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..
#7 ..
#8 ..
#9 ..

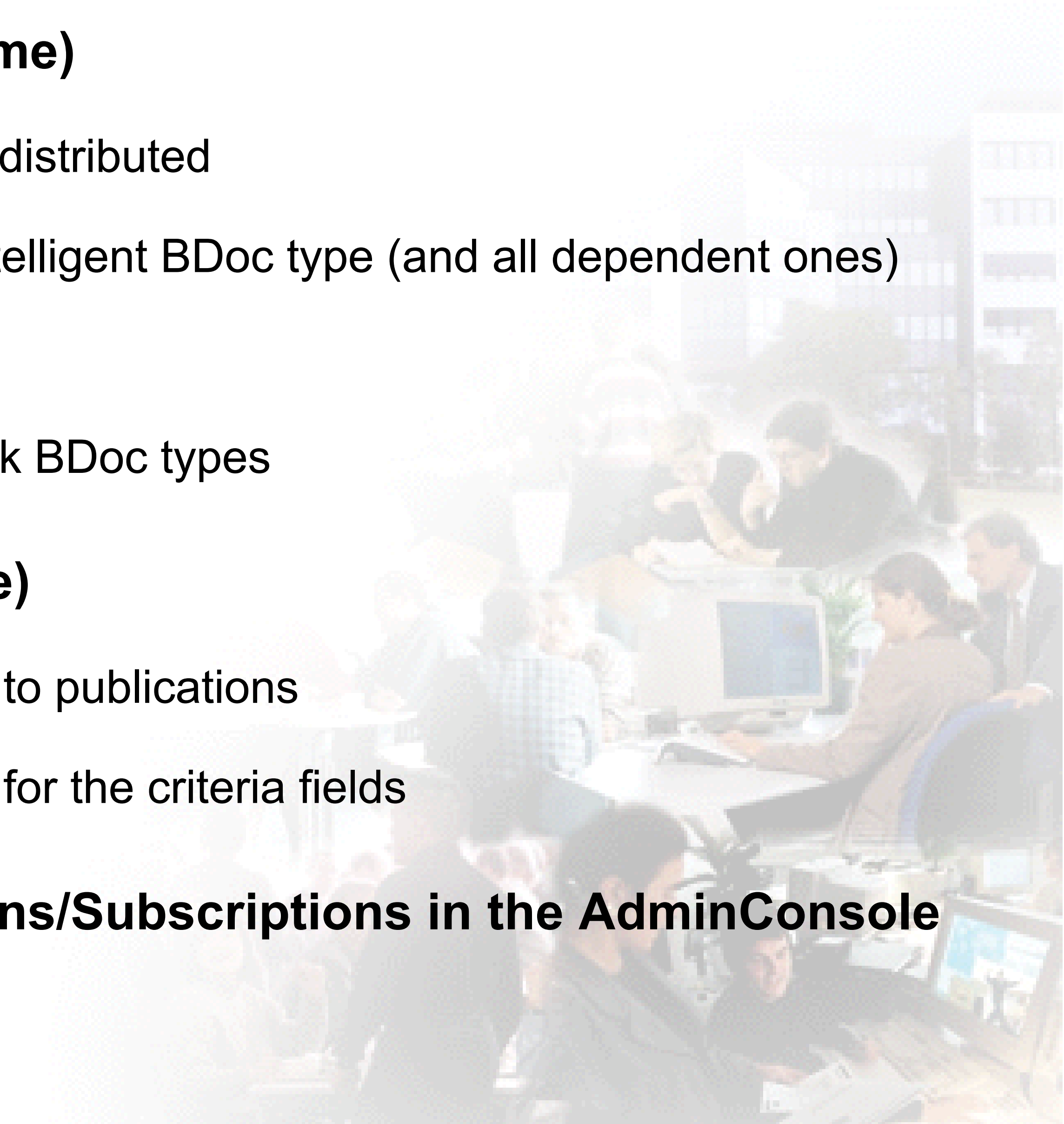
B:
#1 ..
#2 ..
#3 ..
#4 ..
#9 ..

C:
#8 ..
#9 ..

D:
#1 ..
#3 ..
#4 ..
#7 ..
#8 ..
#9 ..

Filter on BDoc messages

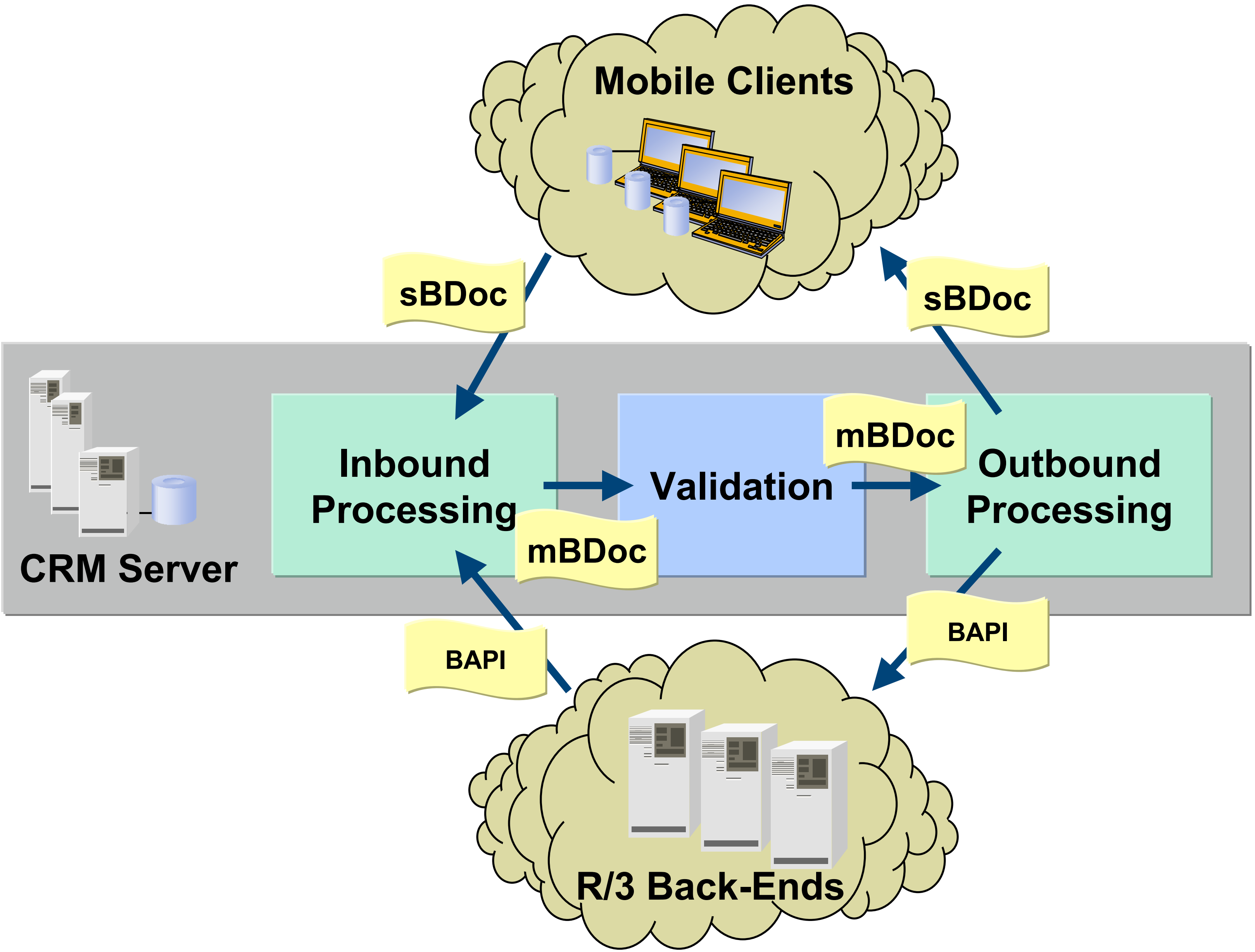
“Publisher-Subscriber” Concept



- **Publications (design time)**
  - Grouping BDocs to be distributed
  - Containing only one intelligent BDoc type (and all dependent ones)

    or
  - Containing multiple bulk BDoc types
- **Subscriptions (run time)**
  - Assignment of site IDs to publications
  - Specification of values for the criteria fields
- **Definition of Publications/Subscriptions in the AdminConsole**

Internal Data Flow (I)



Mobile Clients

sBDoc

sBDoc

CRM Server

Inbound Processing

Validation

mBDoc

Outbound Processing

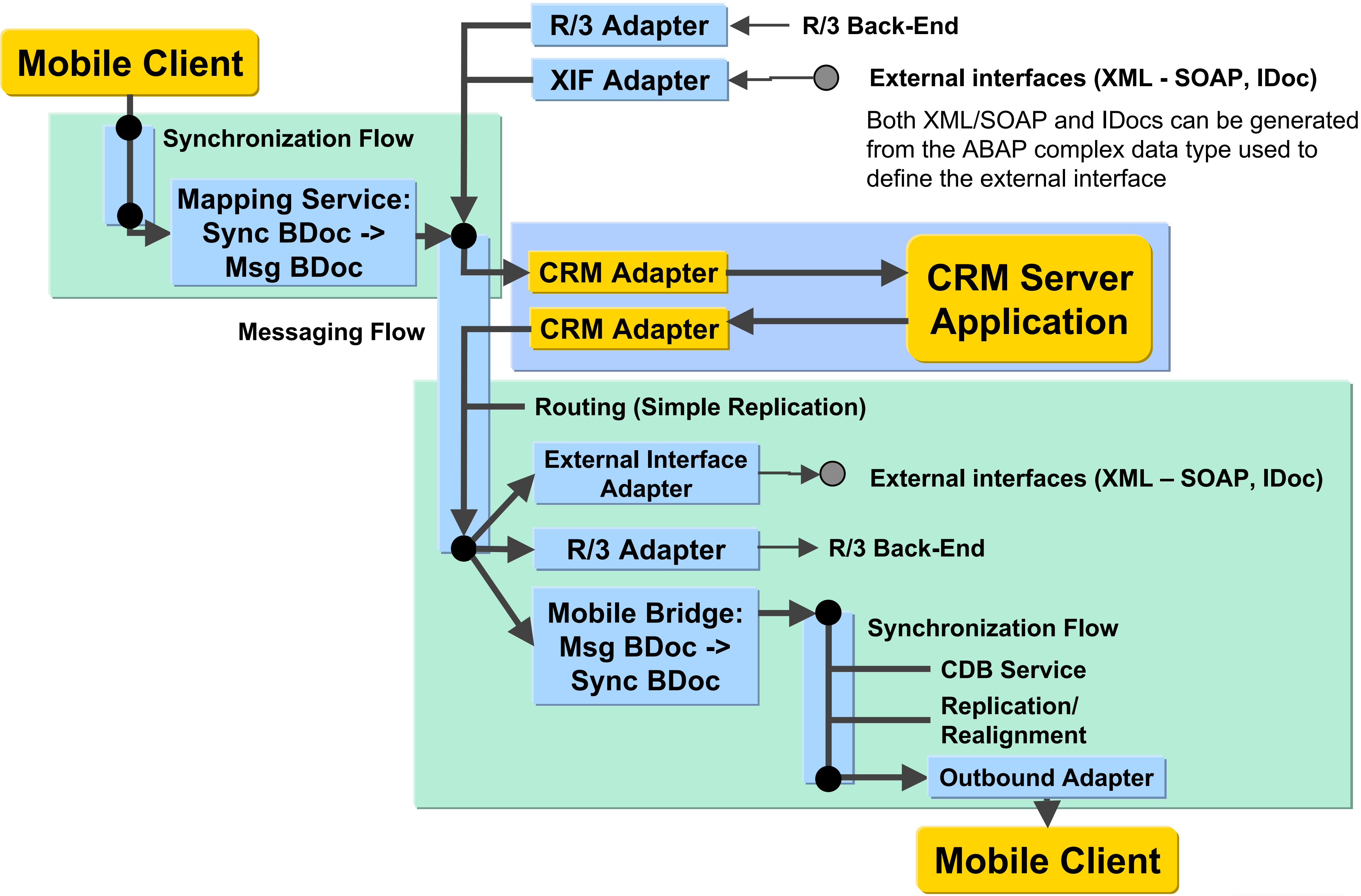
mBDoc

BAPI

BAPI

R/3 Back-Ends

Internal Data Flow (II)



Mobile Client

Synchronization Flow

Mapping Service: Sync BDoc -> Msg BDoc

Messaging Flow

R/3 Adapter

R/3 Back-End

XIF Adapter

External interfaces (XML - SOAP, IDoc)

Both XML/SOAP and IDocs can be generated from the ABAP complex data type used to define the external interface

CRM Adapter

CRM Adapter

CRM Server Application

Routing (Simple Replication)

External Interface Adapter

External interfaces (XML – SOAP, IDoc)

R/3 Adapter

R/3 Back-End

Mobile Bridge: Msg BDoc -> Sync BDoc

Synchronization Flow

CDB Service

Replication/ Realignment

Outbound Adapter

Mobile Client

Mobile Client Synchronization – Features

Replication via publications / subscriptions

Filtered und unfiltered replication

Realignment

- Automatic realignment
- Scheduled realignment

Support of dependencies between objects

Backup and recovery of mobile clients

Fast deployment of laptops

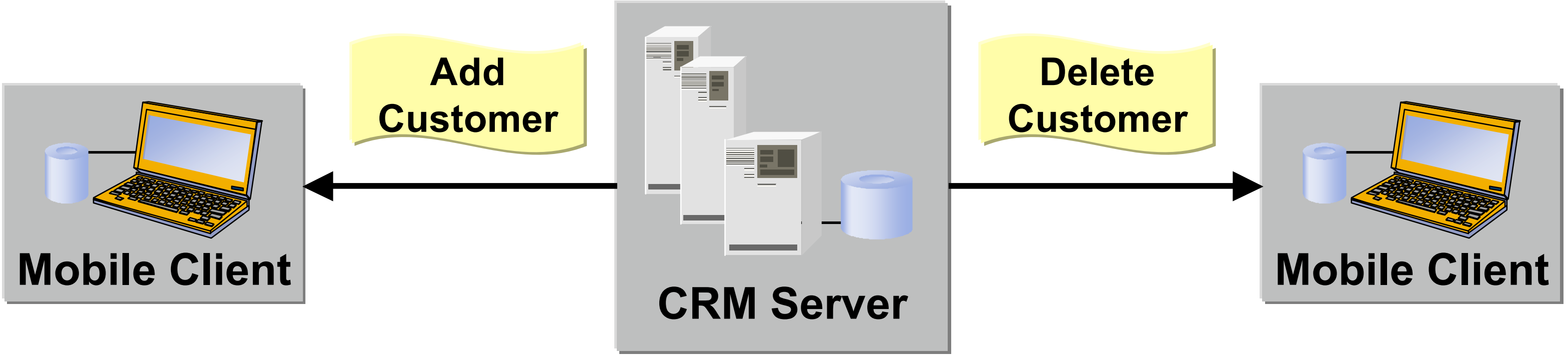
Mobile Device Synchronization – BDoc Dependencies

- **Direct dependencies:**
  - **Dependent replication:**

    BDocs follow only one intelligent BDoc.
  - **Intelligent dependent replication:**

    BDocs may follow multiple intelligent BDocs.
- **Interlinkages:**
  - **More flexible scheme to constitute free dependencies between BDocs.**
  - **May be cyclic or reflexive.**

Mobile Device Synchronization – Realignment


Add Customer
Delete Customer
Mobile Client
CRM Server
Mobile Client

The process of redistributing data according to changes

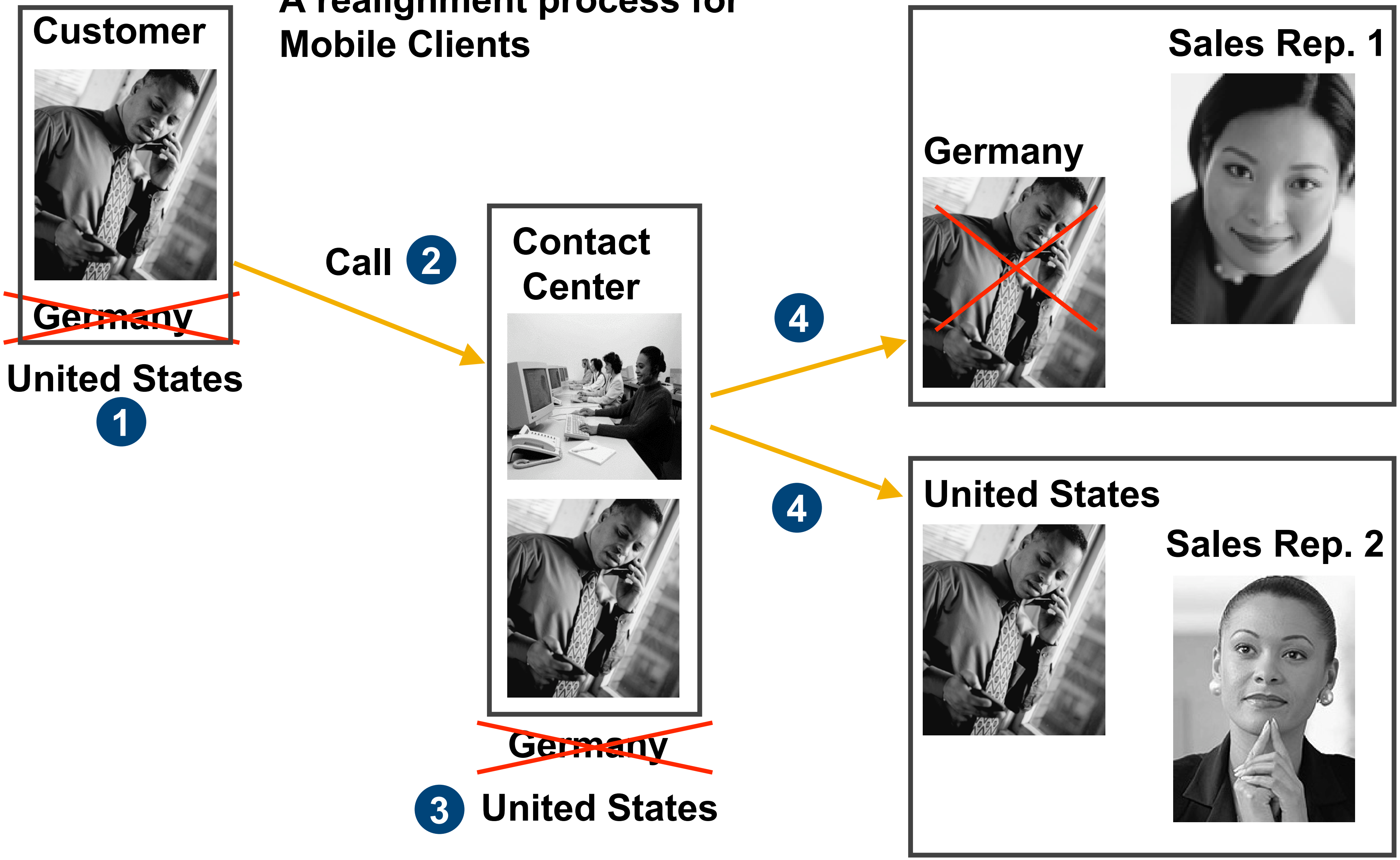
- in replication relevant data fields (minor realignment)
- to subscription rules (major realignment)

Updating the databases on the mobile clients

Minor/major realignment is performed automatically

Minor Realignment (Synchronization)

A realignment process for Mobile Clients



Customer

~~Germany~~

United States

①

Call ②

Contact Center

~~Germany~~

③ United States

④

④

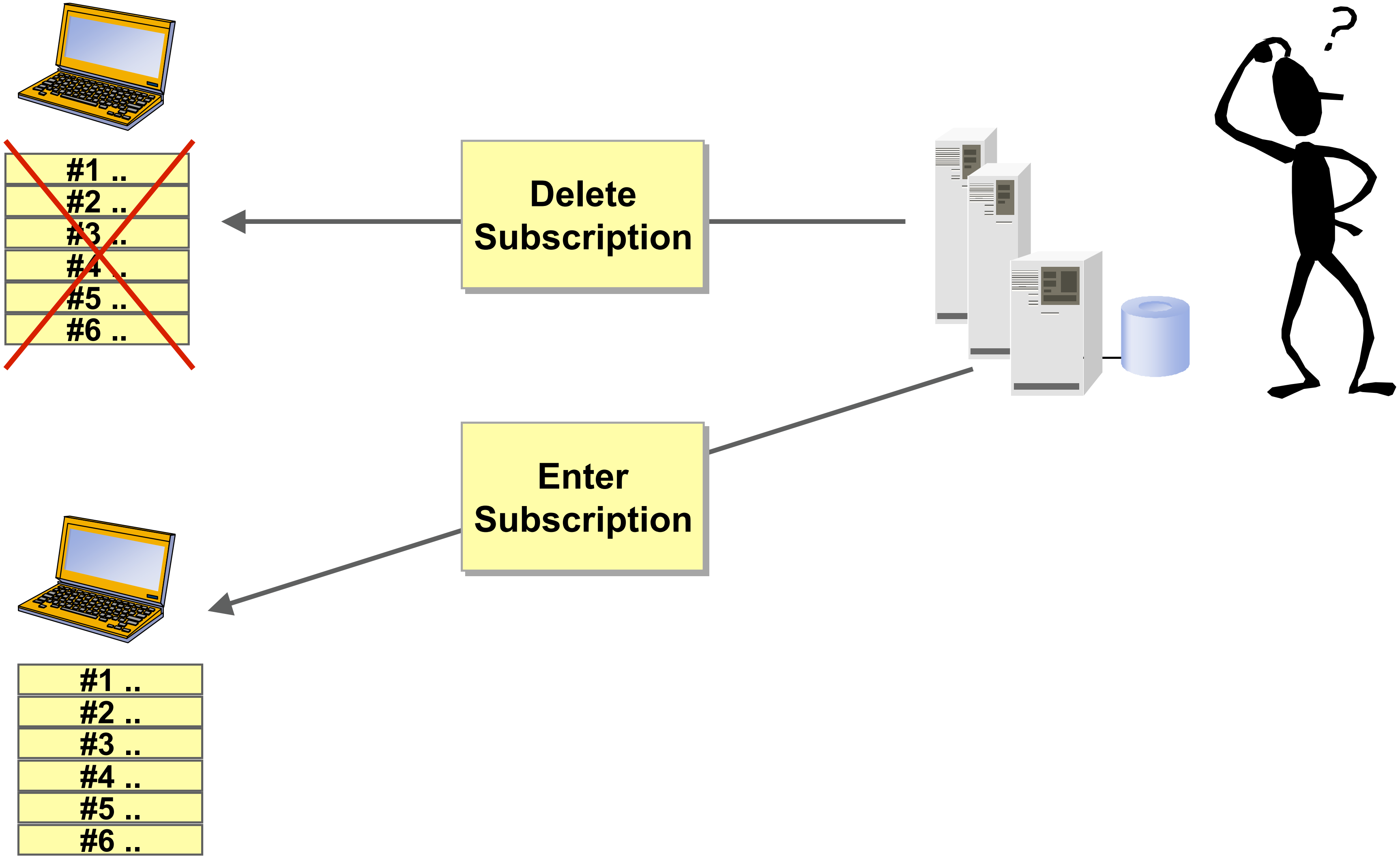
Sales Rep. 1

Germany

United States

Sales Rep. 2

Major Realignment (Synchronization)



#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..

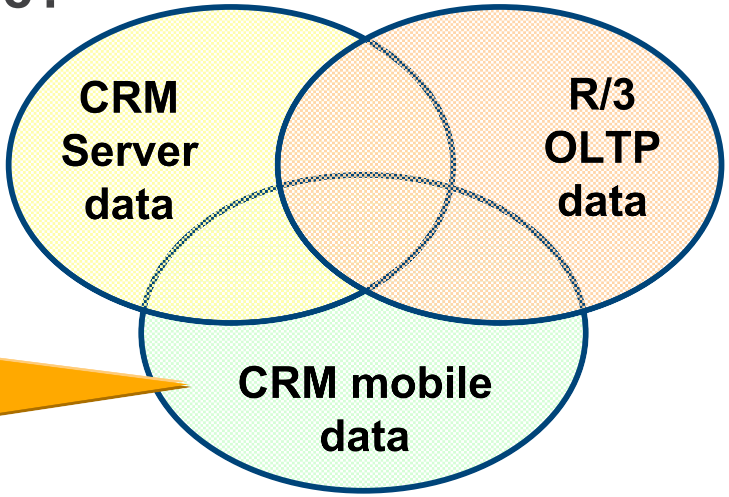
Delete Subscription

Enter Subscription

#1 ..
#2 ..
#3 ..
#4 ..
#5 ..
#6 ..

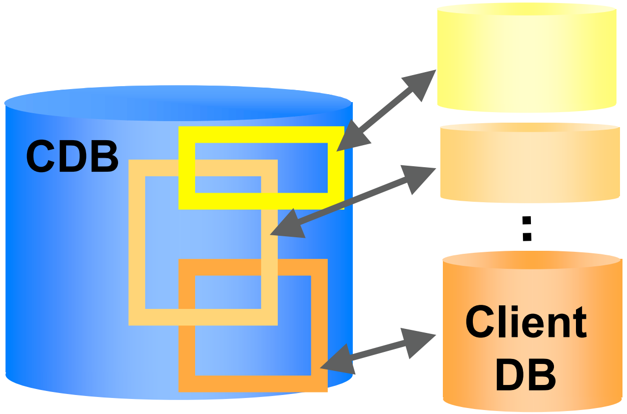
The Consolidated Database (CDB) (Synchronization)

Why an additional (logical) database?


CRM Server data
R/3 OLTP data
CRM mobile data

Advantages:
- central backup & recovery
- realignment
- conflict resolution
- performance

What does the CDB contain?


CDB
:
Client DB

Mobile Client Synchronization – Summary

Replication

- Star-like distribution of data to mobile users
- No hierarchical distribution networks
- Replication to sites, not persons

Realignment

- Automatic redistribution of data according to changes:
  - of replication relevant data field values (minor realignment)
  - to subscription rules (major realignment)
- Automated data realignment for temporarily replaced mobile employees
- Data caching in the consolidated database provides for
  - central backup & recovery of mobile CRM data
  - fast realignment
  - conflict resolution
  - fast data extraction
- Automated large-scale rollout of mobile clients

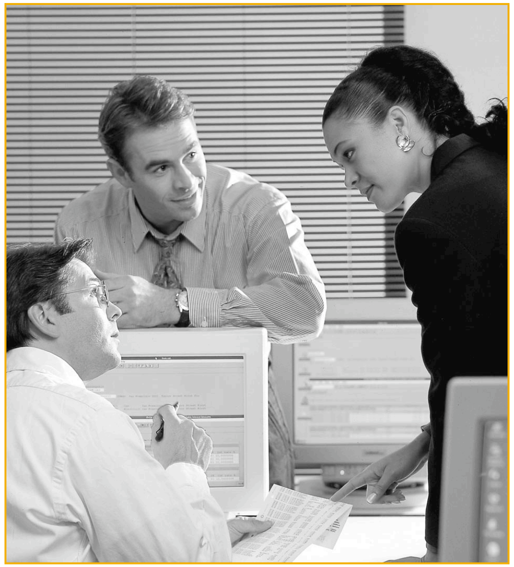
Groupware Solutions – Overview

Groupware Solutions

Groupware is a technology designed to facilitate the work of groups. This technology may be used to communicate, cooperate, coordinate, ...

Groupware Functionality

- E-mail
- Group calendaring and scheduling
- Group contact and task management
- Document sharing
- ...



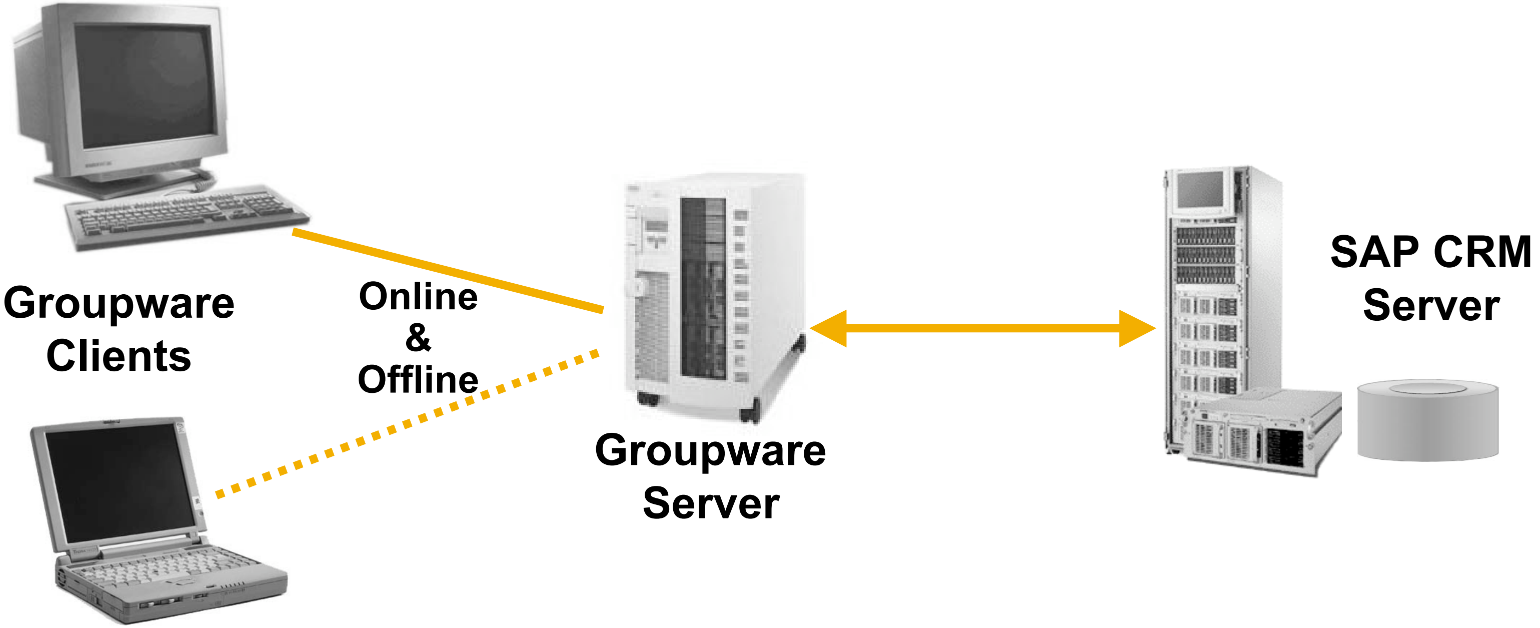
Groupware Integration

CRM Scenarios

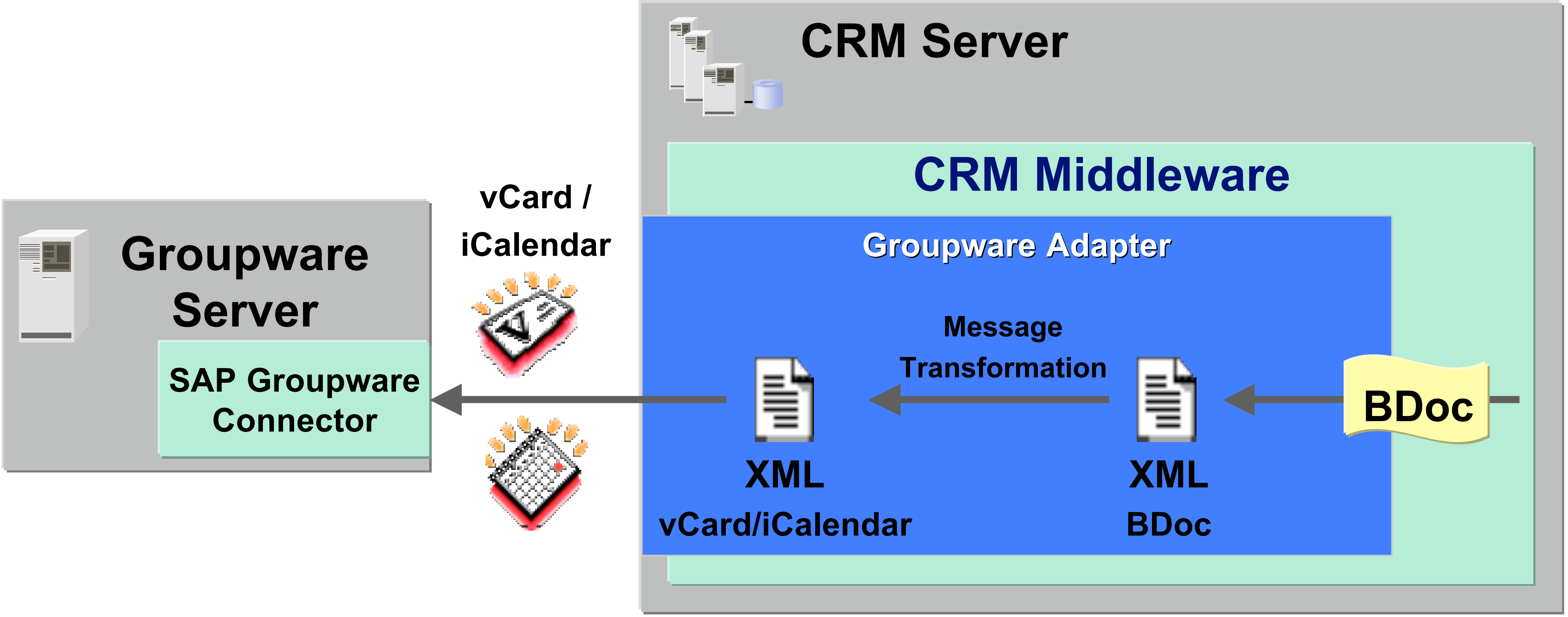
- CRM Activity Management Tasks and Appointments in GW
- CRM Business Partners / Accounts Contacts in GW

Synchronization

- Between SAP CRM and Groupware


Groupware Clients
Online & Offline
Groupware Server
SAP CRM Server

Groupware Integration Architecture


CRM Server
CRM Middleware
Groupware Adapter
Message Transformation
BDoc
XML
vCard/iCalendar
XML
BDoc
vCard /
iCalendar
Groupware Server
SAP Groupware Connector

Groupware Adapter transforms the BDoc message into a vCard / iCalender object in XML format

Data enrichment and data reduction capabilities

SAP Groupware Connector transforms SOAP XML messages into proprietary APIs of the groupware servers

Groupware Integration – Features

Real-time data exchange between CRM applications and the Groupware server

Support of MS Exchange 2000 and Lotus Domino 5.0X

CRM Business Partner / Accounts are visible as contacts within the Groupware Solution

CRM Activities are represented as tasks or appointments in the Groupware Solution

Mobile Client Synchronization – Benefits

- Mobile users just get the data that they really need
- Fast data synchronization for mobile users
- Temporary assignment of one or more replacements
- Fast deployment of the mySAP Field Sales solution

Groupware Integration – Benefits

Groupware solutions are used in almost every company

Integration between CRM and the Groupware server is transparent to the users

Real-time data exchange

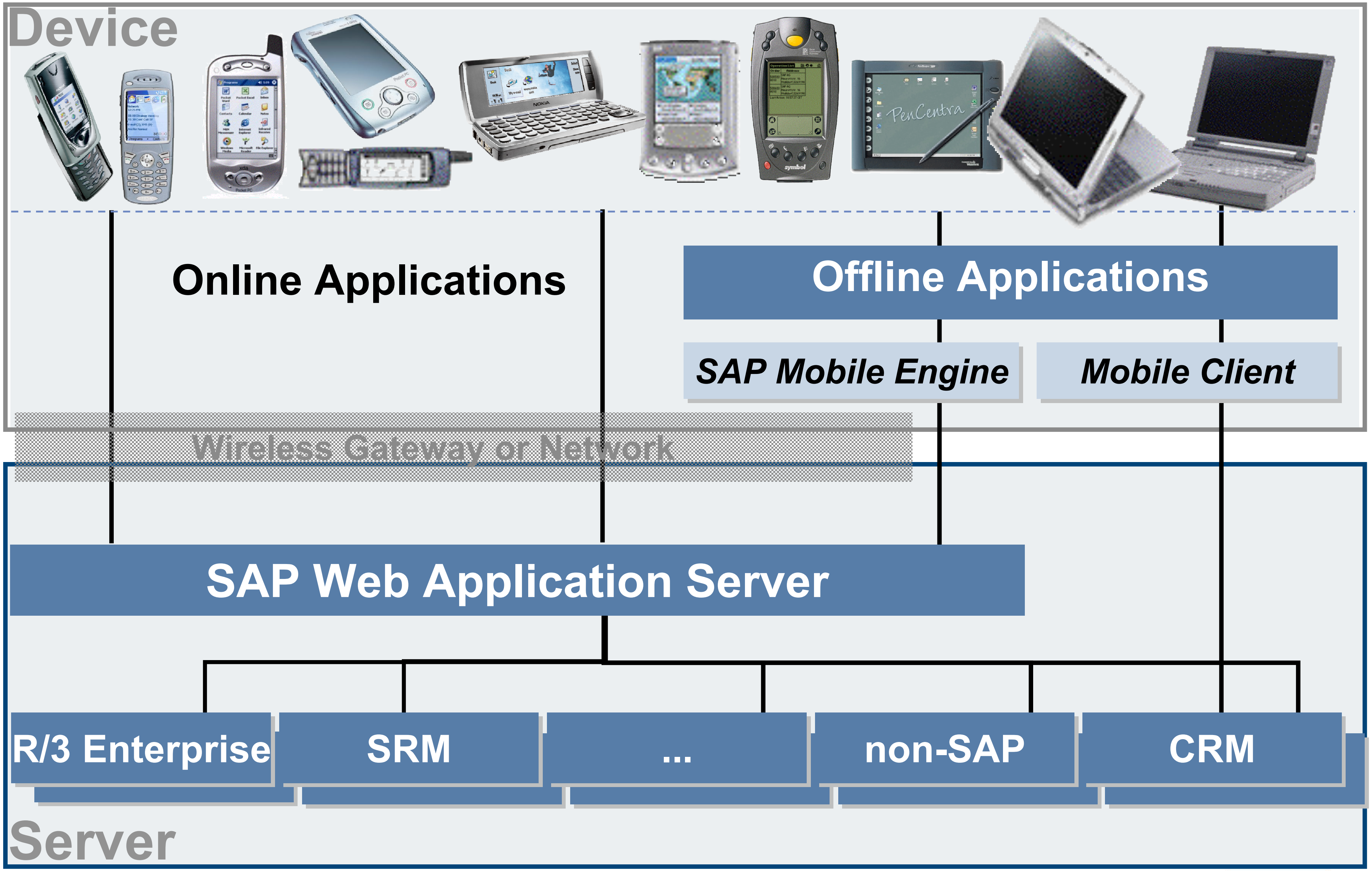
Access CRM data from the Groupware client, for example, MS Outlook or Lotus Notes, on different devices, for example, PC, Laptop or PDA

Users are familiar with Groupware clients

Agenda

- Overview
  - mySAP Mobile Business Vision
  - Online Integration
  - SAP Mobile Infrastructure
  - SAP Mobile Application Studio
  - CRM Middleware Technology
- Examples
  - Offline Laptop
  - Offline Handheld
  - Online Handheld
- Special Features
  - SAP on Tablet PC
  - SAP CRM PDA Companion
- Unification with SAP NetWeaver and Web Dynpro

mySAP Mobile Business Architecture



Device

Online Applications

Offline Applications

SAP Mobile Engine

Mobile Client

Wireless Gateway or Network

SAP Web Application Server

R/3 Enterprise

SRM

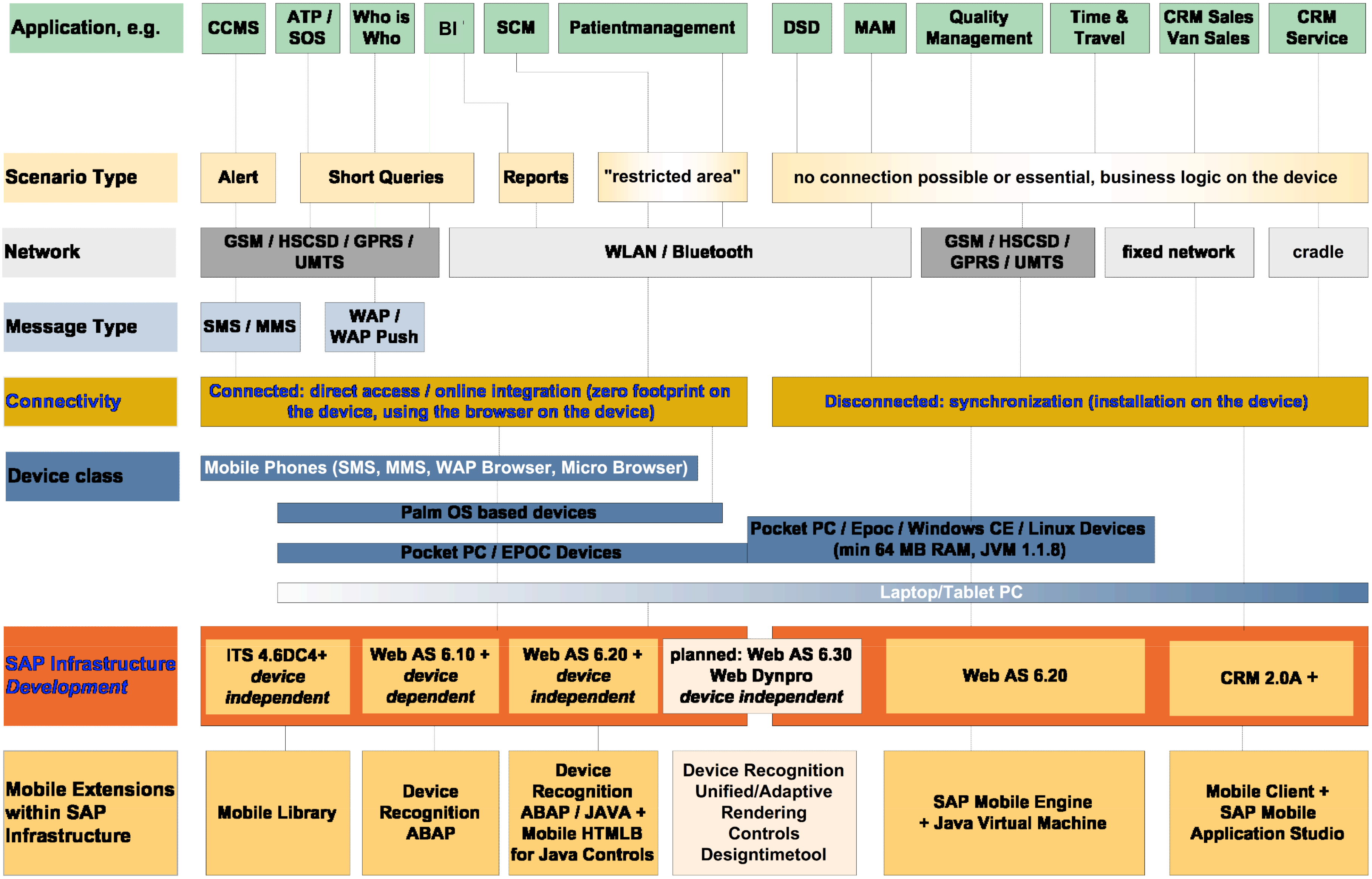
...

non-SAP

CRM

Server

Decision Matrix



Application, e.g.
CCMS
ATP / SOS
Who is Who
BI
SCM
Patientmanagement
DSD
MAM
Quality Management
Time & Travel
CRM Sales Van Sales
CRM Service

Scenario Type
Alert
Short Queries
Reports
"restricted area"
no connection possible or essential, business logic on the device

Network
GSM / HSCSD / GPRS / UMTS
WLAN / Bluetooth
GSM / HSCSD / GPRS / UMTS
fixed network
cradle

Message Type
SMS / MMS
WAP / WAP Push

Connectivity
Connected: direct access / online integration (zero footprint on the device, using the browser on the device)
Disconnected: synchronization (installation on the device)

Device class
Mobile Phones (SMS, MMS, WAP Browser, Micro Browser)
Palm OS based devices
Pocket PC / EPOC Devices
Pocket PC / Epoc / Windows CE / Linux Devices (min 64 MB RAM, JVM 1.1.8)
Laptop/Tablet PC

SAP Infrastructure *Development*
ITS 4.6DC4+ *device independent*
Web AS 6.10 + *device dependent*
Web AS 6.20 + *device independent*
planned: Web AS 6.30 Web Dynpro *device independent*
Web AS 6.20
CRM 2.0A +

Mobile Extensions within SAP Infrastructure
Mobile Library
Device Recognition ABAP
Device Recognition ABAP / JAVA + Mobile HTMLB for Java Controls
Device Recognition Unified/Adaptive Rendering Controls Designtimetool
SAP Mobile Engine + Java Virtual Machine
Mobile Client + SAP Mobile Application Studio

Karin Schattka, PM Mobile UI

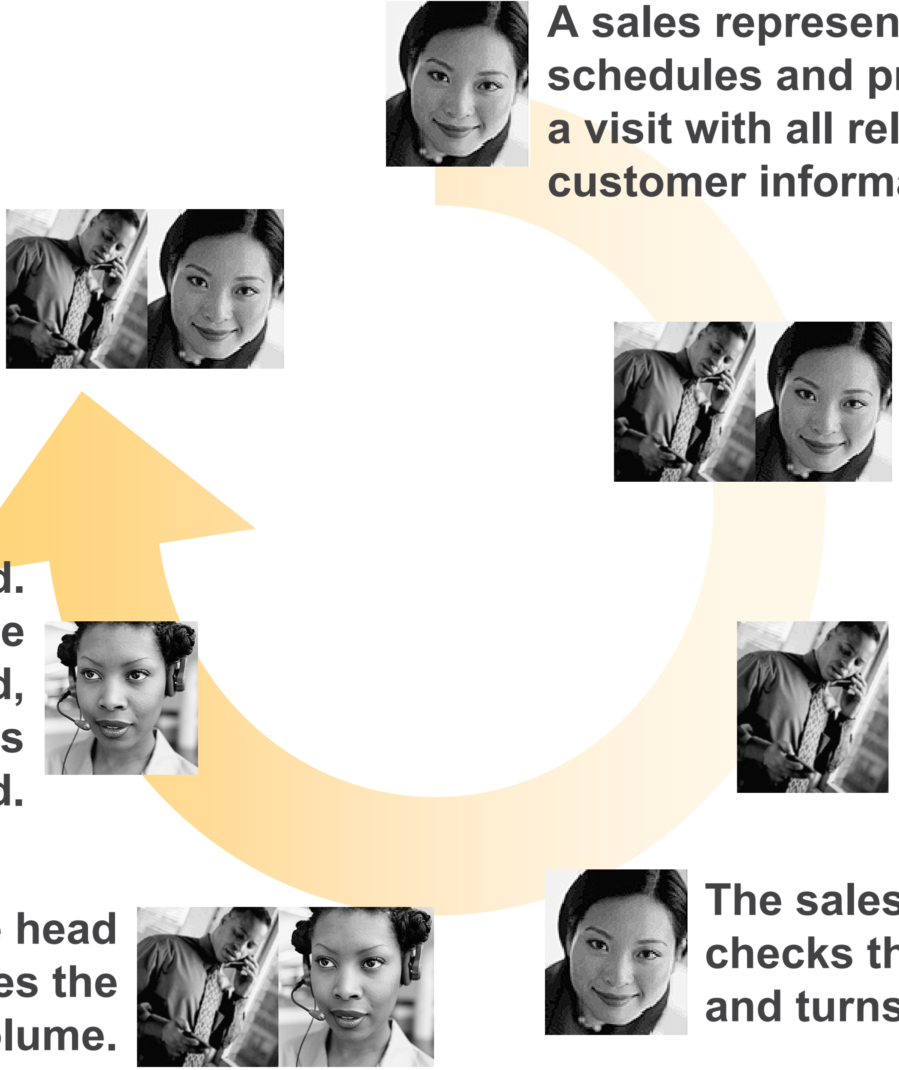
August 2002

Examples

- Example 1
  - mySAP CRM Mobile Sales Scenario: Customer Visit with Order Entry
- Example 2
  - Mobile Sales for Handheld Scenario: Customer Visit with Order Entry
- Example 3
  - Patient Management to support nurses and doctors

Business Scenario: Example I

Customer Visit with Order Entry



A sales representative schedules and prepares a visit with all relevant customer information.

During the visit, the product portfolio is presented and a quotation is created at the customer site.

The customer accepts the quotation.

The sales representitive checks the quotation status and turns it into an order.

The customer calls the head office staff and increases the order volume.

The order is processed. A delivery is created, the goods are picked, packed, and shipped. An invoice is created.

The customer calls. The sales representative checks the sales order as well as the invoice.

Start the Mobile Project I

EXAMPLE: Customer Visit with Order Entry

Who are your potential mobile users?

- Field sales representatives
- Sales managers

What functions do these users require?

- Collect master data, share customer profiles
- Plan, track, and document visits or sales calls; update contact or sales histories
- Configure and price a product
- Create personalized business documents (quotations, orders, contracts)
- Perform detailed analysis

Start the Mobile Project II

What kind of information and how much data do these users require?

- Integrated view of customers, prospects, products, services, competitors, activities, opportunities, quotations, orders, and so on
- Large data volume

How up-to-date does the information have to be?

- Up-to-date, but not necessarily real-time

Where and how will your mobile solutions be used?

- At customer sites
- At home

Reaching a Decision

Field sales representative:

- Professional user
- Needs many sophisticated functions
- Works with large data volume
- Requires easy text input

Information

- Up-to-date, but not real-time

Offline option

- Network coverage not always available
- Integration with back office required

Disconnected for long periods

User-managed intelligent synchronization when necessary

mySAP CRM Mobile Sales

SAP
SAP CRM Mobile Sales
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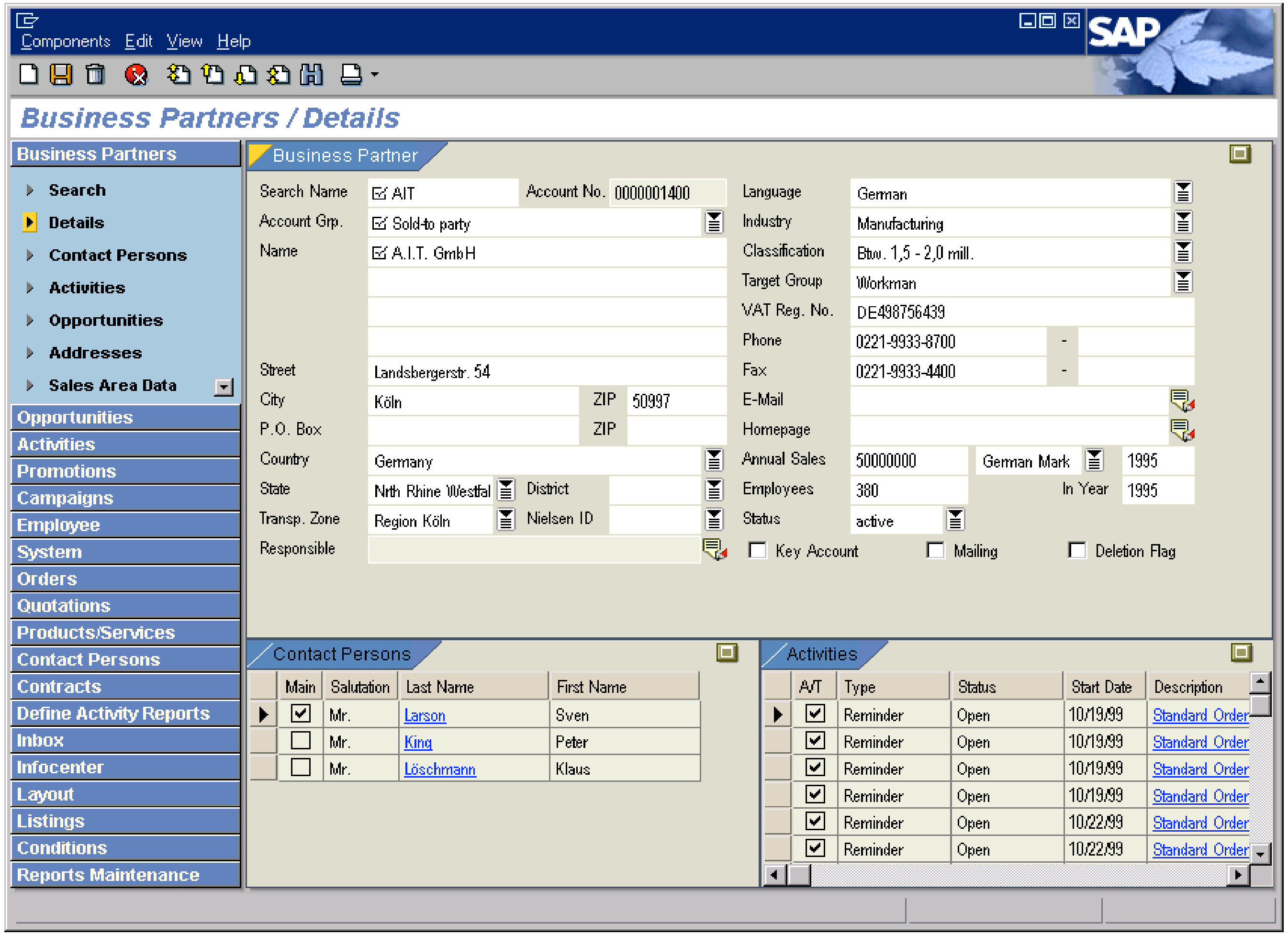
mySAP CRM Mobile Sales

Mobile Client Applications provide:

- Quick identification of most important information
- Overview and easy access to details
- *Backward* and *Forward* for fast navigation
- Hyperlinks to related information


Components Edit View Help
SAP
Business Partners / Details
Business Partners
Search
Details
Contact Persons
Activities
Opportunities
Addresses
Sales Area Data
Opportunities
Activities
Promotions
Campaigns
Employee
System
Orders
Quotations
Products/Services
Contact Persons
Contracts
Define Activity Reports
Inbox
Infocenter
Layout
Listings
Conditions
Reports Maintenance
Business Partner

Search Name ☑ AIT Account No. 0000001400
Account Grp. ☑ Sold-to party
Name ☑ A.I.T. GmbH
Street Landsbergerstr. 54
City Köln ZIP 50997
P.O. Box ZIP
Country Germany
State Nrth Rhine Westfal District
Transp. Zone Region Köln Nielsen ID
Responsible

Language German
Industry Manufacturing
Classification Btw. 1,5 - 2,0 mill.
Target Group Workman
VAT Reg. No. DE498756439
Phone 0221-9933-8700 -
Fax 0221-9933-4400 -
E-Mail
Homepage
Annual Sales 50000000 German Mark 1995
Employees 380 In Year 1995
Status active
☐ Key Account ☐ Mailing ☐ Deletion Flag

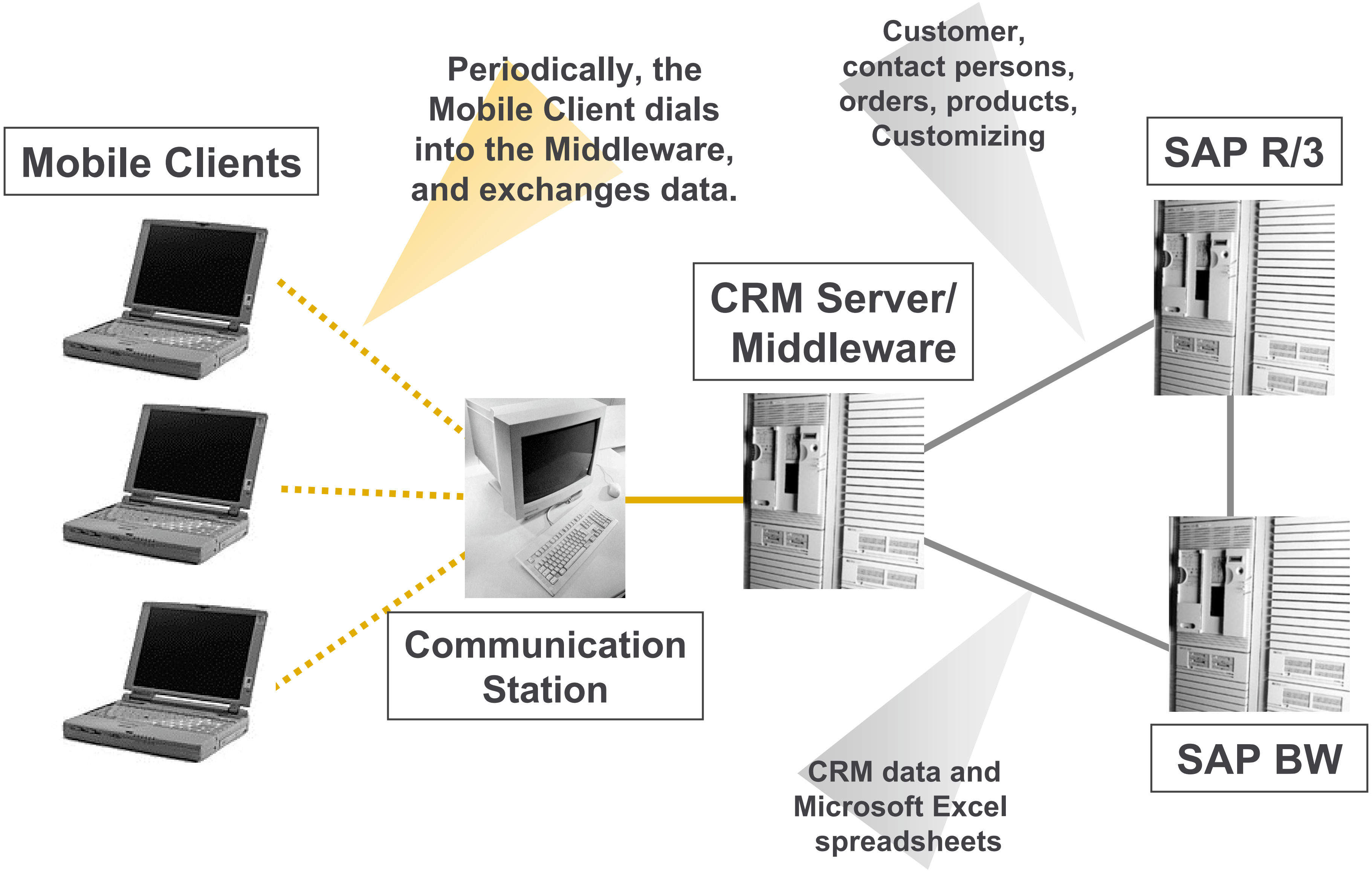
Contact Persons

Main	Salutation	Last Name	First Name
☑	Mr.	Larson	Sven
☐	Mr.	King	Peter
☐	Mr.	Löschmann	Klaus

Activities

A/T	Type	Status	Start Date	Description
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order

System Landscape



Mobile Clients

Periodically, the Mobile Client dials into the Middleware, and exchanges data.

Customer, contact persons, orders, products, Customizing

SAP R/3

CRM Server/ Middleware

Communication Station

SAP BW

CRM data and Microsoft Excel spreadsheets

Enhancing and Designing Mobile Client Applications

You can enhance the standard application ...

SAP CRM Mobile Sales

© 1999–2001 SAP AG. All rights reserved.

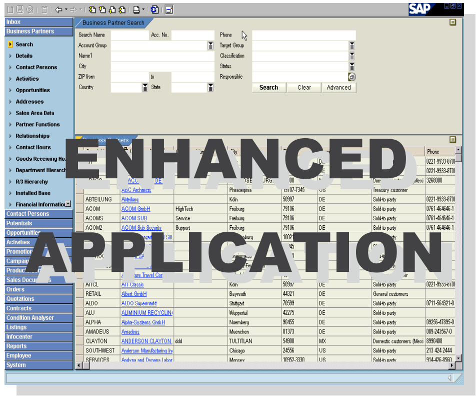
Standard:
mySAP CRM Mobile Sales

SAP Mobile Application Studio

CRM 3.0 B SR 01 Copyright © 2000 - 2001 SAP AG

Modification

Generate



Enhanced:
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SAP
SAP CRM Mobile Sales
© 1999–2001 SAP AG. All rights reserved.

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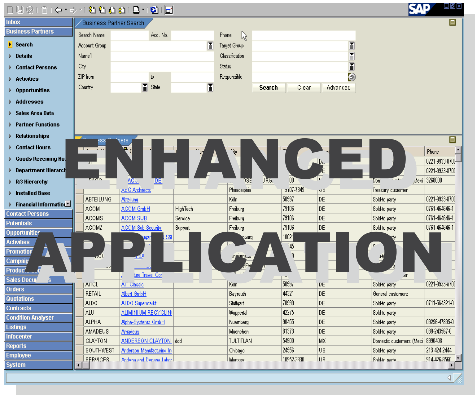

ENHANCED
APPLICATION

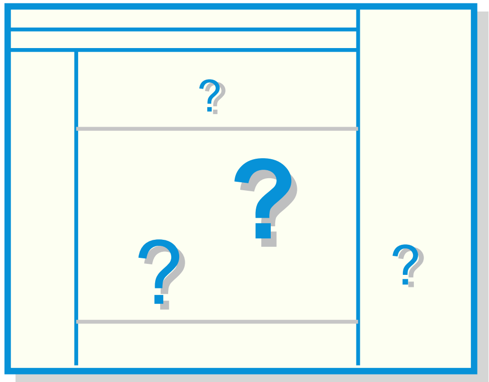
Enhanced:
mySAP CRM Mobile Sales

...Or even design an entirely new application:

SAP
SAP Mobile Application Studio
CRM 3.0 B SR 01 Copyright © 2000 - 2001 SAP AG

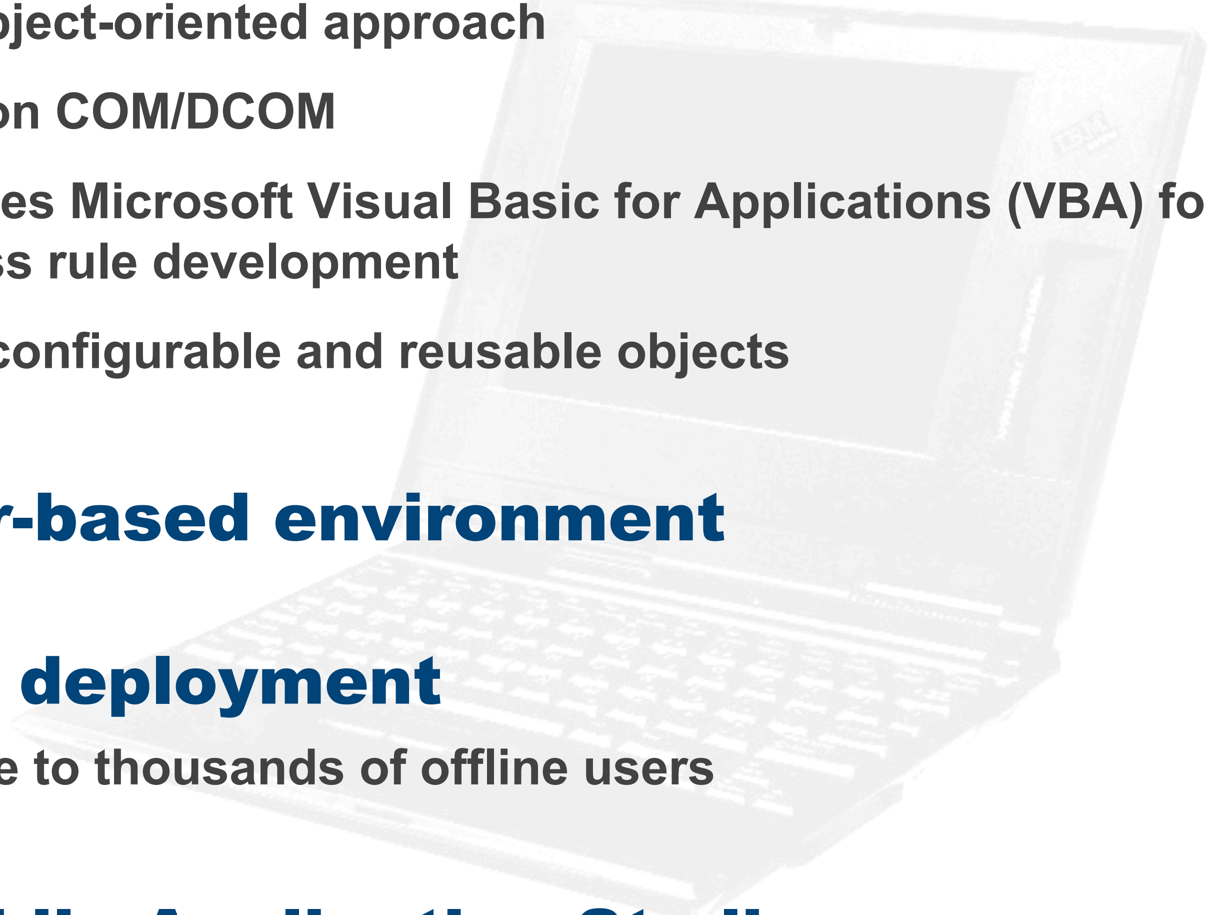
Design

Generate



New Application

Mobile Client Applications: Architecture Summary



Based on modern industry standards

- Uses object-oriented approach
- Based on COM/DCOM
- Integrates Microsoft Visual Basic for Applications (VBA) for business rule development
- Highly configurable and reusable objects

Browser-based environment

Flexible deployment

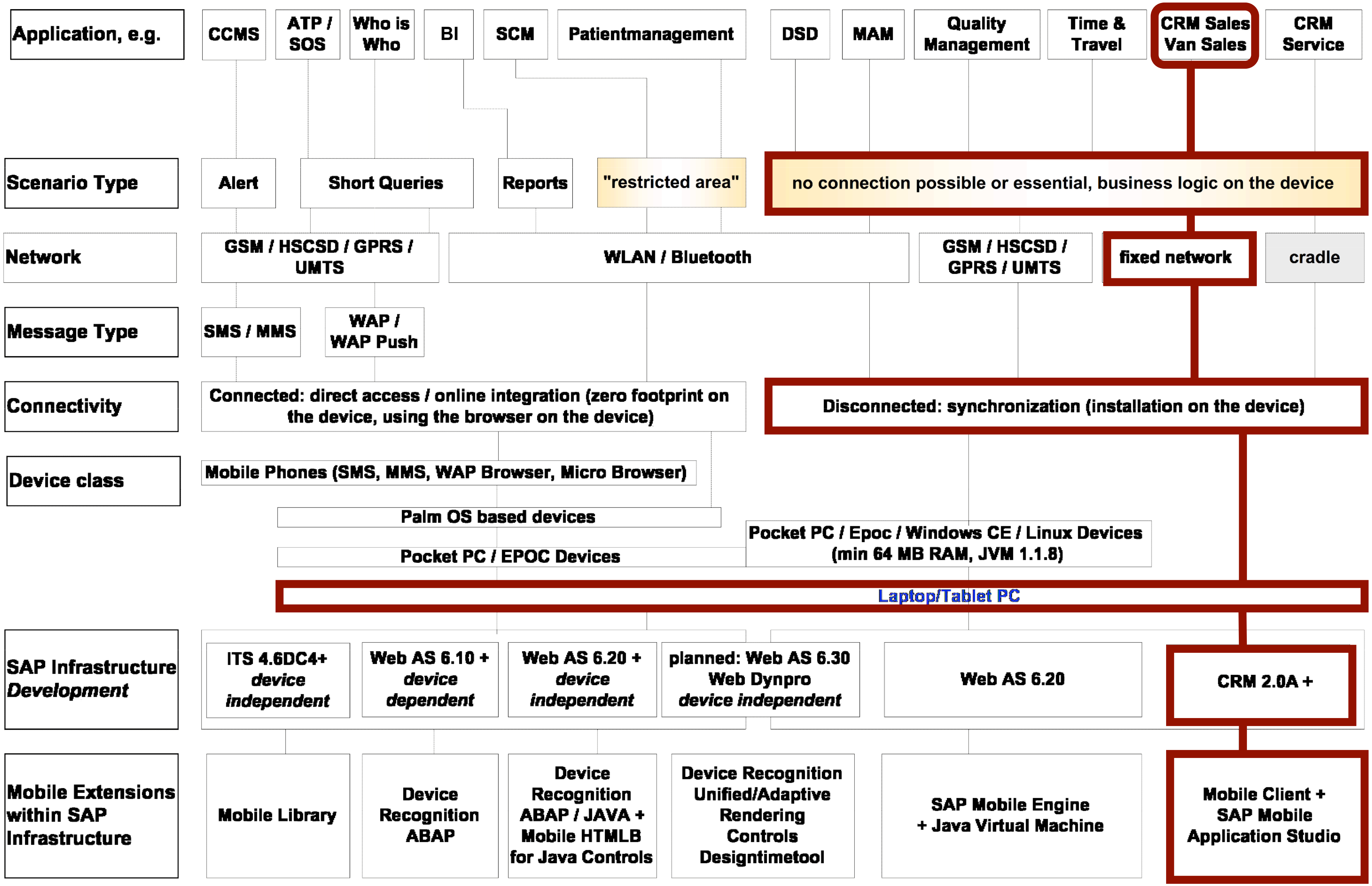
- Scalable to thousands of offline users

SAP Mobile Application Studio

- Integrated visual development environment

Open to third-party systems

Using the decision matrix



Application, e.g.
CCMS | ATP / SOS | Who is Who | BI | SCM | Patientmanagement | DSD | MAM | Quality Management | Time & Travel | CRM Sales Van Sales | CRM Service

Scenario Type
Alert | Short Queries | Reports | "restricted area" | no connection possible or essential, business logic on the device

Network
GSM / HSCSD / GPRS / UMTS | WLAN / Bluetooth | GSM / HSCSD / GPRS / UMTS | fixed network | cradle

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Pocket PC / EPOC Devices
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Laptop/Tablet PC

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Mobile Extensions within SAP Infrastructure
Mobile Library | Device Recognition ABAP | Device Recognition ABAP / JAVA + Mobile HTMLB for Java Controls | Device Recognition Unified/Adaptive Rendering Controls Designtimetool | SAP Mobile Engine + Java Virtual Machine | Mobile Client + SAP Mobile Application Studio

Karin Schattka, PM Mobile UI

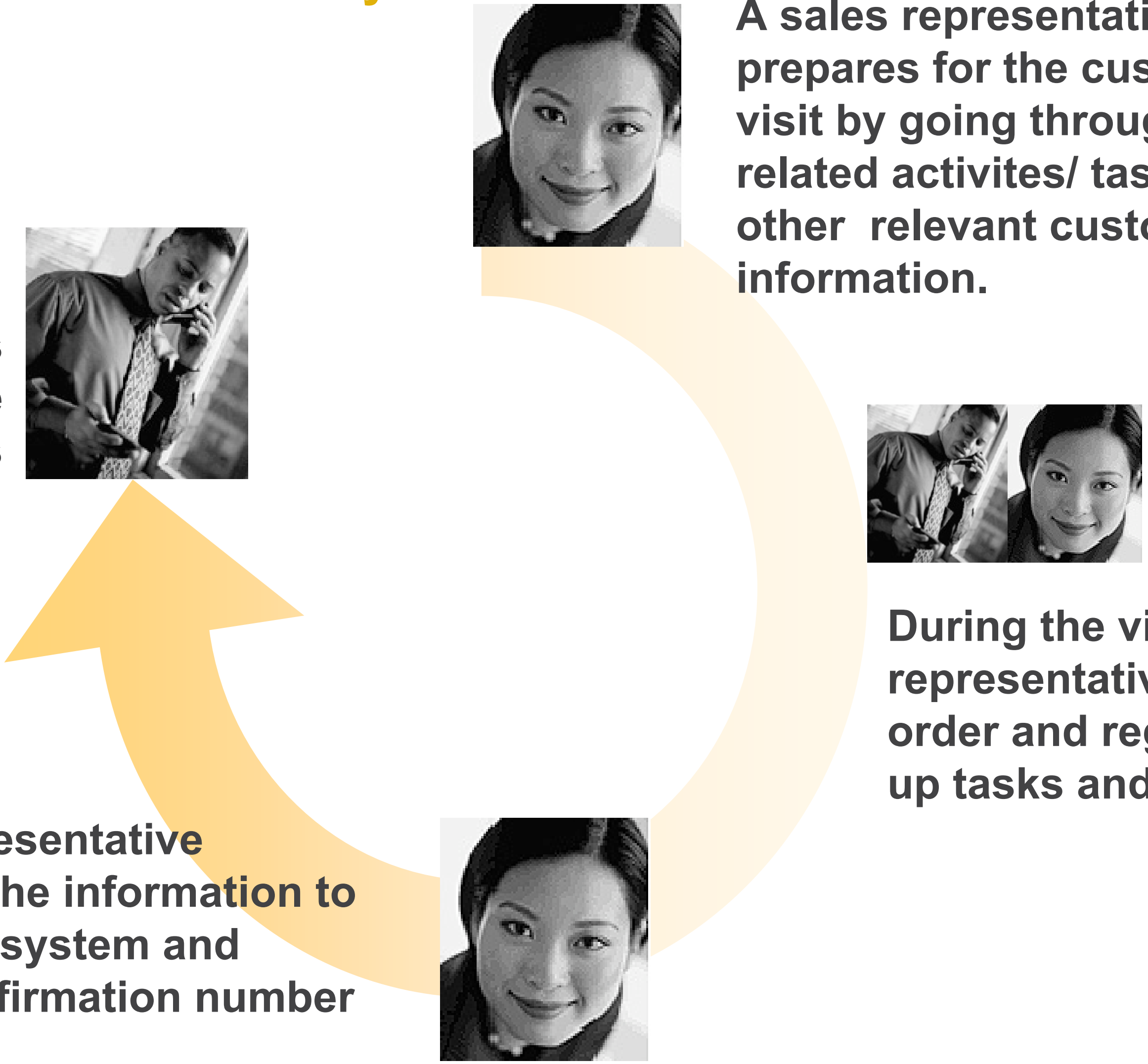
August 2002

Examples

- Example 1
  - mySAP CRM Mobile Sales Scenario: Customer Visit with Order Entry
- **Example 2**
  - **Mobile Sales for Handheld Scenario: Customer Visit with Order Entry**
- Example 3
  - Patient Management to support nurses and doctors

Business Scenario: Example II

Customer visit with Order Entry



A sales representative prepares for the customer visit by going through the related activites/ tasks and other relevant customer information.

During the visit, the sales representative creates an order and registers follow-up tasks and opportunities.

The sales representative synchronizes the information to the backoffice system and receives a confirmation number for the order

The customer calls in to check the order status

Start the Mobile Project I

Business Scenario: **Customer Visit with Order Entry**

Who are your potential mobile users?

- Field sales representatives
- Sales managers

What functions do these users require?

- Review and create tasks
- Review, change and create new or follow-up activities
- Review and update opportunities
- Review quotations
- Review and create orders

Start the Mobile Project II

What kind of information and how much data do these users require?

- Customer, prospects and partner data
- Small and medium data volume

How up-to-date does the information have to be?

- Up-to-date, but not necessarily real-time

Where and how will your mobile solutions be used?

- At customer sites
- At home
- While traveling

Reaching a Decision I

Field sales representative:

- Needs easy-to-handle and lightweight mobile device
- Needs only a limited function set
- Needs an easy and quick access to a limited number of customer and product data
- Needs an easy and not extensive text input
- Works with small and medium data volume

Information:

- Up-to-date, but not real-time

Offline option:

- Network coverage not always available
- Integration with back office required

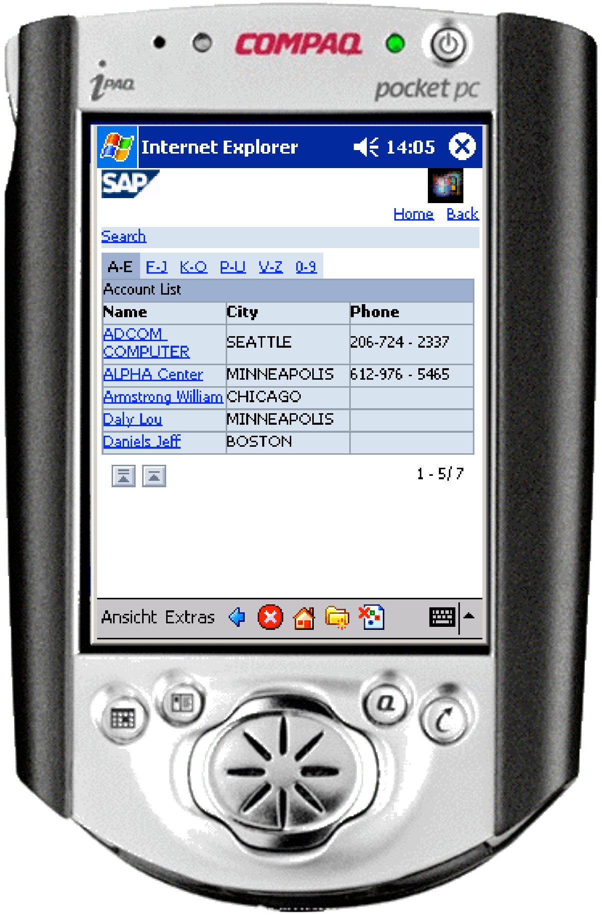
Reaching a Decision II

Solution:

Mobile Handheld Solution with mySAP CRM Sales Application and SAP Mobile Engine Technology

SAP‘s Mobile Handheld Solutions provide:

- Easy-to-manage and lightweight mobile applications
- Role-based and personalized information
- Optimized user interaction design
- Reliable and stable technology
- Secure data communication

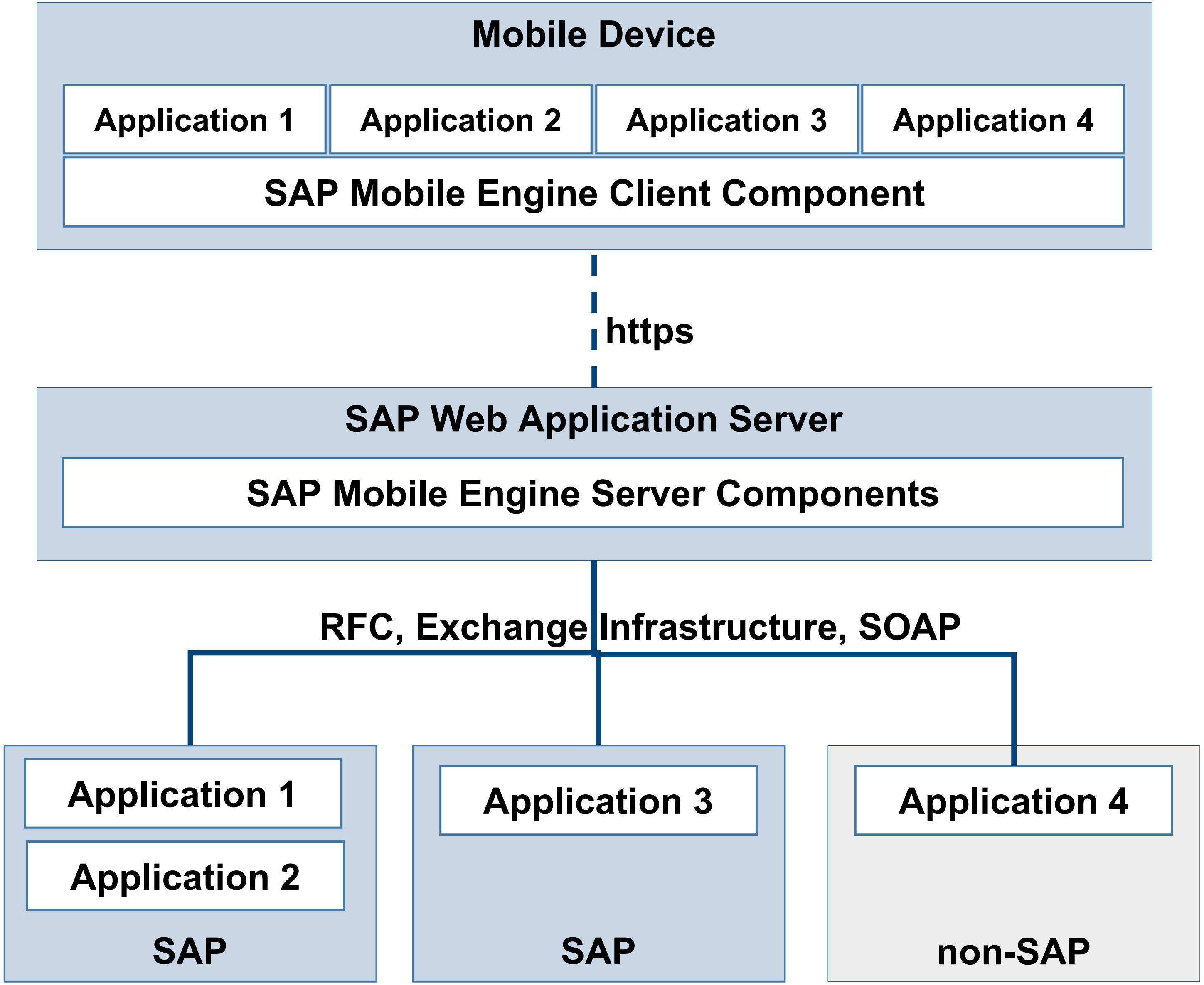

COMPAQ
iPAQ
pocket pc
Internet Explorer
14:05
Home
Back
Search
A-E
F-J
K-O
P-U
V-Z
0-9
Ansicht
Extras

Account List

Name	City	Phone
ADCOM COMPUTER	SEATTLE	206-724 - 2337
ALPHA Center	MINNEAPOLIS	612-976 - 5465
Armstrong William	CHICAGO	
Daly Lou	MINNEAPOLIS	
Daniels Jeff	BOSTON	

1 - 5/ 7

SAP Mobile Engine – Architecture



Mobile Device

Application 1

Application 2

Application 3

Application 4

SAP Mobile Engine Client Component

https

SAP Web Application Server

SAP Mobile Engine Server Components

RFC, Exchange Infrastructure, SOAP

Application 1

Application 2

SAP

Application 3

SAP

Application 4

non-SAP

SAP‘s Mobile Handheld Solution: Technology Summary

Industry standard-based Runtime

- Platform-independent (Java-based framework)
- Open standard programming model (JSP 1.1, AWT, J2ME)
- Extensive Toolkit (driver support, specialized APIs)

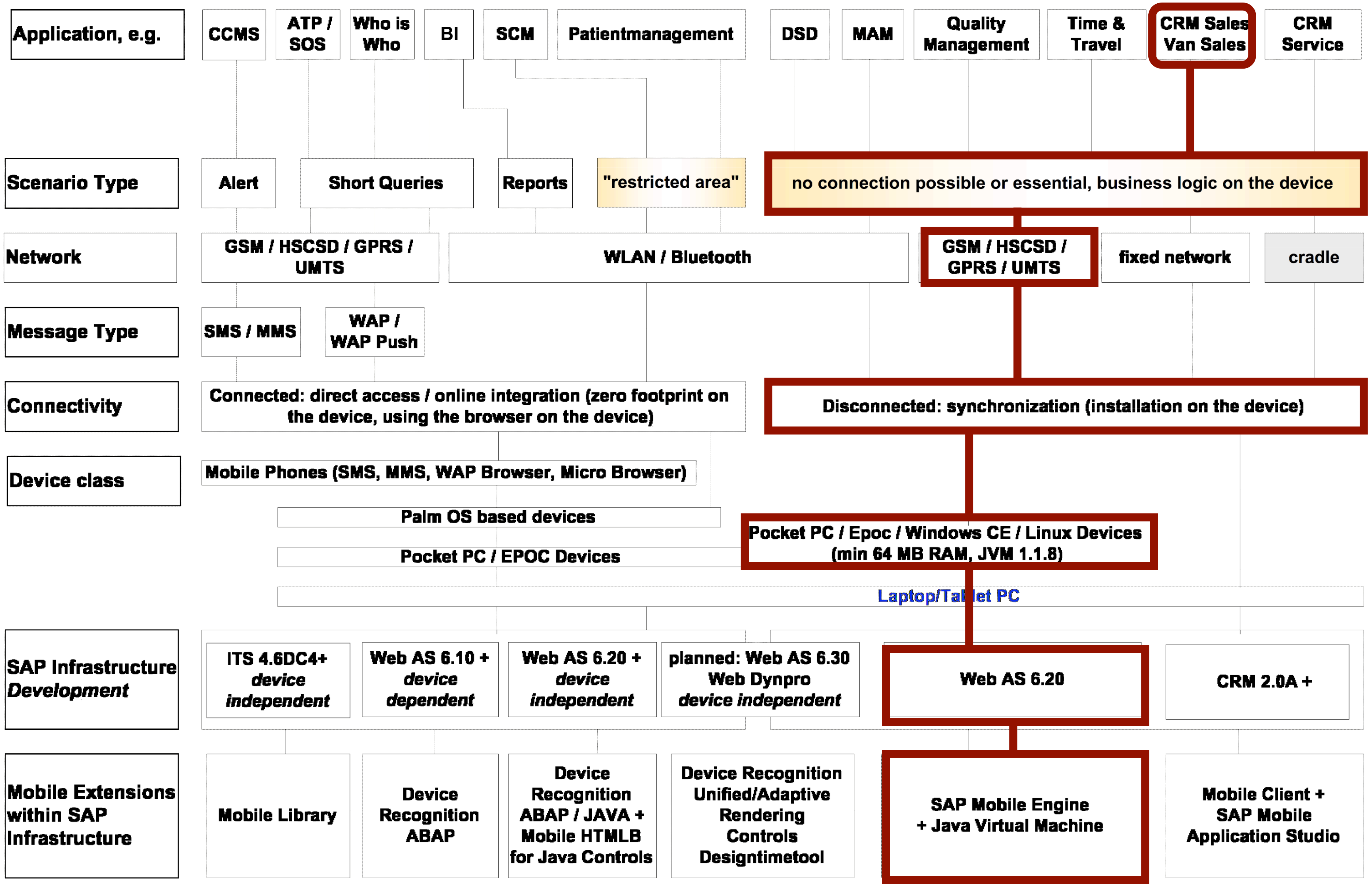
Data synchronization

- Ensured, encrypted, compressed data transfer
- Support of any connection type (GPRS, LAN/WLAN)
- Two synchronization modes (Generic, Smart)
- Muliple backend support (CRM, PLM, HCM, Legacy)

Administration and Deployment

- Automatic client-framework installation (web-based)
- Central Device Management (upgrade, profiles, statistics)
- Central role-based Application deployment

Using the decision matrix



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Karin Schattka, PM Mobile UI

August 2002

THE BEST-RUN BUSINESSES RUN SAP

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- ➔ Example 2
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- ➔ **Example 3**
  - ➔ **Patient Management to support nurses and doctors**

Business Scenario: Example III

A day in a hospital

6:00 Wake and wash patients, change the bedclothes

8:00 What happened during the night? New arrivals, Take blood samples, blood pressure and temperature, distribute medication

10:00 Ward rounds: doctor gives directions to nurses, defines new medication

12:00 Nurses change bandages, distribute medication

14:00 Distribute medication, take blood pressure and temperature

16:00 Hand over patient files to the next shift

Diet plan for meals

Start the mobile project – Mobile Patient Management

Who are potential mobile users?

- Physicians and nurses

Where and how to use mobile solutions?

- At “point of care” (patient’s bed)
- Knowledge transfer between specialists

What features do these users require?

- Paper replacement
- Contemporary data collection
- Synchronous data collection
- Efficient physician charge-capture systems
- Simplified medical documentation

Start the mobile project II

What kind of information and how much data do these users require?

- Patient information
- Patient history...

How current does information need to be?

- Up-to-date

Identify business scenarios

- Patient list
- Diagnosis documentation
- Procedure documentation...

Decision Basis I

Mobile Device Support for Physicians and Nurses

- Need easy-to-handle and lightweight devices for permanent usage
- Need up-to-the-minute information
- Need easy text input
- Faster workflow

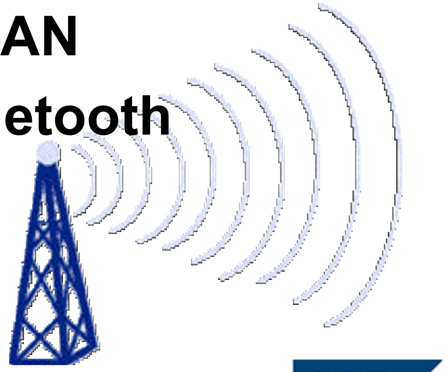
Pocket Loox incl. Bluetooth

Information

- Up-to-date and real-time
- Always available everywhere

Online Access essential

- **WLAN**
- **Bluetooth**



Data Security

- No data management on the device
- Latest wireless standards

Decision Basis II

Out of hospital

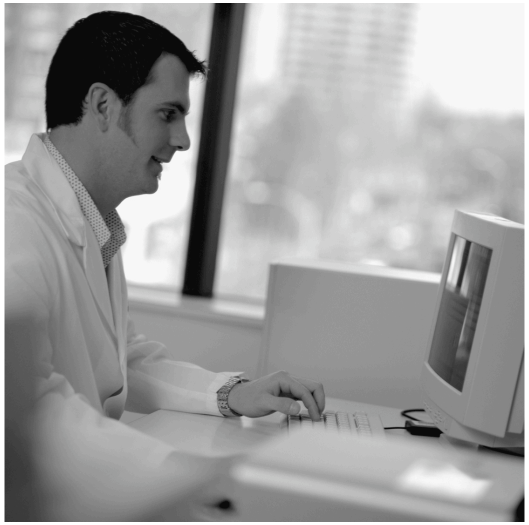
- No information required
- Notification for standby

Alert / SMS Functionality

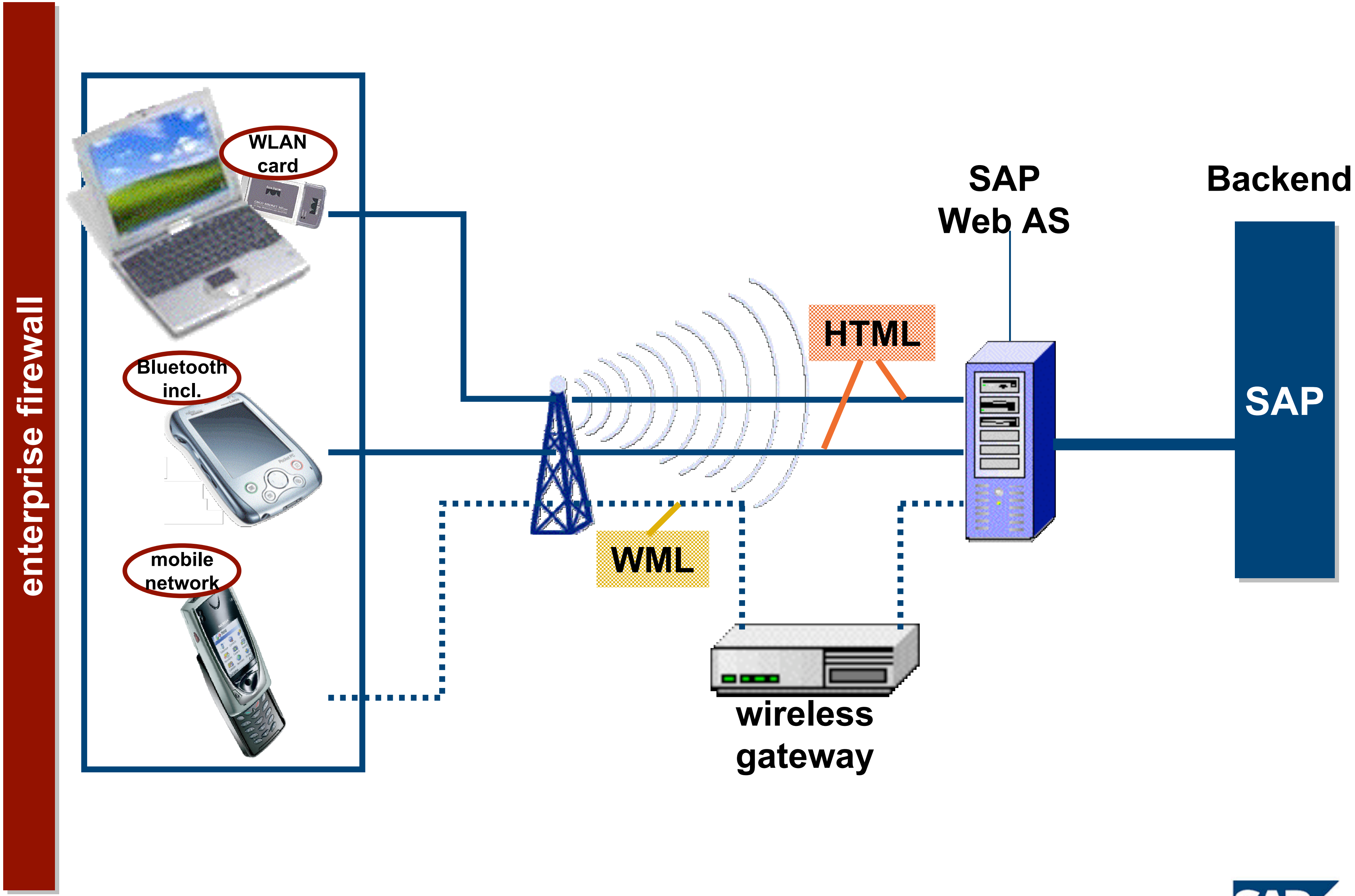
Solution

- Online Access to mySAP Healthcare

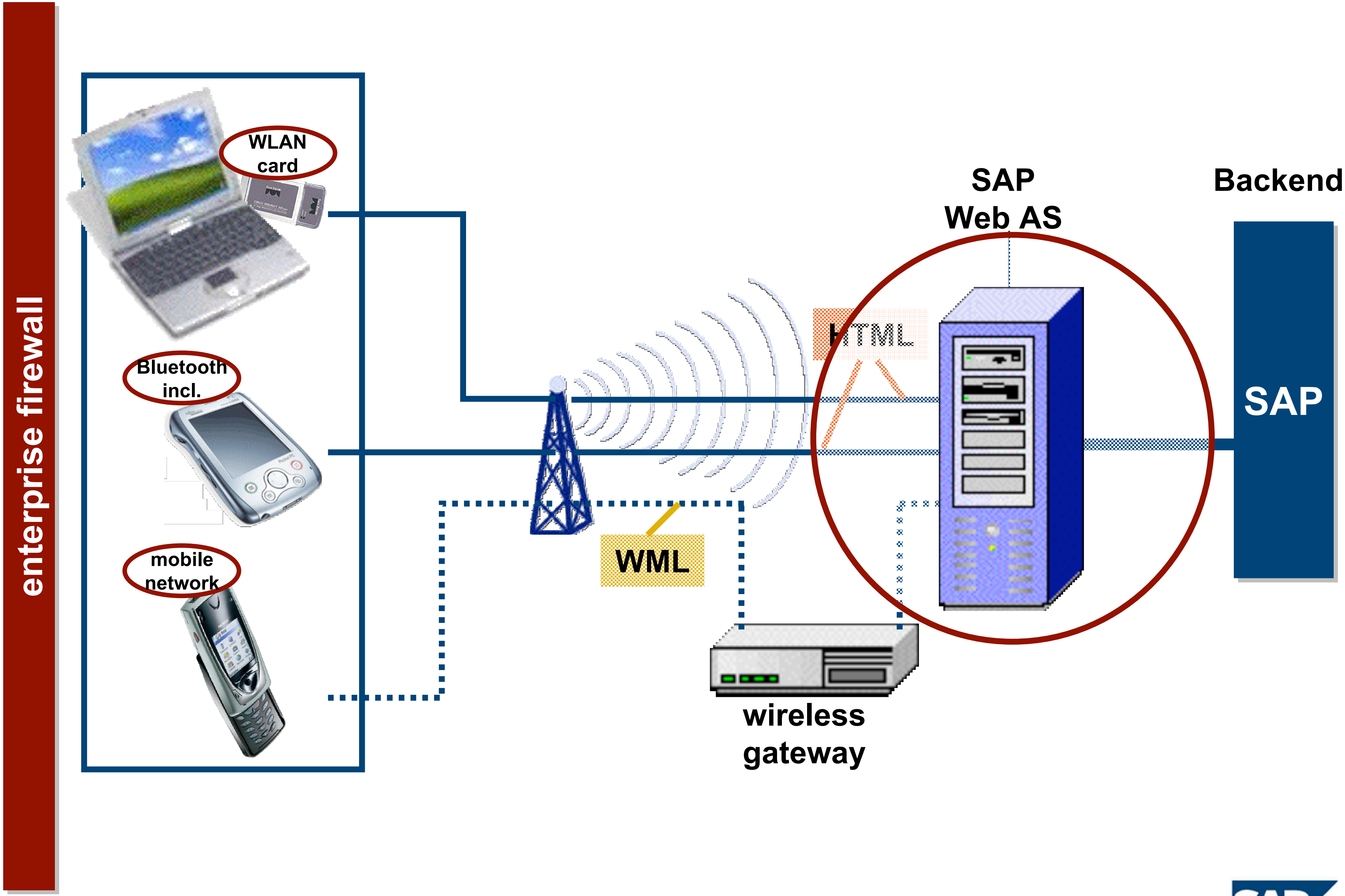
Mobile Patient Management + Web AS 6.20



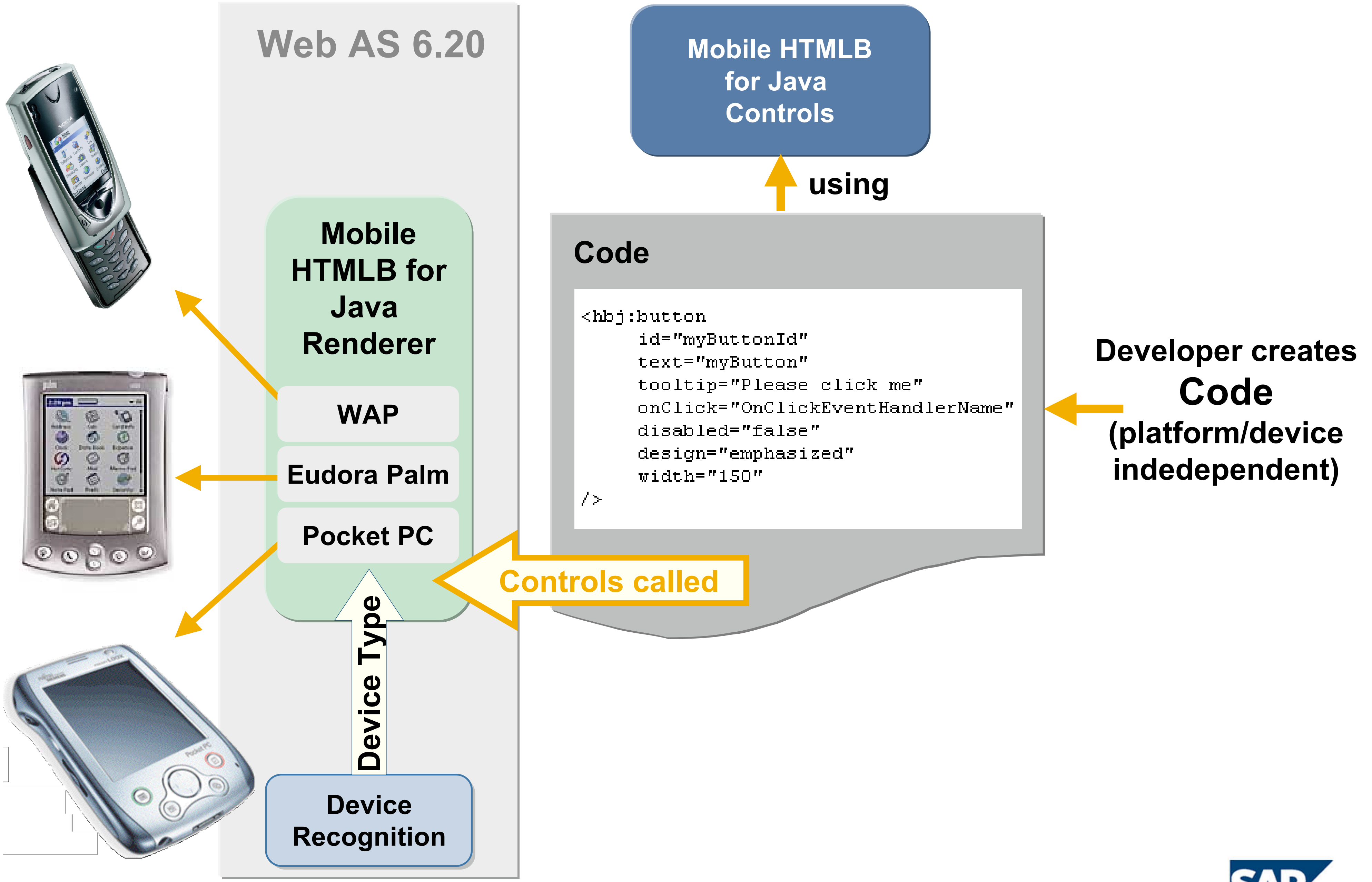
Wireless technologies zoom-in x10


enterprise firewall
WLAN card
Bluetooth incl.
mobile network
SAP Web AS
Backend
HTML
WML
SAP
wireless gateway

Wireless technologies zoom-in x10


enterprise firewall
WLAN card
Bluetooth incl.
mobile network
HTML
WML
SAP Web AS
Backend
SAP
wireless gateway

Developing Mobile Apps using Mobile HTMLB for Java



Web AS 6.20
Mobile HTMLB for Java Controls
using
Code
Mobile HTMLB for Java Renderer
WAP
Eudora Palm
Pocket PC
Controls called
Device Type
Device Recognition

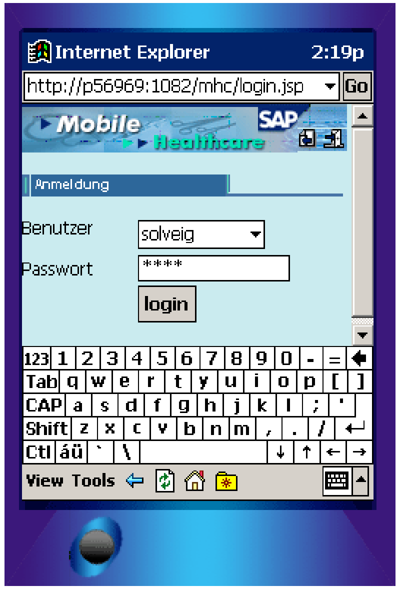
```
<hbj:button
      id="myButtonId"
      text="myButton"
      tooltip="Please click me"
      onClick="OnClickEventHandlerName"
      disabled="false"
      design="emphasized"
      width="150"
/>
```

Developer creates
Code
(platform/device indedependent)

© 2003 SAP AG,

SAP Offers Mobile Patient Management

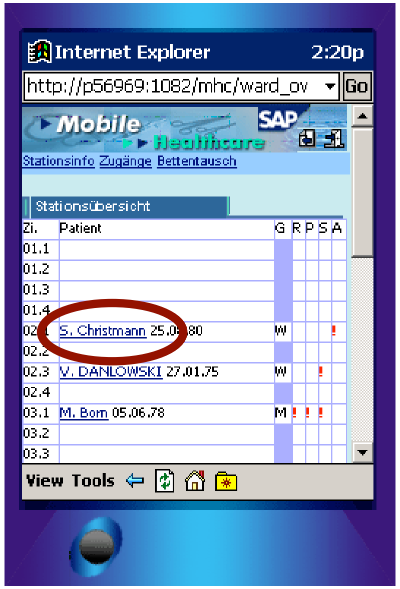
Screenshots


Internet Explorer
2:19p
http://p56969:1082/mhc/login.jsp
Go
Mobile Healthcare
SAP
Anmeldung
login
123 1 2 3 4 5 6 7 8 9 0 - =
Tab q w e r t y u i o p [ ]
CAP a s d f g h j k l ; '
Shift z x c v b n m , . /
Ctl áü ` \ ↓ ↑ ← →
View Tools

Benutzer: solveig

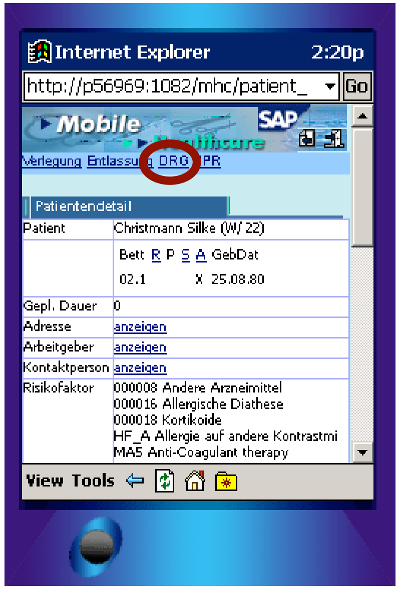
Passwort: ****

Logon to the system


Internet Explorer
2:20p
http://p56969:1082/mhc/ward_ov
Go
Mobile Healthcare
SAP
Stationsinfo
Zugänge
Bettentausch
Stationsübersicht
View Tools

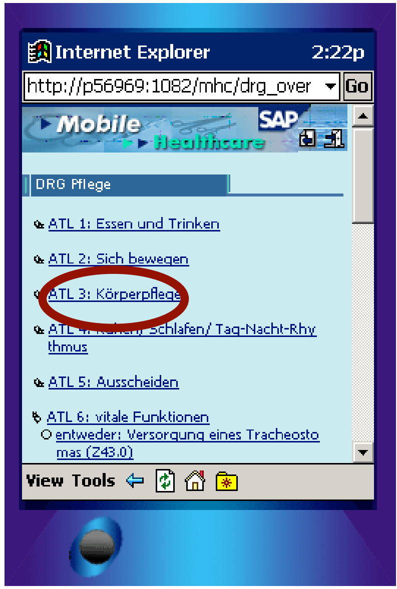
Zi.	Patient	G	R	P	S	A
01.1						
01.2						
01.3						
01.4						
02.1	S. Christmann 25.0[illegible]80	W				!
02.2						
02.3	V. DANLOWSKI 27.01.75	W			!	
02.4						
03.1	M. Born 05.06.78	M	!	!	!	
03.2						
03.3						

Station Overview


Internet Explorer
2:20p
http://p56969:1082/mhc/patient_
Go
Mobile Healthcare
SAP
Verlegung
Entlassung
DRG
PR
Patientendetail
View Tools

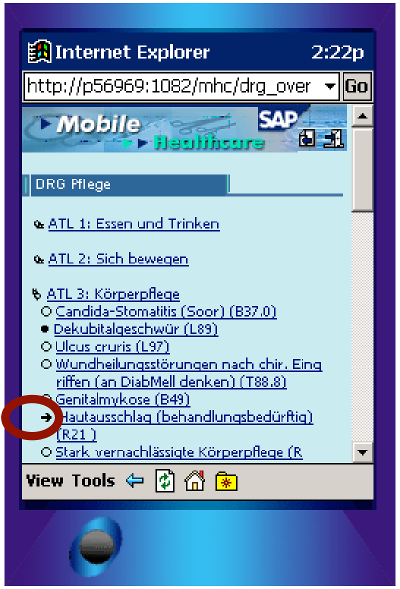
Patient	Christmann Silke (W/ 22)
	Bett R P S A GebDat 02.1 X 25.08.80
Gepl. Dauer	0
Adresse	anzeigen
Arbeitgeber	anzeigen
Kontaktperson	anzeigen
Risikofaktor	000008 Andere Arzneimittel 000016 Allergische Diathese 000018 Kortikoide HF_A Allergie auf andere Kontrastmi MA5 Anti-Coagulant therapy

Patient Detail


Internet Explorer
2:22p
http://p56969:1082/mhc/drg_over
Go
Mobile Healthcare
SAP
DRG Pflege
View Tools

- ATL 1: Essen und Trinken
- ATL 2: Sich bewegen
- ATL 3: Körperpflege
- ATL 4: Ruhen/ Schlafen/ Tag-Nacht-Rhythmus
- ATL 5: Ausscheiden
- ATL 6: vitale Funktionen
  - ○ entweder: Versorgung eines Tracheostomas (Z43.0)

DRG List


Internet Explorer
2:22p
http://p56969:1082/mhc/drg_over
Go
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SAP
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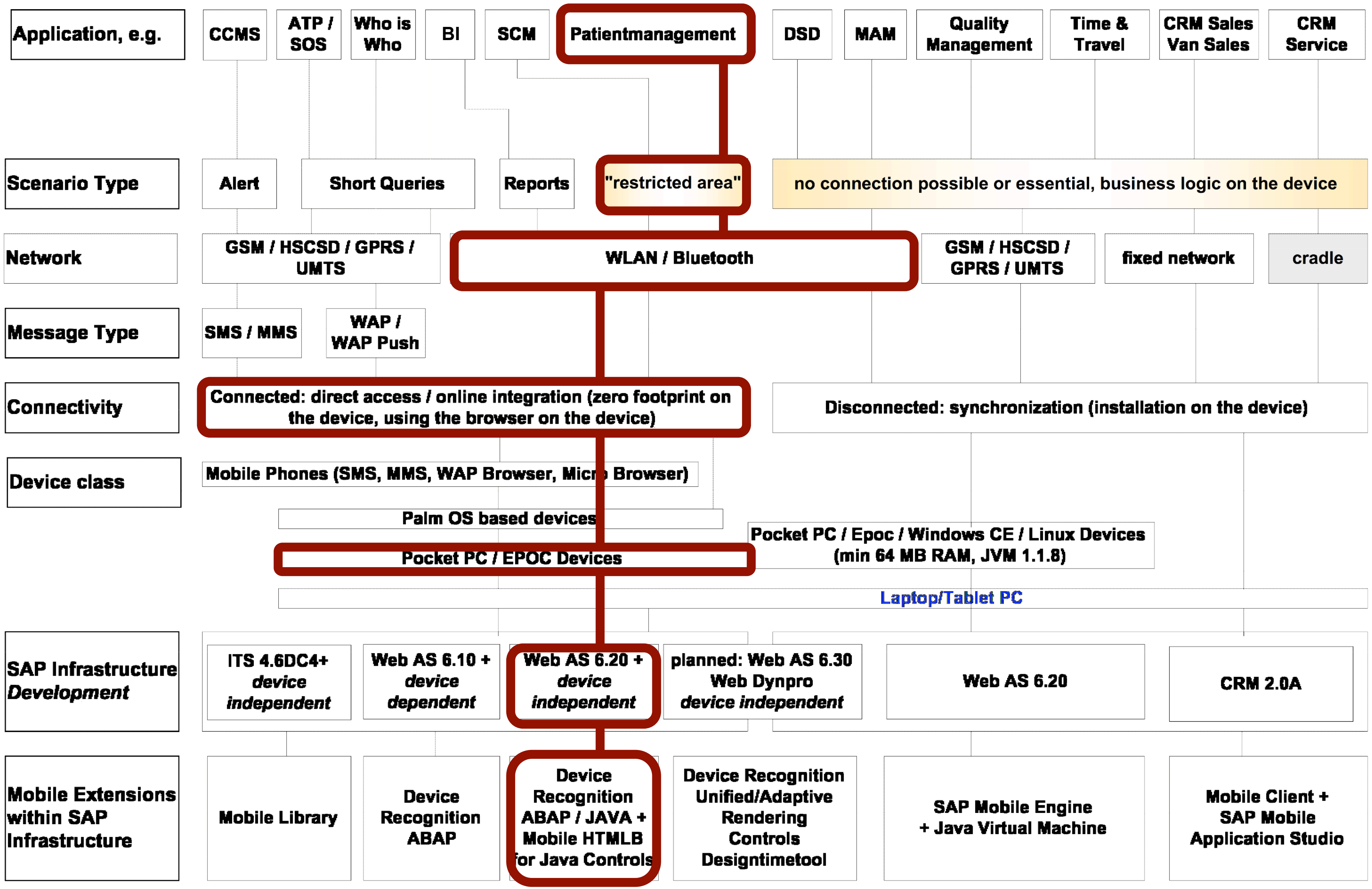
View Tools

- ATL 1: Essen und Trinken
- ATL 2: Sich bewegen
- ATL 3: Körperpflege
  - ○ Candida-Stomatitis (Soor) (B37.0)
  - ● Dekubitalgeschwür (L89)
  - ○ Ulcus cruris (L97)
  - ○ Wundheilungsstörungen nach chir. Eingriffen (an DiabMell denken) (T88.8)
  - ○ Genitalmykose (B49)
  - → Hautausschlag (behandlungsbedürftig) (R21)
  - ○ Stark vernachlässigte Körperpflege (R

Logon to the system

Using the decision matrix



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cradle

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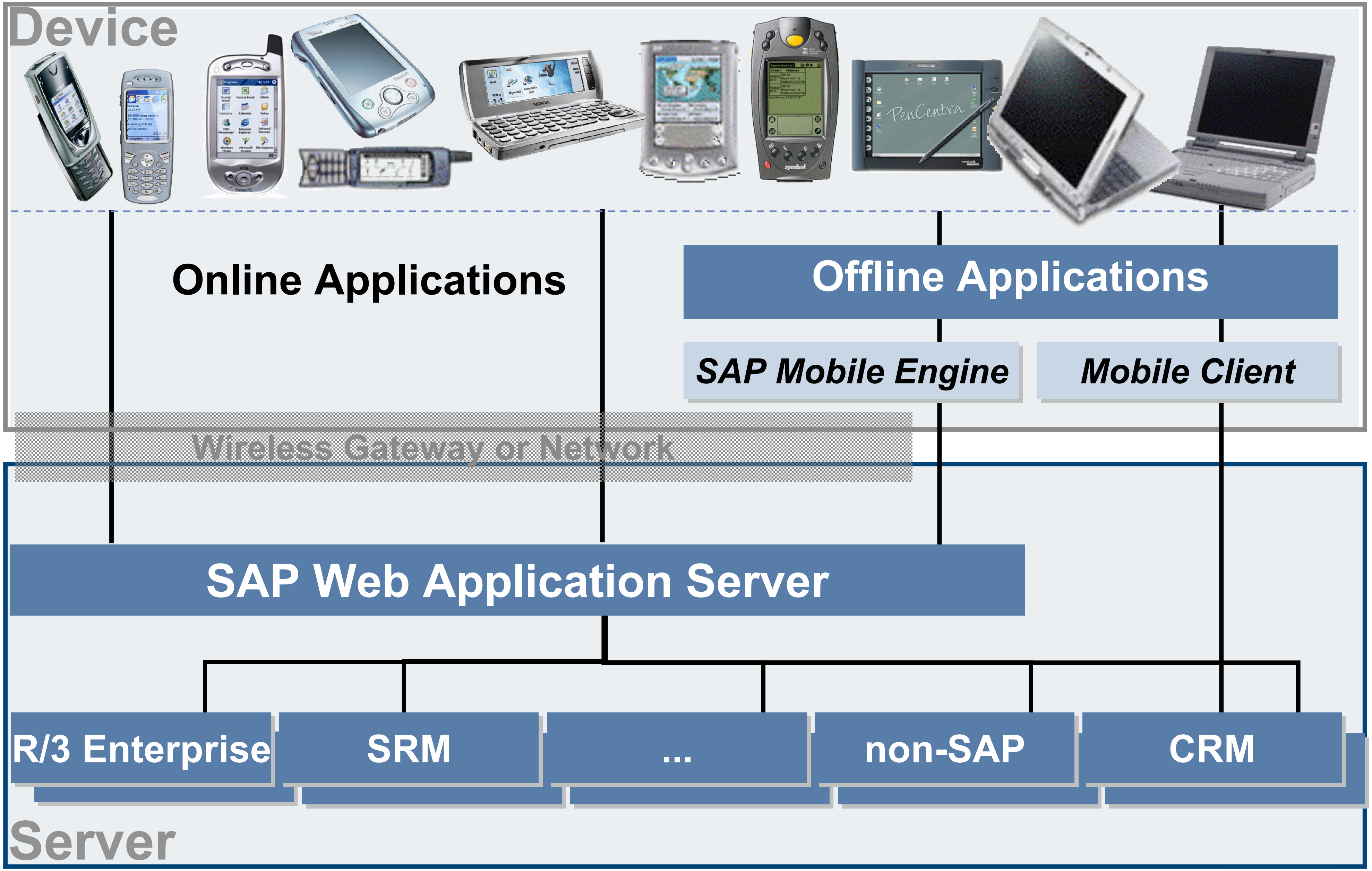
SAP Mobile Engine + Java Virtual Machine
Mobile Client + SAP Mobile Application Studio

Karin Schattka, PM Mobile UI

August 2002

THE BEST-RUN BUSINESSES RUN SAP

mySAP Mobile Business Architecture



Device

Online Applications

Offline Applications

SAP Mobile Engine

Mobile Client

Wireless Gateway or Network

SAP Web Application Server

R/3 Enterprise

SRM

...

non-SAP

CRM

Server

Agenda

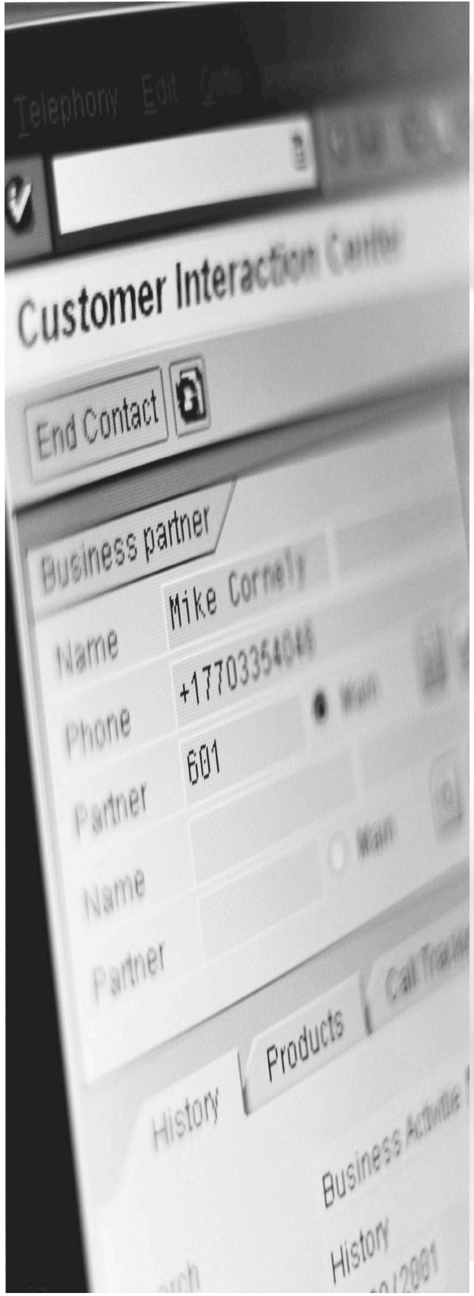
- Overview
  - mySAP Mobile Business Vision
  - Online Integration
  - SAP Mobile Infrastructure
  - SAP Mobile Application Studio
  - CRM Middleware Technology
- Examples
  - Offline Laptop
  - Offline Handheld
  - Online Handheld
- Special Features
  - SAP on Tablet PC
  - SAP CRM PDA Companion
- Unification with SAP NetWeaver and Web Dynpro

Summary

SAP, the world‘s leading provider of e-business software solutions, is the first to provide integrated mobile CRM applications which fully support the Tablet PC features

- The **seamless integration** of all innovative Tablet PC features into the mobile SAP solutions increases the ease-of-use, improves productivity and adds completely new possibilities
- **mySAP.com** is the open and integrated e-business platform which runs on a broad range of platforms and devices
- SAP is experienced in providing business applications on **mobile devices**

Key Benefits: mySAP CRM Mobile Sales on Tablet PC

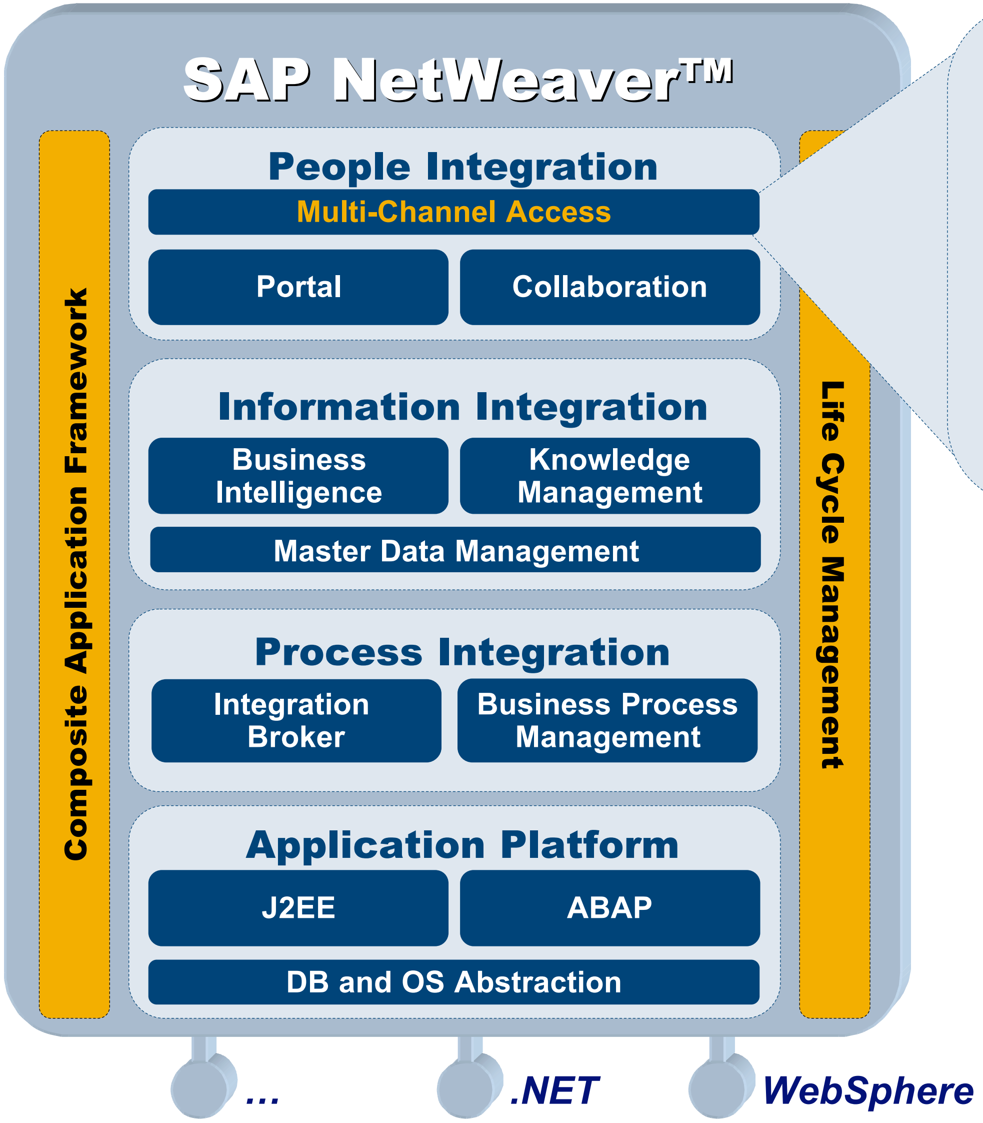

Telephony
Edit
Goto
Customer Interaction Center
End Contact
Business partner
Name
Mike Cornely
Phone
+17703354044
Partner
601
Name
Partner
History
Products
Call Tracking
Business Activities
History

SAP has integrated the innovative Tablet PC features into mySAP CRM, creating empowering tools for mobile workforces

- mySAP CRM Mobile Sales / Service are well **established** and powerful products
- Digital pen navigation, handwriting input and speech control integrate **powerful mobile capabilities** into SAP solutions
- Mobile SAP solutions on the Tablet PC will thus drive sales and service productivity and **increase customer satisfaction**

SAP NetWeaver™

The comprehensive integration and application platform for lower TCO


SAP NetWeaver™
Composite Application Framework
People Integration
Multi-Channel Access
Portal
Collaboration
Information Integration
Business Intelligence
Knowledge Management
Master Data Management
Process Integration
Integration Broker
Business Process Management
Application Platform
J2EE
ABAP
DB and OS Abstraction
Life Cycle Management
…
.NET
WebSphere

Multi-Channel Access

Technical Interaction Channels like

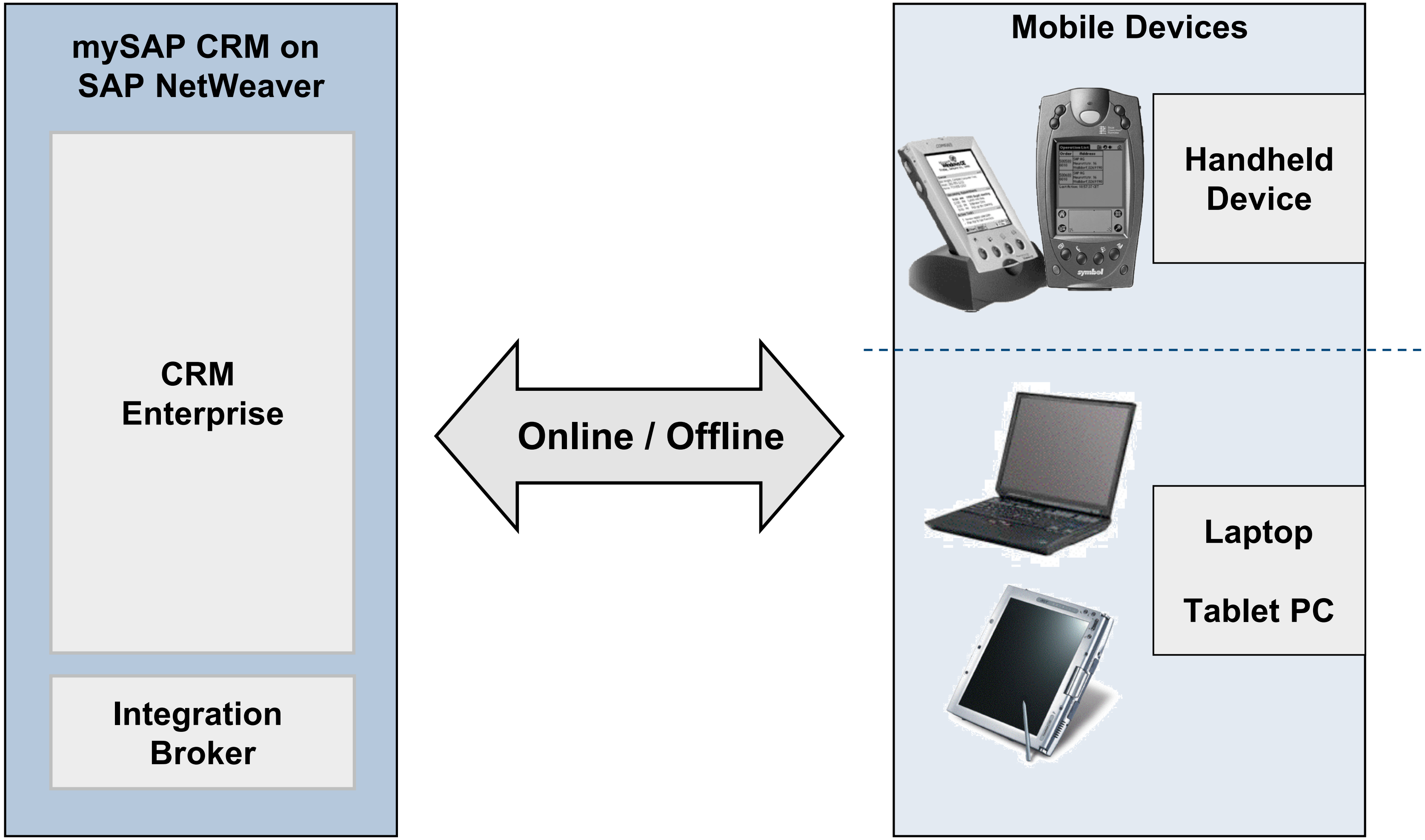
- Internet
- Interaction Center
- Mobile Devices

Mobile Devices

- Handheld Devices
- Laptops
- Tablet PCs
- ...

Example: mySAP CRM Mobile Solutions

...to enable users to work anytime and anywhere with all popular devices!



mySAP CRM on SAP NetWeaver

- CRM Enterprise
- Integration Broker

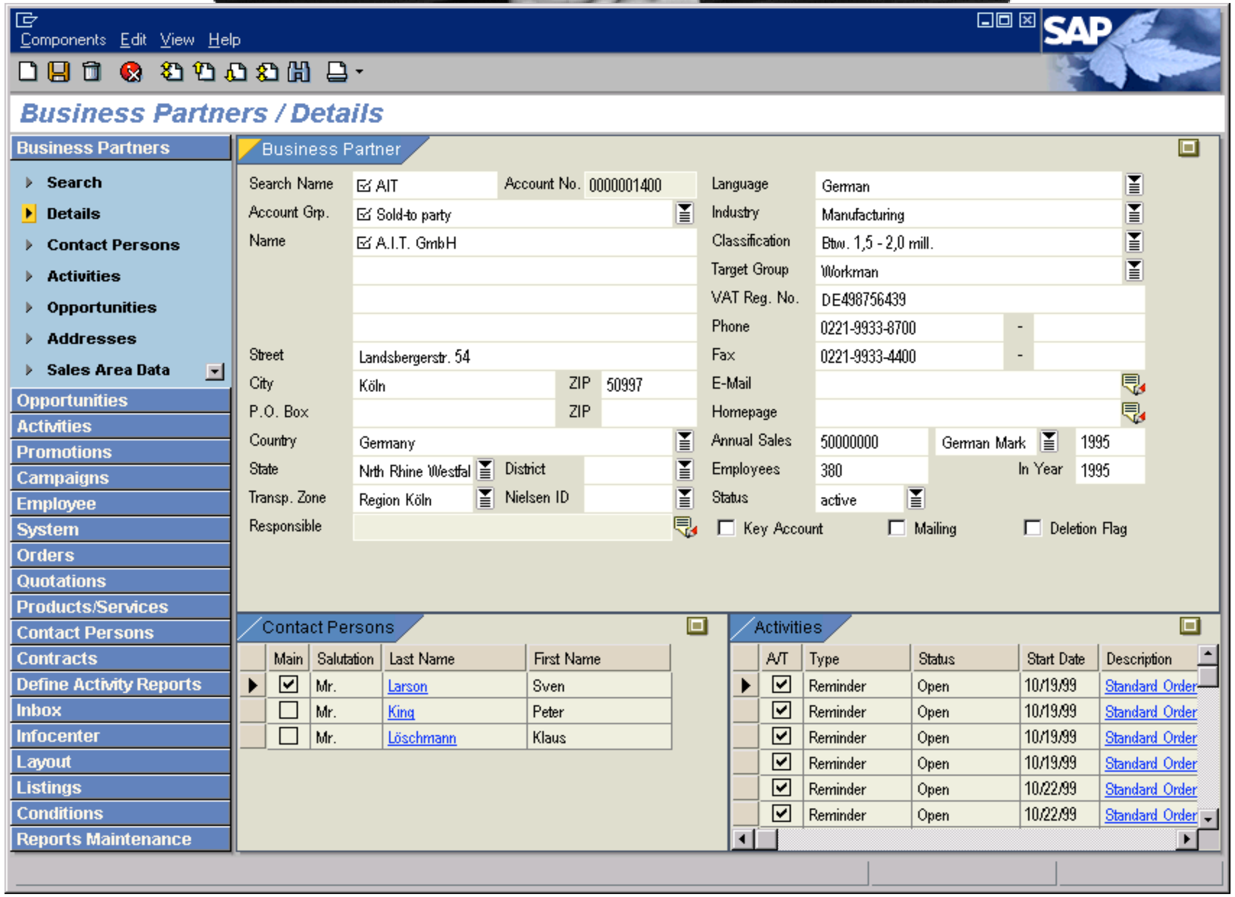
Online / Offline

Mobile Devices

- Handheld Device
- Laptop
- Tablet PC

mySAP Mobile Client Applications Provide...

- Smart and ***powerful business application*** with sohisticated functions for ***mobile devices***
- Enhanced offline use and ***collaboration*** support for e-business
- ***Web Front-end*** *for easy and* fast navigation
- Integrated Online connectivity for ***seamless integration***


Components Edit View Help
SAP
Business Partners / Details
Business Partners
Search
Details
Contact Persons
Activities
Opportunities
Addresses
Sales Area Data
Opportunities
Activities
Promotions
Campaigns
Employee
System
Orders
Quotations
Products/Services
Contact Persons
Contracts
Define Activity Reports
Inbox
Infocenter
Layout
Listings
Conditions
Reports Maintenance
Business Partner

Search Name ☑ AIT Account No. 0000001400
Account Grp. ☑ Sold-to party
Name ☑ A.I.T. GmbH
Street Landsbergerstr. 54
City Köln ZIP 50997
P.O. Box ZIP
Country Germany
State Nrth Rhine Westfal District
Transp. Zone Region Köln Nielsen ID
Responsible

Language German
Industry Manufacturing
Classification Btw. 1,5 - 2,0 mill.
Target Group Workman
VAT Reg. No. DE498756439
Phone 0221-9933-8700 -
Fax 0221-9933-4400 -
E-Mail
Homepage
Annual Sales 50000000 German Mark 1995
Employees 380 In Year 1995
Status active
☐ Key Account ☐ Mailing ☐ Deletion Flag

Contact Persons

Main	Salutation	Last Name	First Name
☑	Mr.	Larson	Sven
☐	Mr.	King	Peter
☐	Mr.	Löschmann	Klaus

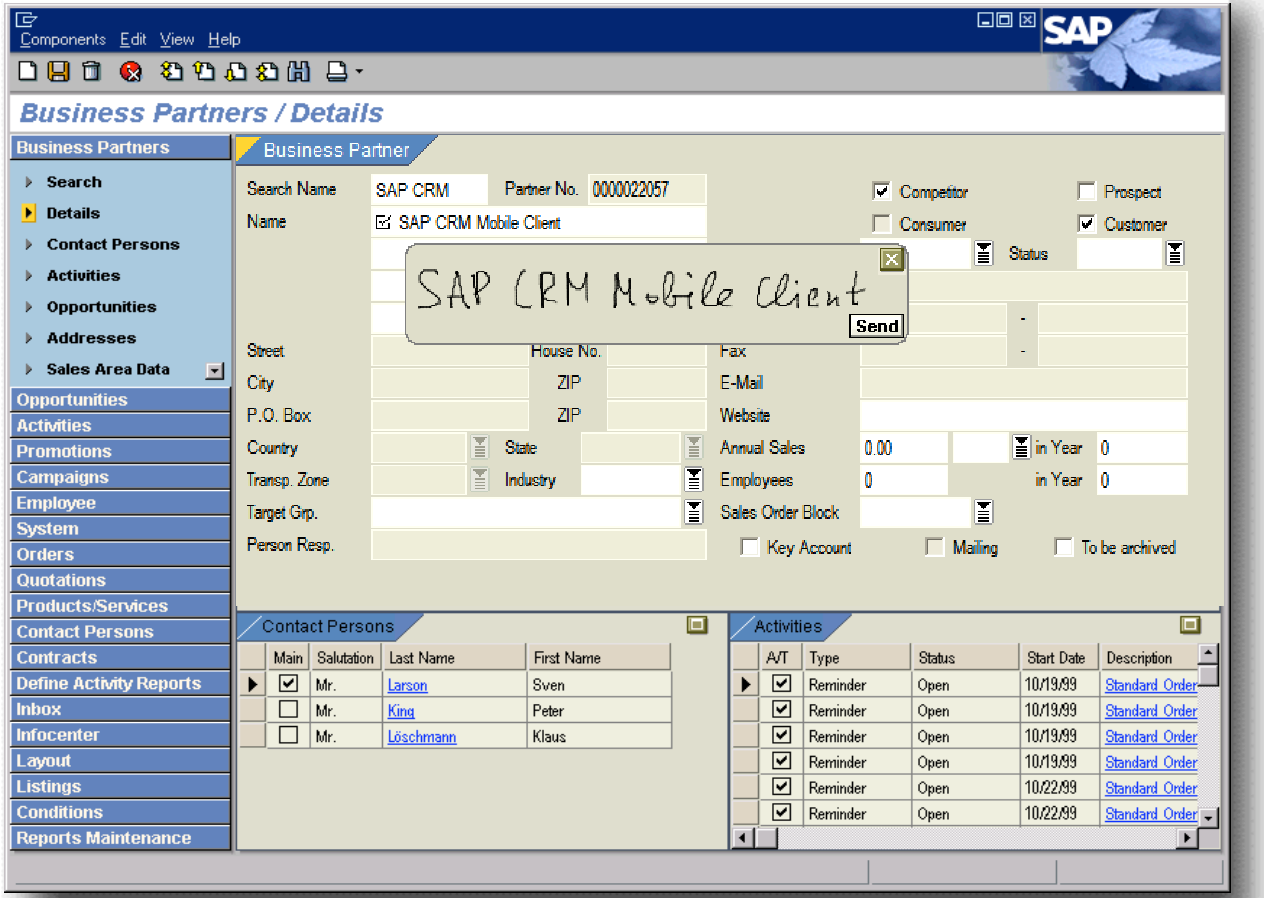
Activities

A/T	Type	Status	Start Date	Description
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order

Extended Features of SAP CRM Mobile Sales 3.0

With Tablet PC:

Using **handwriting recognition** and combining **Ink Input** and **keyboard** support for fast and easy data input and navigation


Components Edit View Help
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Business Partners / Details
Business Partners
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Opportunities
Addresses
Sales Area Data
Opportunities
Activities
Promotions
Campaigns
Employee
System
Orders
Quotations
Products/Services
Contact Persons
Contracts
Define Activity Reports
Inbox
Infocenter
Layout
Listings
Conditions
Reports Maintenance
Business Partner
Street
House No.
Fax
City
ZIP
E-Mail
P.O. Box
ZIP
Website
Country
State
Transp. Zone
Industry
Target Grp.
Sales Order Block
Person Resp.
Status
Send

Business Partner

Search Name: SAP CRM   Partner No.: 0000022057

Name: SAP CRM Mobile Client

☑ Competitor   ☐ Prospect

☐ Consumer   ☑ Customer

SAP CRM Mobile Client

Annual Sales: 0.00   in Year: 0

Employees: 0   in Year: 0

☐ Key Account   ☐ Mailing   ☐ To be archived

Contact Persons

Main	Salutation	Last Name	First Name
☑	Mr.	Larson	Sven
☐	Mr.	King	Peter
☐	Mr.	Löschmann	Klaus

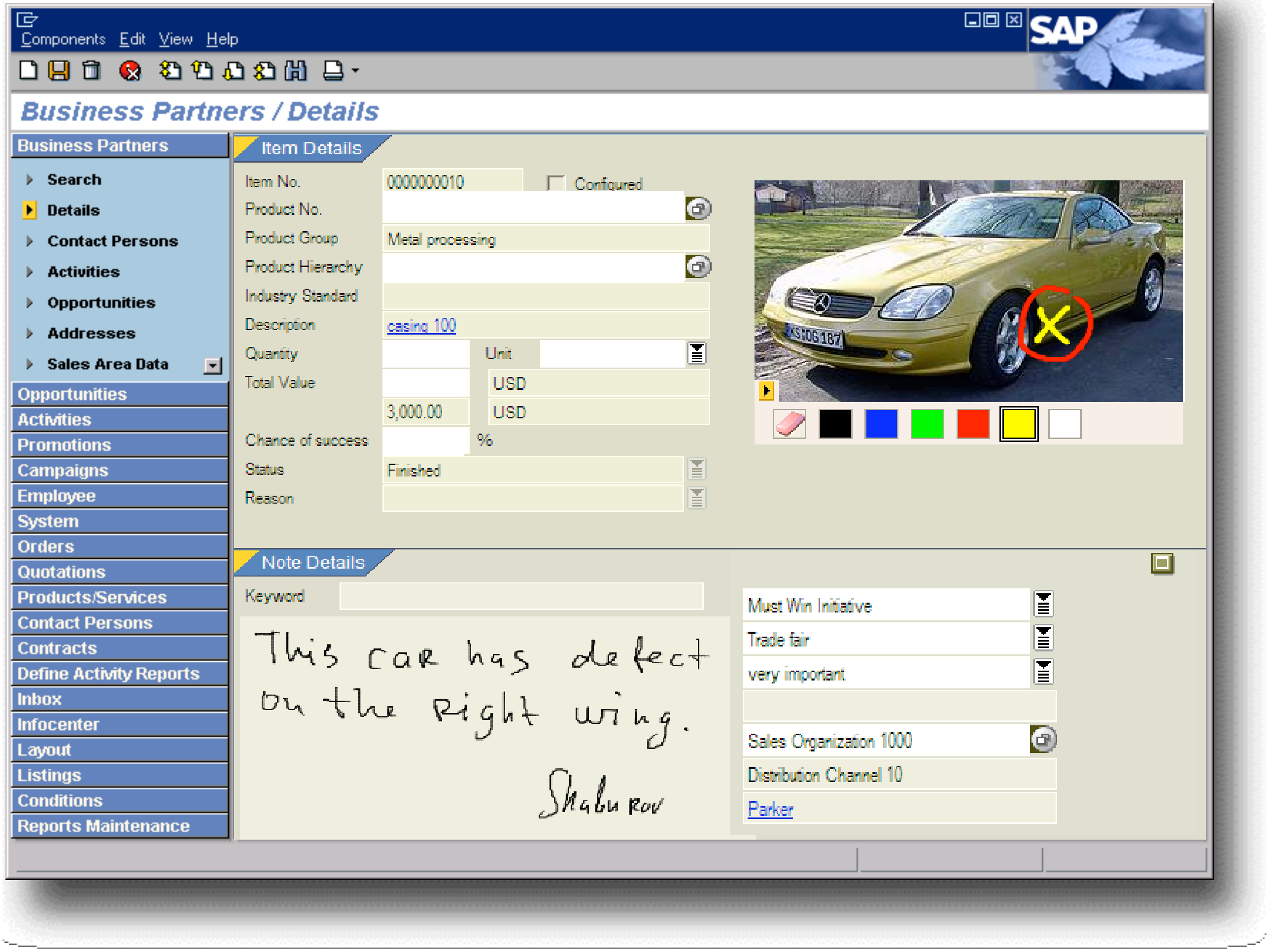
Activities

A/T	Type	Status	Start Date	Description
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/19/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order
☑	Reminder	Open	10/22/99	Standard Order

Extended Features of SAP CRM Mobile Sales 3.0

With Tablet PC:

Combining **handwritten notes** and **graphical interaction** with the SAP solution for using multimodal interaction


Components Edit View Help
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Business Partners / Details
Business Partners
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Contact Persons
Activities
Opportunities
Addresses
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Opportunities
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Campaigns
Employee
System
Orders
Quotations
Products/Services
Contact Persons
Contracts
Define Activity Reports
Inbox
Infocenter
Layout
Listings
Conditions
Reports Maintenance
Item Details
Note Details
KS 06 187

Item No. 0000000010

☐ Configured

Product No.

Product Group Metal processing

Product Hierarchy

Industry Standard

Description casing 100

Quantity

Unit

Total Value USD

3,000.00 USD

Chance of success %

Status Finished

Reason

Keyword

This car has defect on the right wing.

Shaburov

Must Win Initiative

Trade fair

very important

Sales Organization 1000

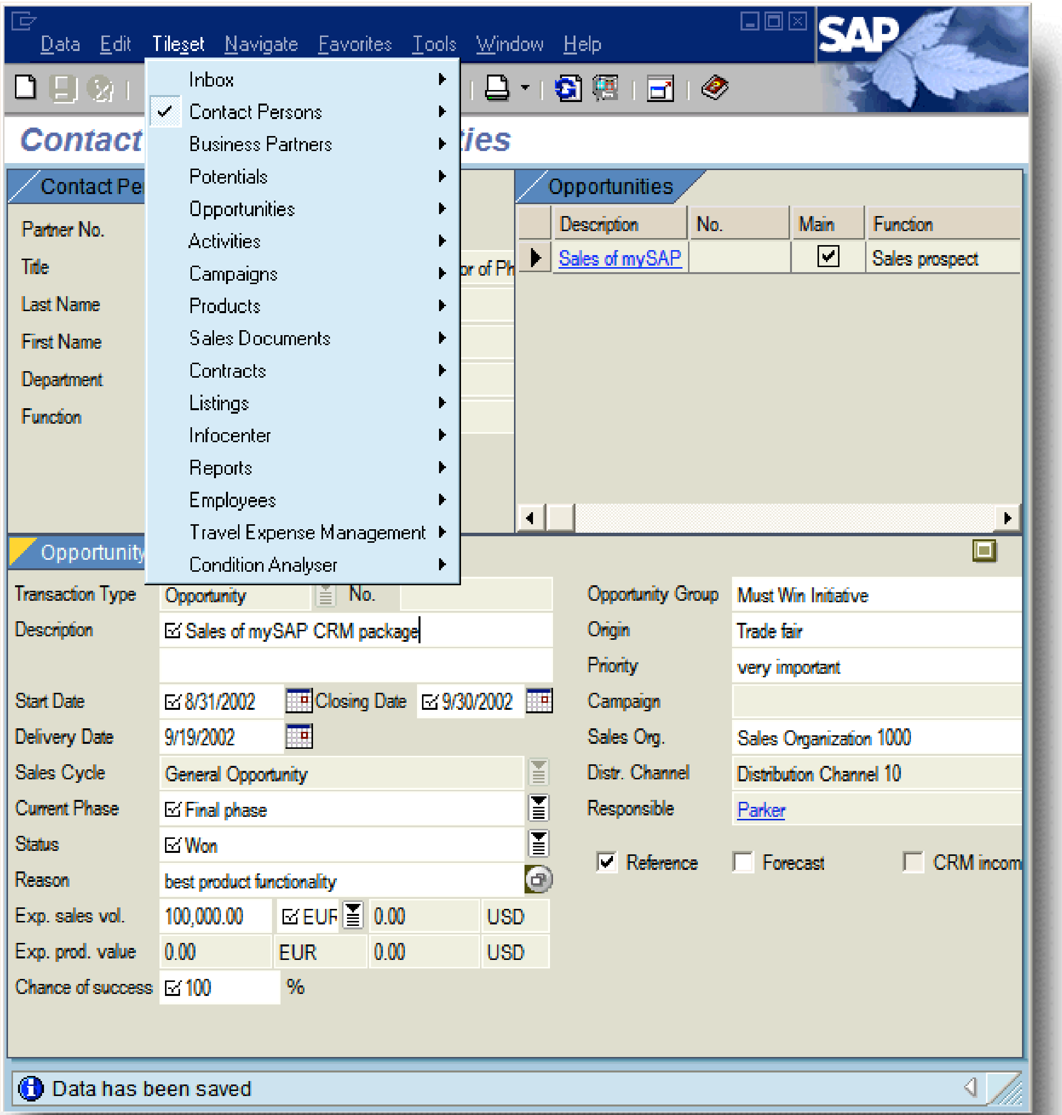
Distribution Channel 10

Parker

Extended Features of SAP CRM Mobile Sales 3.0

With Tablet PC:

Changing the **Screen Orientation:** Automatic Switch from Portrait to Landscape mode and back


Data Edit Tileset Navigate Favorites Tools Window Help
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Inbox
Contact Persons
Business Partners
Potentials
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Sales Documents
Contracts
Listings
Infocenter
Reports
Employees
Travel Expense Management
Condition Analyser
Contact
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Opportunities
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Partner No.	
Title	
Last Name	
First Name	
Department	
Function	

Description	No.	Main	Function
Sales of mySAP		☑	Sales prospect

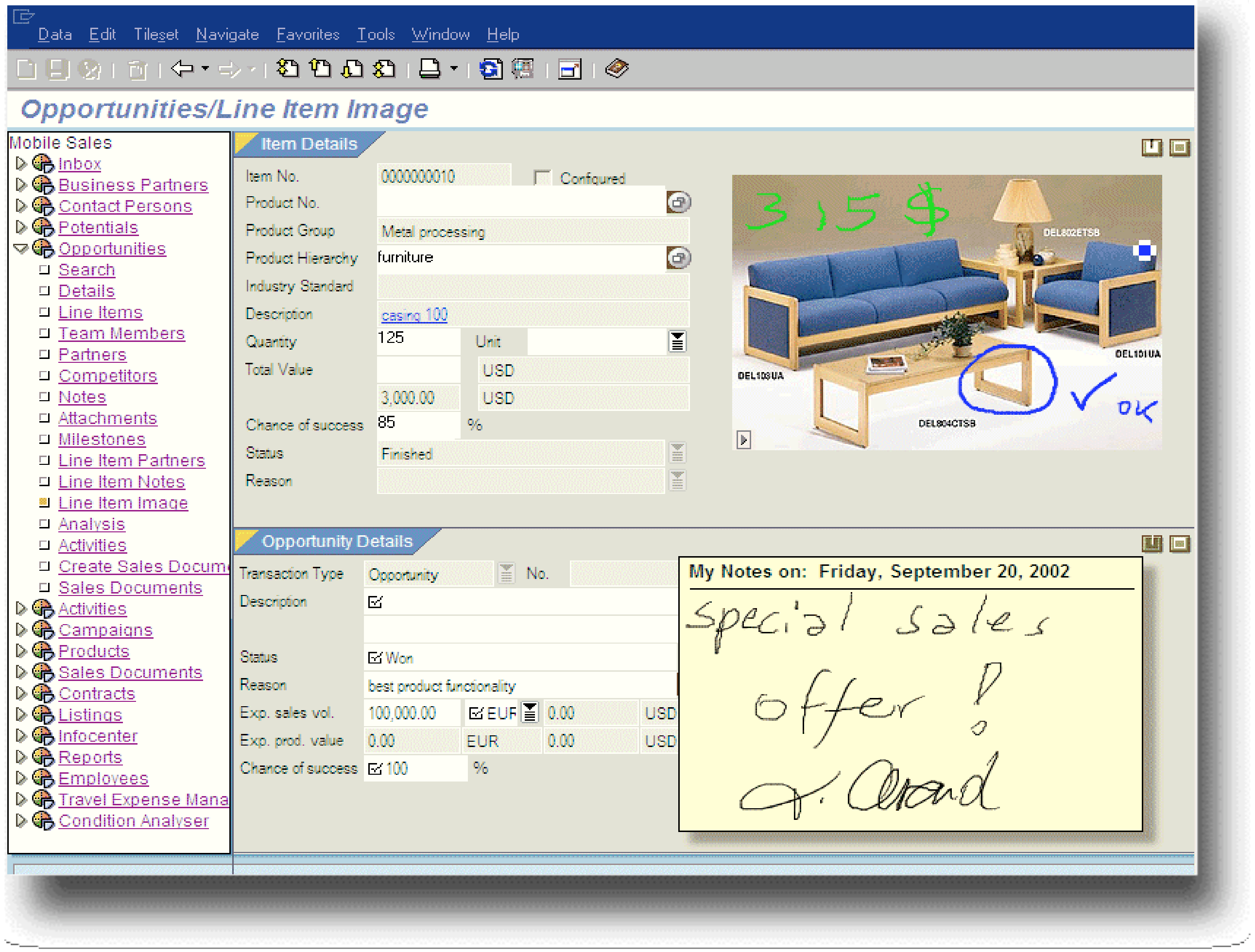
Transaction Type	Opportunity No.	Opportunity Group	Must Win Initiative
Description	Sales of mySAP CRM package	Origin	Trade fair
		Priority	very important
Start Date	8/31/2002 Closing Date 9/30/2002	Campaign	
Delivery Date	9/19/2002	Sales Org.	Sales Organization 1000
Sales Cycle	General Opportunity	Distr. Channel	Distribution Channel 10
Current Phase	Final phase	Responsible	Parker
Status	Won	☑ Reference	☐ Forecast ☐ CRM incom
Reason	best product functionality		
Exp. sales vol.	100,000.00 EUR 0.00 USD		
Exp. prod. value	0.00 EUR 0.00 USD		
Chance of success	100 %		

Data has been saved

Extended Features of SAP CRM Mobile Sales 3.0

With Tablet PC:

Integrating with all powerful **Tools** of the **Microsoft Windows XP for Tablet PC** Operating System such as Sticky Notes, Microsoft Journal, etc.


Data Edit Tileset Navigate Favorites Tools Window Help
Mobile Sales
Inbox
Business Partners
Contact Persons
Potentials
Opportunities
Search
Details
Line Items
Team Members
Partners
Competitors
Notes
Attachments
Milestones
Line Item Partners
Line Item Notes
Line Item Image
Analysis
Activities
Create Sales Docume
Sales Documents
Activities
Campaigns
Products
Sales Documents
Contracts
Listings
Infocenter
Reports
Employees
Travel Expense Mana
Condition Analyser
3,5 $
DEL802ETSB
DEL101UA
DEL103UA
DEL804CTSB
ok

Opportunities/Line Item Image

Item Details

Item No.	0000000010	☐ Configured	
Product No.			
Product Group	Metal processing		
Product Hierarchy	furniture		
Industry Standard			
Description	casing 100		
Quantity	125	Unit	
Total Value		USD	
	3,000.00	USD	
Chance of success	85	%	
Status	Finished		
Reason			

Opportunity Details

Transaction Type	Opportunity	No.		
Description	☑			
Status	☑ Won			
Reason	best product functionality			
Exp. sales vol.	100,000.00	☑ EUR	0.00	USD
Exp. prod. value	0.00	EUR	0.00	USD
Chance of success	☑ 100	%		

My Notes on: Friday, September 20, 2002

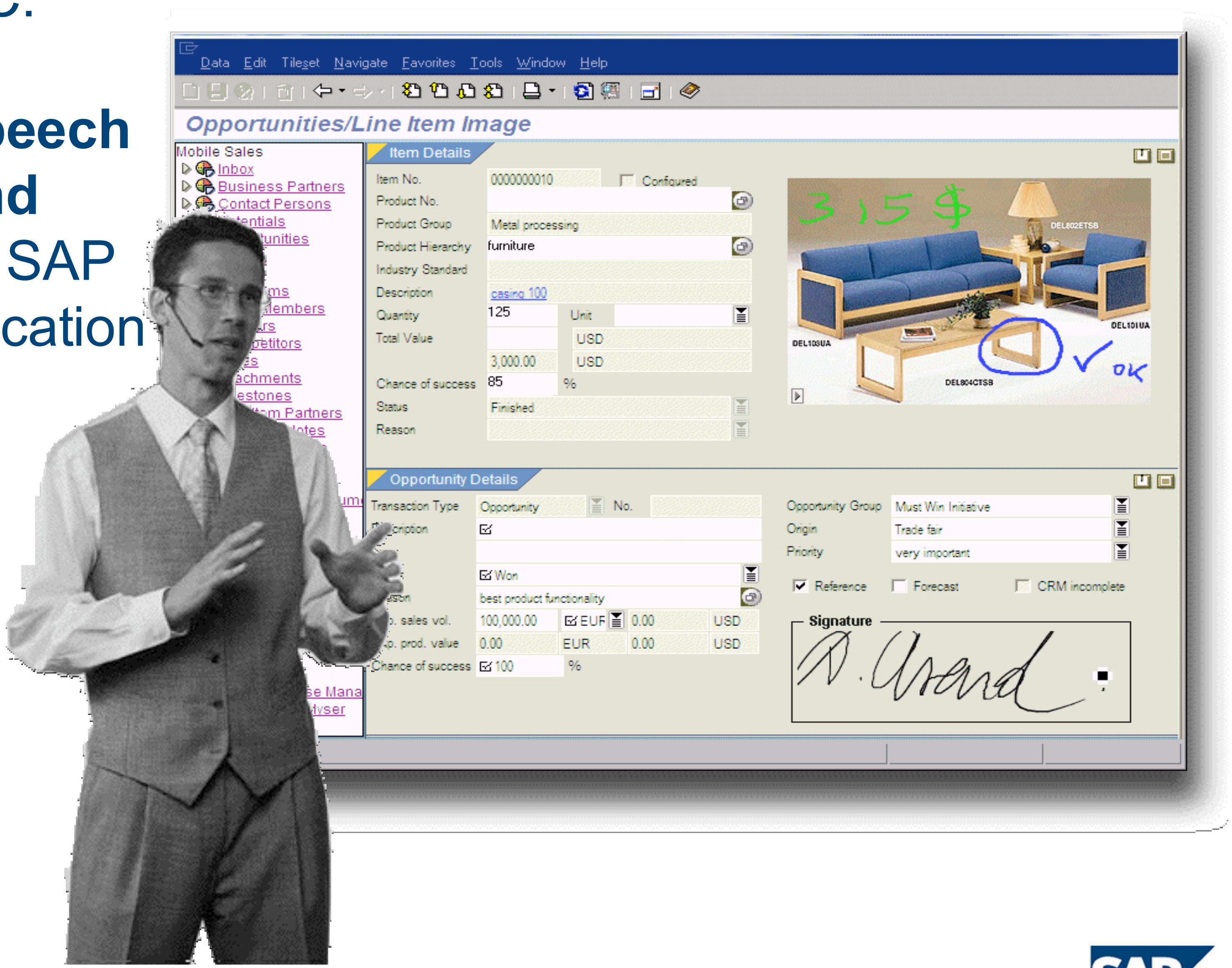
Special sales offer!

G. Arend

Extended Features of SAP CRM Mobile Sales 3.0

With Tablet PC:

Enabling of **speech navigation and control** of the SAP business application


Data Edit Tileset Navigate Favorites Tools Window Help
Opportunities/Line Item Image
Mobile Sales
Inbox
Business Partners
Contact Persons
Item Details
Opportunity Details
315 $
ok
DEL802ETSB
DEL101UA
DEL103UA
DEL804CTSB

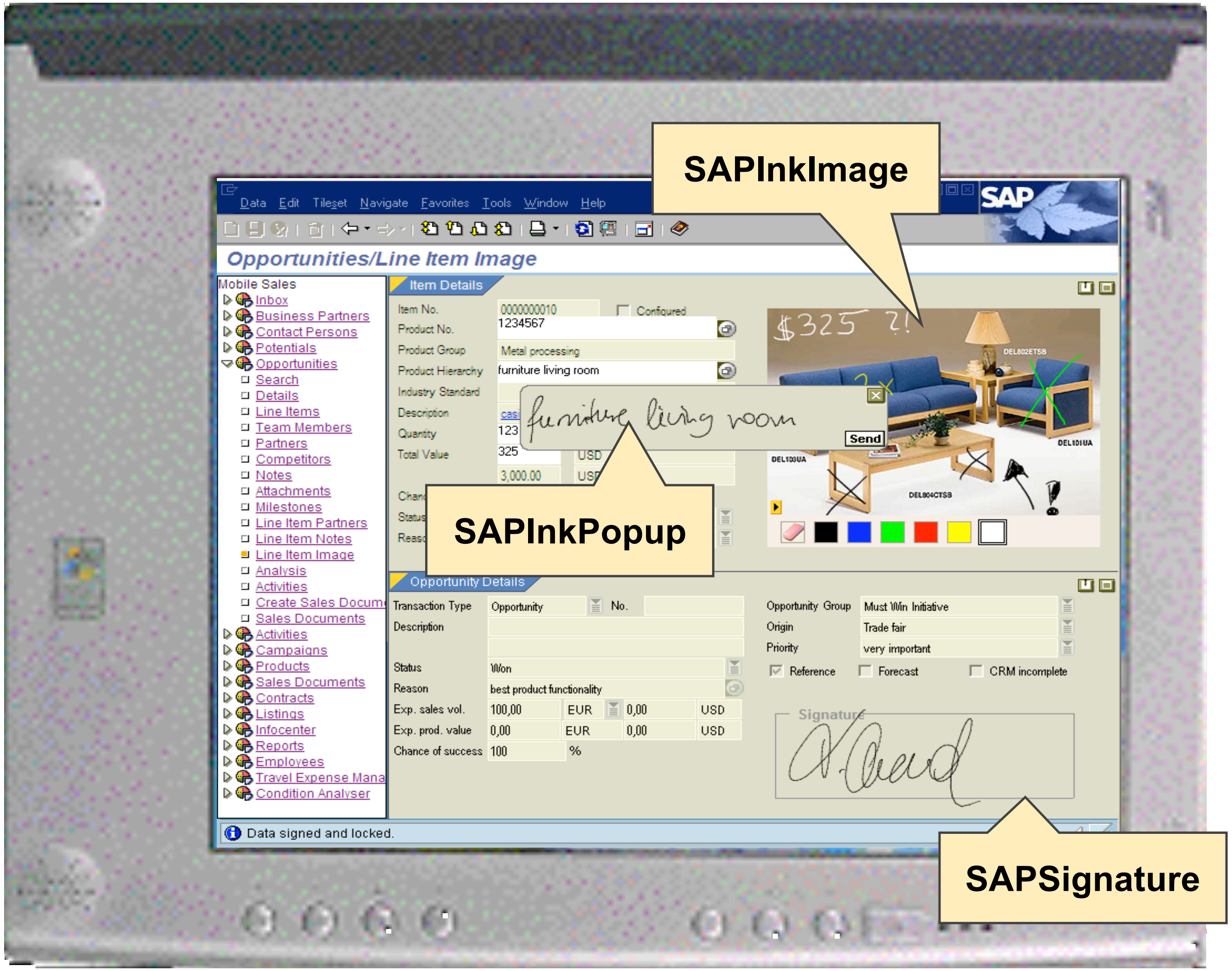
Item No. 0000000010 ☐ Configured
Product No.
Product Group Metal processing
Product Hierarchy furniture
Industry Standard
Description casing 100
Quantity 125 Unit
Total Value USD
3,000.00 USD
Chance of success 85 %
Status Finished
Reason

Transaction Type Opportunity No.
☑ Won
best product functionality
100,000.00 ☑ EUR 0.00 USD
0.00 EUR 0.00 USD
Chance of success ☑ 100 %

Opportunity Group Must Win Initiative
Origin Trade fair
Priority very important
☑ Reference ☐ Forecast ☐ CRM incomplete

Signature D. Arend

Overview: integrated Tablet PC features


SAPInkImage
SAPInkPopup
SAPSignature
Data
Edit
Tileset
Navigate
Favorites
Tools
Window
Help
SAP
Mobile Sales
Inbox
Business Partners
Contact Persons
Potentials
Opportunities
Search
Details
Line Items
Team Members
Partners
Competitors
Notes
Attachments
Milestones
Line Item Partners
Line Item Notes
Line Item Image
Analysis
Activities
Create Sales Docum
Sales Documents
Activities
Campaigns
Products
Sales Documents
Contracts
Listings
Infocenter
Reports
Employees
Travel Expense Mana
Condition Analyser
Item Details
Opportunity Details
Send
$325 ?!
DEL802ETSB
DEL101UA
DEL103UA
DEL804CTSB

Opportunities/Line Item Image

Item No. 0000000010 ☐ Configured

Product No. 1234567

Product Group Metal processing

Product Hierarchy furniture living room

Industry Standard

Description casi

Quantity 123

Total Value 325 USD

3,000.00 USD

furniture living room

Transaction Type Opportunity No.

Description

Status Won

Reason best product functionality

Exp. sales vol. 100,00 EUR 0,00 USD

Exp. prod. value 0,00 EUR 0,00 USD

Chance of success 100 %

Opportunity Group Must Win Initiative

Origin Trade fair

Priority very important

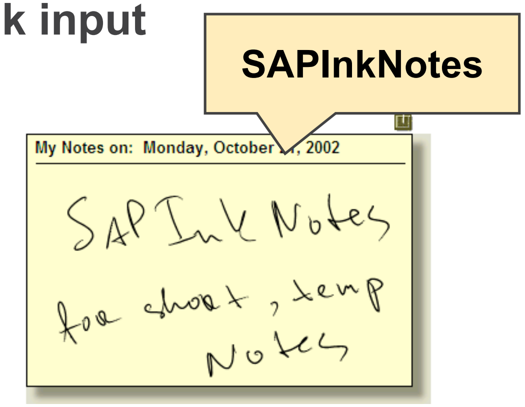
☑ Reference ☐ Forecast ☐ CRM incomplete

Signature

Data signed and locked.

Handwriting recognition engine:

Ink input


SAPInkNotes

My Notes on: Monday, October , 2002

SAP Ink Notes for short, temp Notes

Speech recognition engine:

Speech control

Preview: SAP CRM Mobile Sales 4.0 on Tablet PC

Telephony
Edit
Customer Interaction
End Contact
Business partner
Mike Corne
+177033540
601
Products
Business Activities
History
Preview

SAP™ CRM MOBILE CLIENT ON TABLET PC

mySAP CRM for Laptops and Tablet PCs

Offline Operation

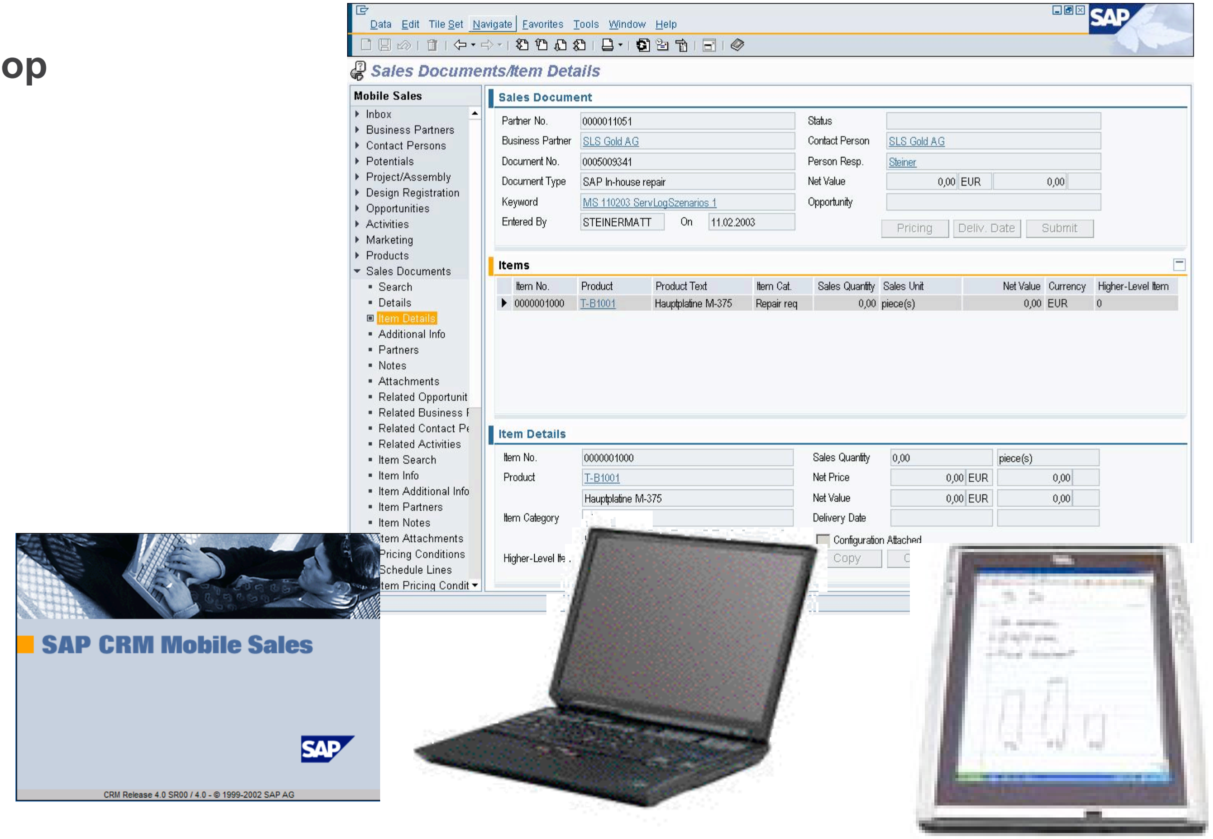
- Mobile Client application with separate database on the laptop
- Workgroup Solution
- Groupware Integration
- Local Pricing and Configuration Engine

Data Synchronization with CRM Middleware

- Filtered and unfiltered replication
- Dependencies between objects
- Territory Management
- Realignment

Solution Management

- Fast Deployment with automatic installation process
- Backup and Recovery


Data Edit Tile Set Navigate Favorites Tools Window Help
SAP
Sales Documents/Item Details
Mobile Sales
Inbox
Business Partners
Contact Persons
Potentials
Project/Assembly
Design Registration
Opportunities
Activities
Marketing
Products
Sales Documents
Search
Details
Item Details
Additional Info
Partners
Notes
Attachments
Related Opportunit
Related Business F
Related Contact Pe
Related Activities
Item Search
Item Info
Item Additional Info
Item Partners
Item Notes
Item Attachments
Pricing Conditions
Schedule Lines
Item Pricing Condit
Pricing
Deliv. Date
Submit
Copy
SAP CRM Mobile Sales
SAP
CRM Release 4.0 SR00 / 4.0 - © 1999-2002 SAP AG

Sales Document

Partner No. 0000011051
Business Partner SLS Gold AG
Document No. 0005009341
Document Type SAP In-house repair
Keyword MS 110203 ServLogSzenarios 1
Entered By STEINERMATT On 11.02.2003
Status
Contact Person SLS Gold AG
Person Resp. Steiner
Net Value 0,00 EUR 0,00
Opportunity

Items

Item No.	Product	Product Text	Item Cat.	Sales Quantity	Sales Unit	Net Value	Currency	Higher-Level Item
0000001000	T-B1001	Hauptplatine M-375	Repair req	0,00	piece(s)	0,00	EUR	0

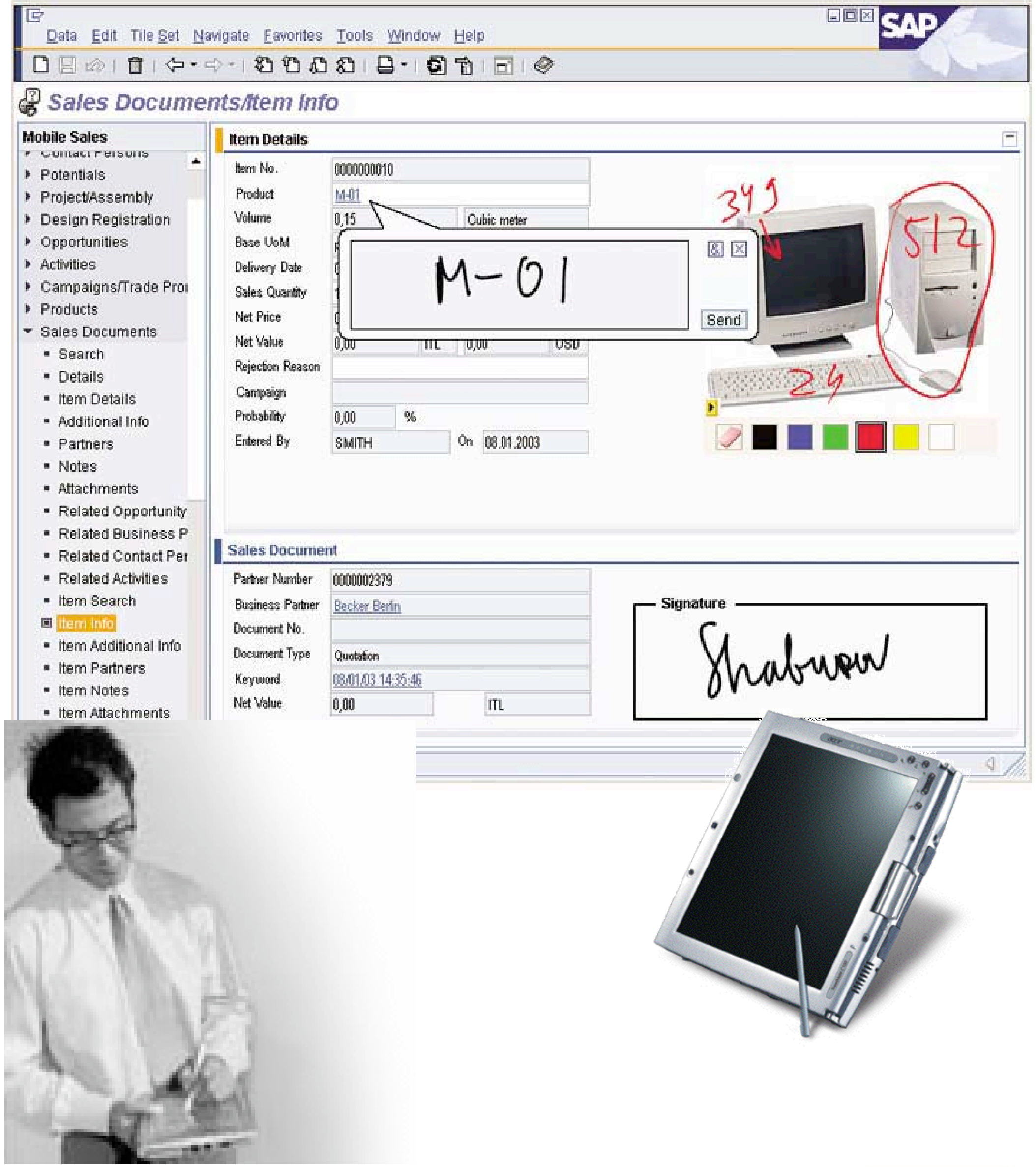
Item Details

Item No. 0000001000
Product T-B1001
Hauptplatine M-375
Item Category
Higher-Level Ite
Sales Quantity 0,00 piece(s)
Net Price 0,00 EUR 0,00
Net Value 0,00 EUR 0,00
Delivery Date
☐ Configuration Attached

mySAP CRM for Tablet PC – special features

Ease-of-use

- Handwriting recognition: writing, drawing and erasing like on paper
- Combining ink input and keyboard support for fast and easy data input and navigation
- Changing Screen orientation from portrait to landscape mode
- Speech navigation and control

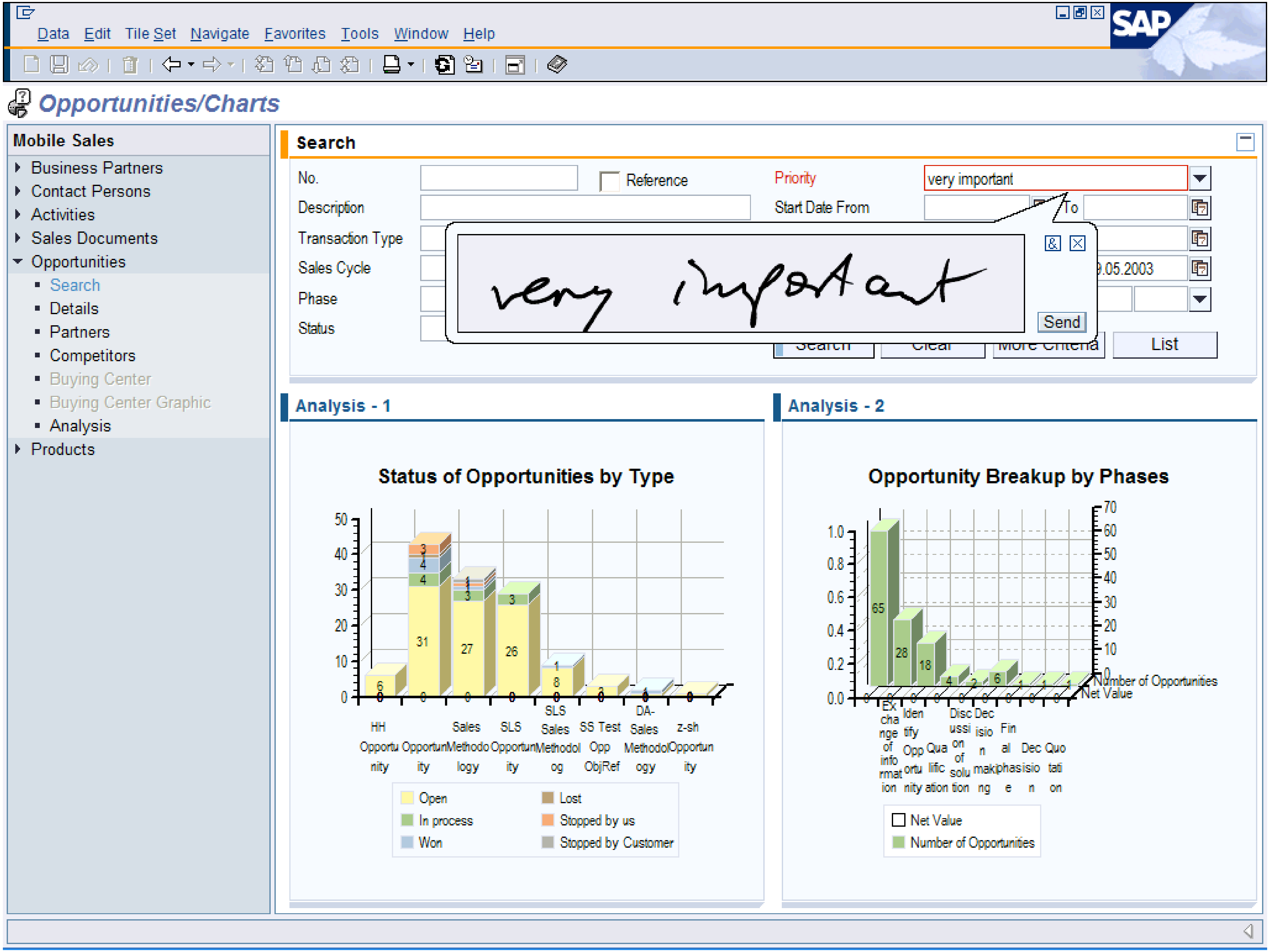

Data
Edit
Tile Set
Navigate
Favorites
Tools
Window
Help
SAP
Sales Documents/Item Info
Mobile Sales
Contact Persons
Potentials
Project/Assembly
Design Registration
Opportunities
Activities
Campaigns/Trade Pro
Products
Sales Documents
Search
Details
Item Details
Additional Info
Partners
Notes
Attachments
Related Opportunity
Related Business P
Related Contact Per
Related Activities
Item Search
Item Info
Item Additional Info
Item Partners
Item Notes
Item Attachments
M-01
Send
349
512
24
Signature

Item Details

Item No. 0000000010
Product M-01
Volume 0,15 Cubic meter
Base UoM
Delivery Date
Sales Quantity
Net Price
Net Value 0,00 ITL 0,00 USD
Rejection Reason
Campaign
Probability 0,00 %
Entered By SMITH On 08.01.2003

Sales Document

Partner Number 0000002379
Business Partner Becker Berlin
Document No.
Document Type Quotation
Keyword 08.01.03 14:35:46
Net Value 0,00 ITL



Data Edit Tile Set Navigate Favorites Tools Window Help
SAP
Opportunities/Charts
Mobile Sales
Business Partners
Contact Persons
Activities
Sales Documents
Opportunities
Search
Details
Partners
Competitors
Buying Center
Buying Center Graphic
Analysis
Products
Search
Send
Search
Clear
More Criteria
List
Analysis - 1
Analysis - 2

No.

☐ Reference

Priority: very important

Description

Start Date From — To

Transaction Type

Sales Cycle — 9.05.2003

Phase

Status

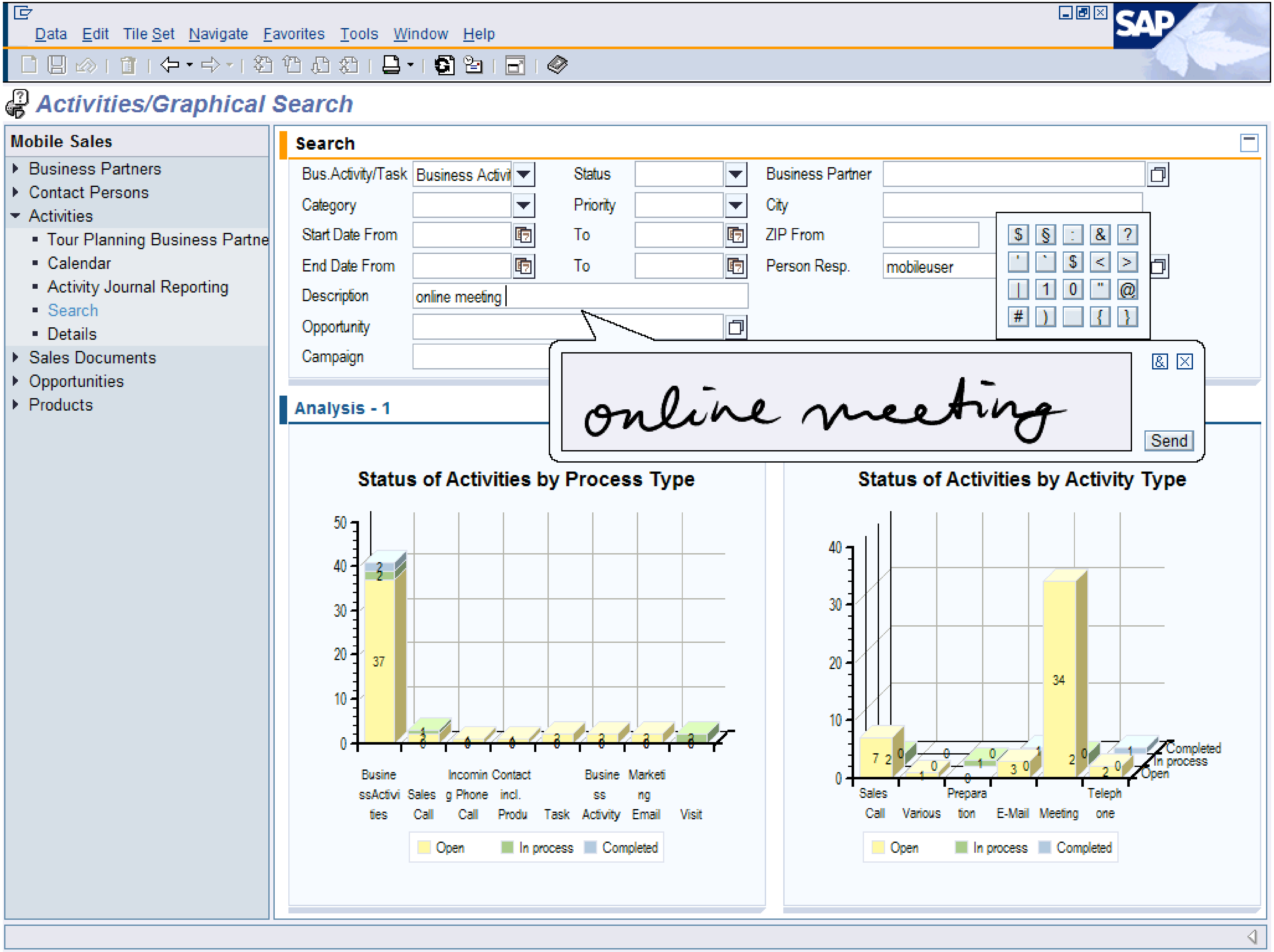
very important

Status of Opportunities by Type

50
40
30
20
10
0
6
0
3
4
4
31
0
1
1
3
27
0
3
26
0
1
8
0
3
0
1
0
0
HH Opportunity
Opportunity
Sales Methodology
SLS Opportunity
SLS Sales Methodolog
SS Test Opp ObjRef
DA-Sales Methodology
z-sh Opportunity
Open
In process
Won
Lost
Stopped by us
Stopped by Customer

Opportunity Breakup by Phases

1.0
0.8
0.6
0.4
0.2
0.0
70
60
50
40
30
20
10
0
65
28
18
4
2
6
1
1
1
0
Number of Opportunities
Net Value
Exchange of information
Identify Opportunity
Qualification
Discussion of solution
Decision making
Final phase
Decision
Quotation
Net Value
Number of Opportunities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Send
Status of Activities by Process Type
50
40
30
20
10
0
2
2
37
1
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0
0
0
0
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0
Busine ssActivi ties
Sales Call
Incomin g Phone Call
Contact incl. Produ
Task
Busine ss Activity
Marketi ng Email
Visit
Open
In process
Completed
Status of Activities by Activity Type
40
30
20
10
0
7
2
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0
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1
34
2
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2
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1
Sales Call
Various
Prepara tion
E-Mail
Meeting
Teleph one
Completed
In process
Open
Open
In process
Completed

Activities/Graphical Search

Bus.Activity/Task: Business Activi

Status:

Business Partner:

Category:

Priority:

City:

Start Date From: To:

ZIP From:

End Date From: To:

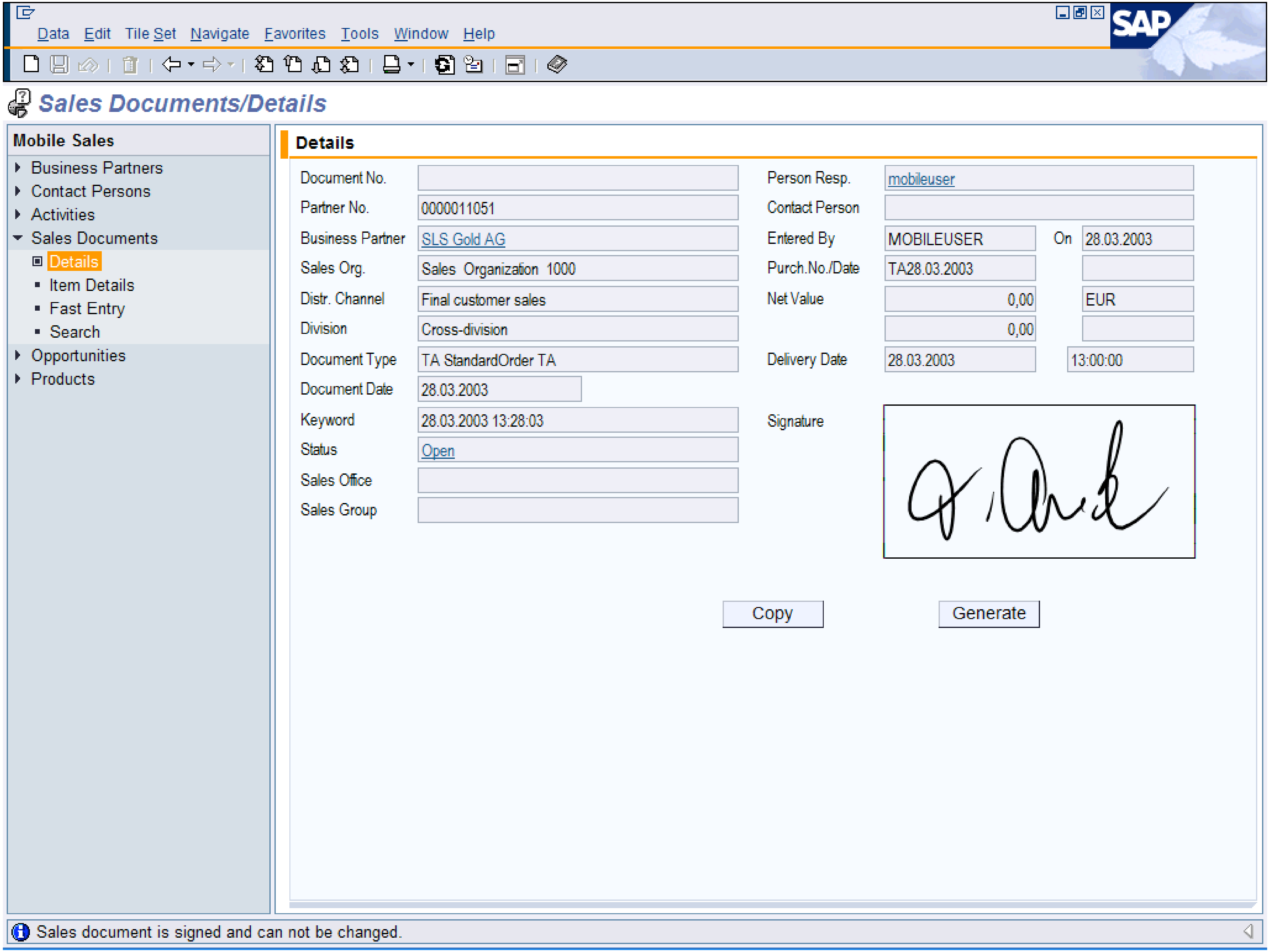
Person Resp.: mobileuser

Description: online meeting

Opportunity:

Campaign:

online meeting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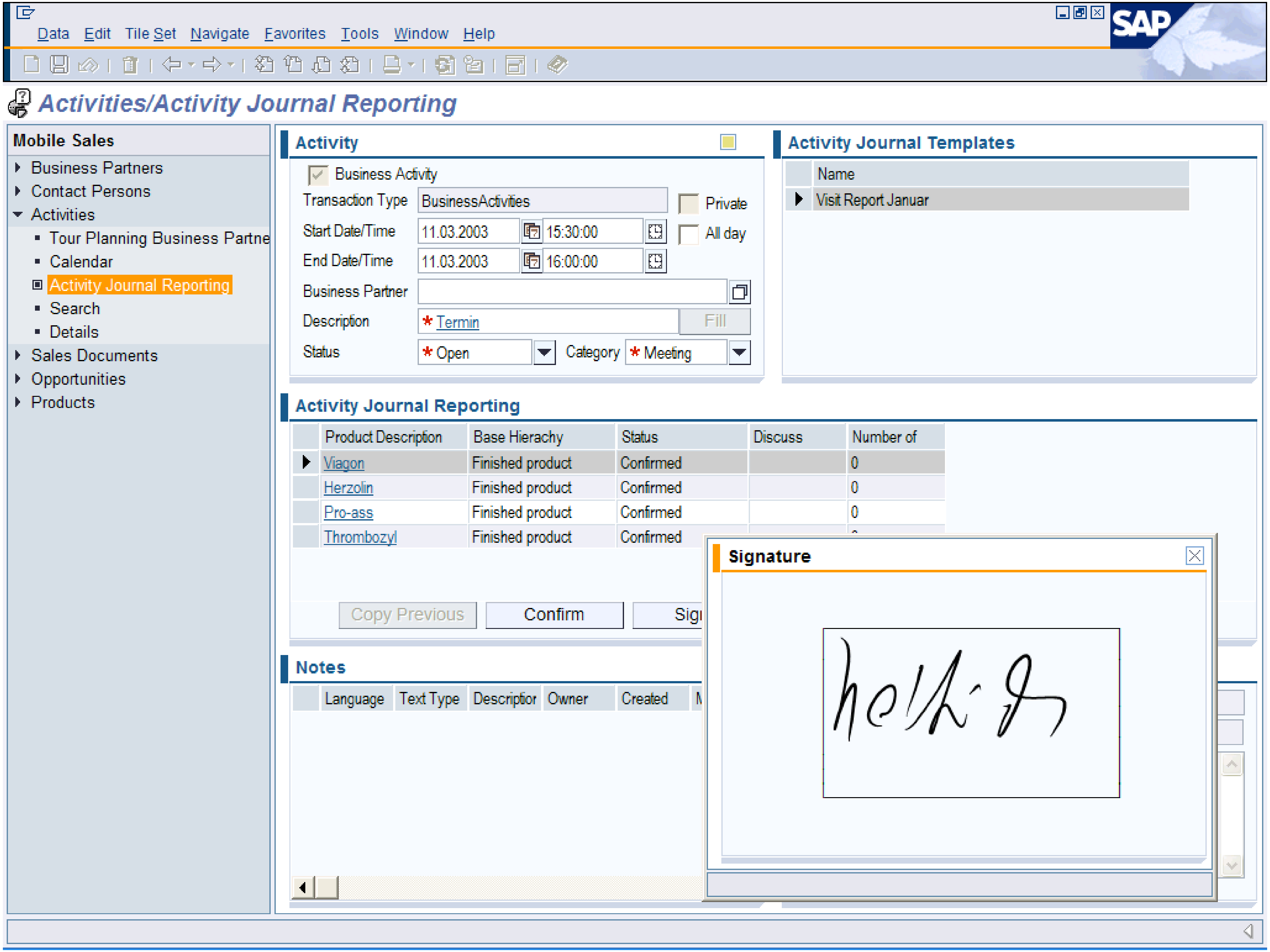
Mobile Sales
Business Partners
Contact Persons
Activities
Sales Documents
Details
Item Details
Fast Entry
Search
Opportunities
Products
Copy
Generate

Sales Documents/Details

Details

Document No.		Person Resp.	mobileuser		
Partner No.	0000011051	Contact Person			
Business Partner	SLS Gold AG	Entered By	MOBILEUSER	On	28.03.2003
Sales Org.	Sales Organization 1000	Purch.No./Date	TA28.03.2003		
Distr. Channel	Final customer sales	Net Value	0,00		EUR
Division	Cross-division		0,00		
Document Type	TA StandardOrder TA	Delivery Date	28.03.2003		13:00:00
Document Date	28.03.2003				
Keyword	28.03.2003 13:28:03	Signature			
Status	Open				
Sales Office					
Sales Group					

Sales document is signed and can not be changed.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SAP
Mobile Sales
Business Partners
Contact Persons
Activities
Tour Planning Business Partne
Calendar
Activity Journal Reporting
Search
Details
Sales Documents
Opportunities
Products
Fill
Copy Previous
Confirm
Sig

Activities/Activity Journal Reporting

Activity

☑ Business Activity

Transaction Type	BusinessActivities	☐ Private	
Start Date/Time	11.03.2003	15:30:00	☐ All day
End Date/Time	11.03.2003	16:00:00	
Business Partner			
Description	* Termin		
Status	* Open	Category	* Meeting

Activity Journal Templates

Name
Visit Report Januar

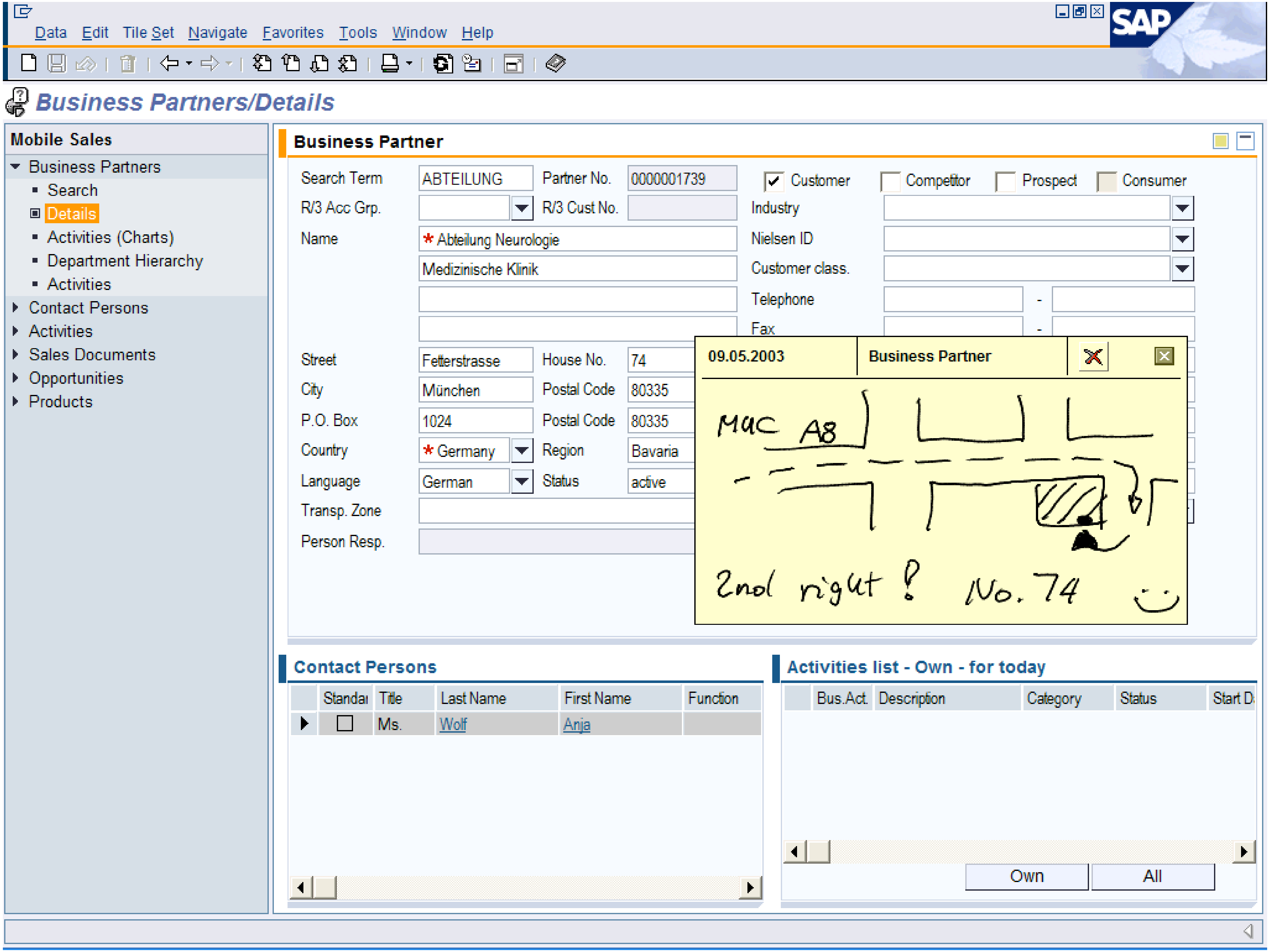
Activity Journal Reporting

Product Description	Base Hierachy	Status	Discuss	Number of
Viagon	Finished product	Confirmed		0
Herzolin	Finished product	Confirmed		0
Pro-ass	Finished product	Confirmed		0
Thrombozyl	Finished product	Confirmed		

Notes

Language	Text Type	Description	Owner	Created	M

Signature


Data Edit Tile Set Navigate Favorites Tools Window Help
SAP
Mobile Sales
Business Partners
Search
Details
Activities (Charts)
Department Hierarchy
Activities
Contact Persons
Activities
Sales Documents
Opportunities
Products
Own
All

Business Partners/Details

Business Partner

Search Term: ABTEILUNG
Partner No.: 0000001739
☑ Customer ☐ Competitor ☐ Prospect ☐ Consumer
R/3 Acc Grp.:
R/3 Cust No.:
Industry:
Name: * Abteilung Neurologie
Medizinische Klinik
Nielsen ID:
Customer class.:
Telephone: -
Fax: -
Street: Fetterstrasse
House No.: 74
City: München
Postal Code: 80335
P.O. Box: 1024
Postal Code: 80335
Country: * Germany
Region: Bavaria
Language: German
Status: active
Transp. Zone:
Person Resp.:

09.05.2003 **Business Partner**

MUC A8

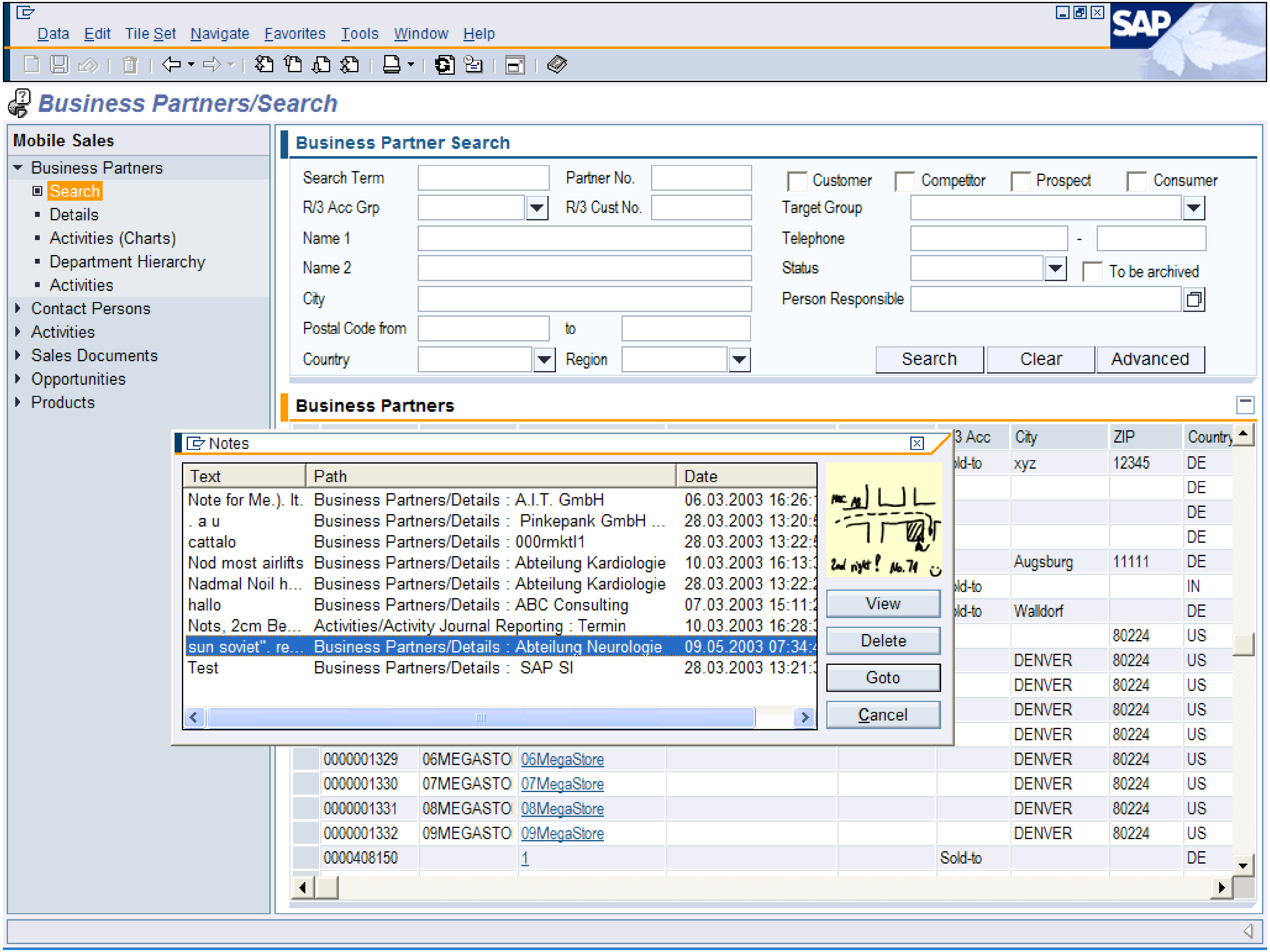
2nd right ! No. 74 :-)

Contact Persons

Standard	Title	Last Name	First Name	Function
☐	Ms.	Wolf	Anja	

Activities list - Own - for today

Bus.Act.	Description	Category	Status	Start D



Business Partners/Search

Mobile Sales

- Business Partners
  - Search
  - Details
  - Activities (Charts)
  - Department Hierarchy
  - Activities
- Contact Persons
- Activities
- Sales Documents
- Opportunities
- Products

Business Partner Search

Search Term
Partner No.
☐ Customer ☐ Competitor ☐ Prospect ☐ Consumer
R/3 Acc Grp
R/3 Cust No.
Target Group
Name 1
Telephone -
Name 2
Status ☐ To be archived
City
Person Responsible
Postal Code from to
Country
Region

Business Partners

						3 Acc	City	ZIP	Country
						ld-to	xyz	12345	DE
									DE
									DE
									DE
							Augsburg	11111	DE
						ld-to			IN
						ld-to	Walldorf		DE
								80224	US
							DENVER	80224	US
							DENVER	80224	US
							DENVER	80224	US
							DENVER	80224	US
	0000001329	06MEGASTO	06MegaStore				DENVER	80224	US
	0000001330	07MEGASTO	07MegaStore				DENVER	80224	US
	0000001331	08MEGASTO	08MegaStore				DENVER	80224	US
	0000001332	09MEGASTO	09MegaStore				DENVER	80224	US
	0000408150		1			Sold-to			DE

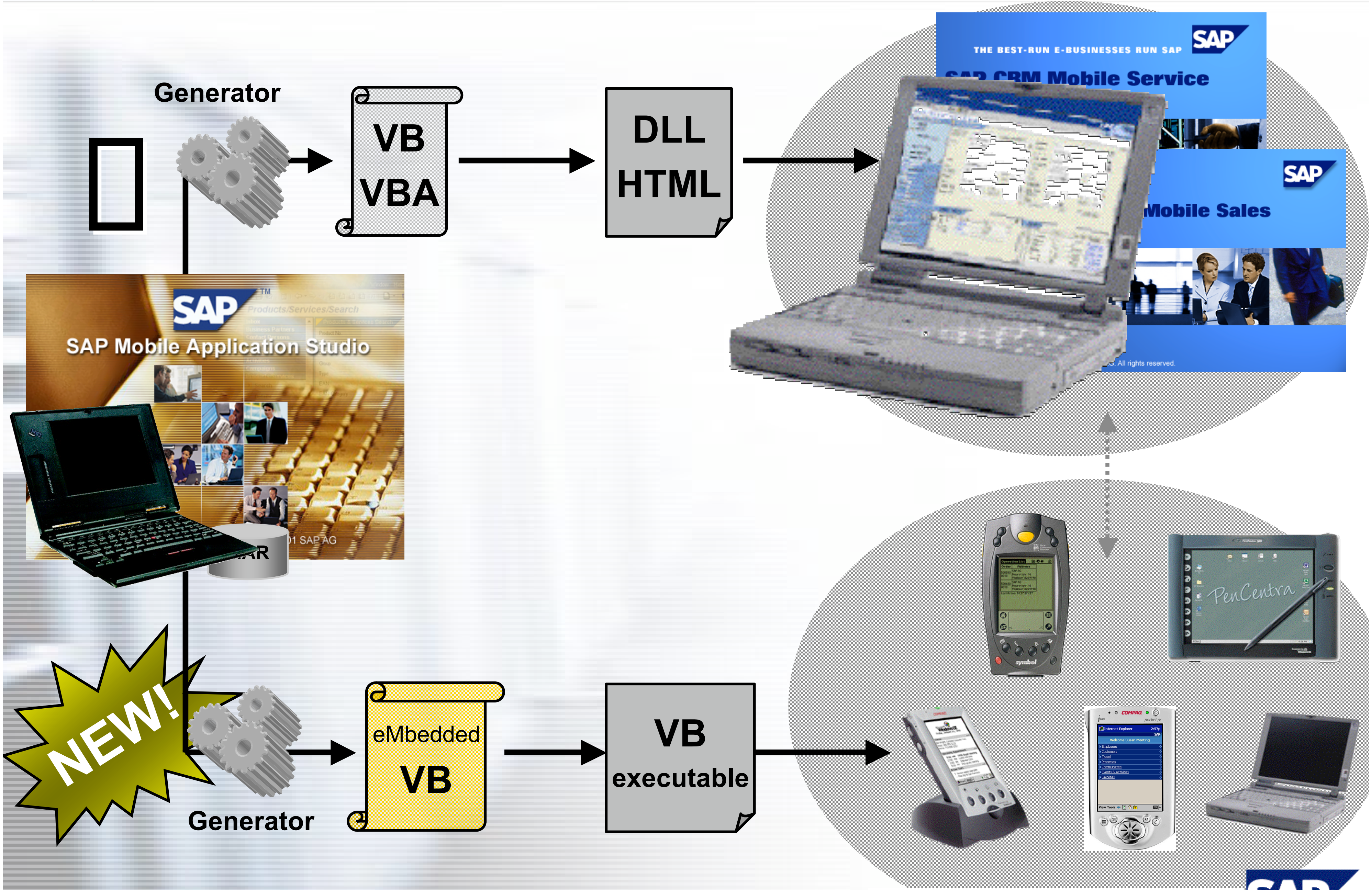
Notes

Text	Path	Date
Note for Me.). It.	Business Partners/Details : A.I.T. GmbH	06.03.2003 16:26:
. a u	Business Partners/Details : Pinkepank GmbH ...	28.03.2003 13:20:
cattalo	Business Partners/Details : 000rmktl1	28.03.2003 13:22:
Nod most airlifts	Business Partners/Details : Abteilung Kardiologie	10.03.2003 16:13:
Nadmal Noil h...	Business Partners/Details : Abteilung Kardiologie	28.03.2003 13:22:
hallo	Business Partners/Details : ABC Consulting	07.03.2003 15:11:
Nots, 2cm Be...	Activities/Activity Journal Reporting : Termin	10.03.2003 16:28:
sun soviet". re...	Business Partners/Details : Abteilung Neurologie	09.05.2003 07:34:
Test	Business Partners/Details : SAP SI	28.03.2003 13:21:

Agenda

- Overview
  - mySAP Mobile Business Vision
  - Online Integration
  - SAP Mobile Infrastructure
  - SAP Mobile Application Studio
  - CRM Middleware Technology
- Examples
  - Offline Laptop
  - Offline Handheld
  - Online Handheld
- Special Features
  - SAP on Tablet PC
  - SAP CRM PDA Companion
- Unification with SAP NetWeaver and Web Dynpro

Using SAP MAS to Create Solutions for PDAs



Generator

VB
VBA

DLL
HTML

SAP Mobile Application Studio

NEW!

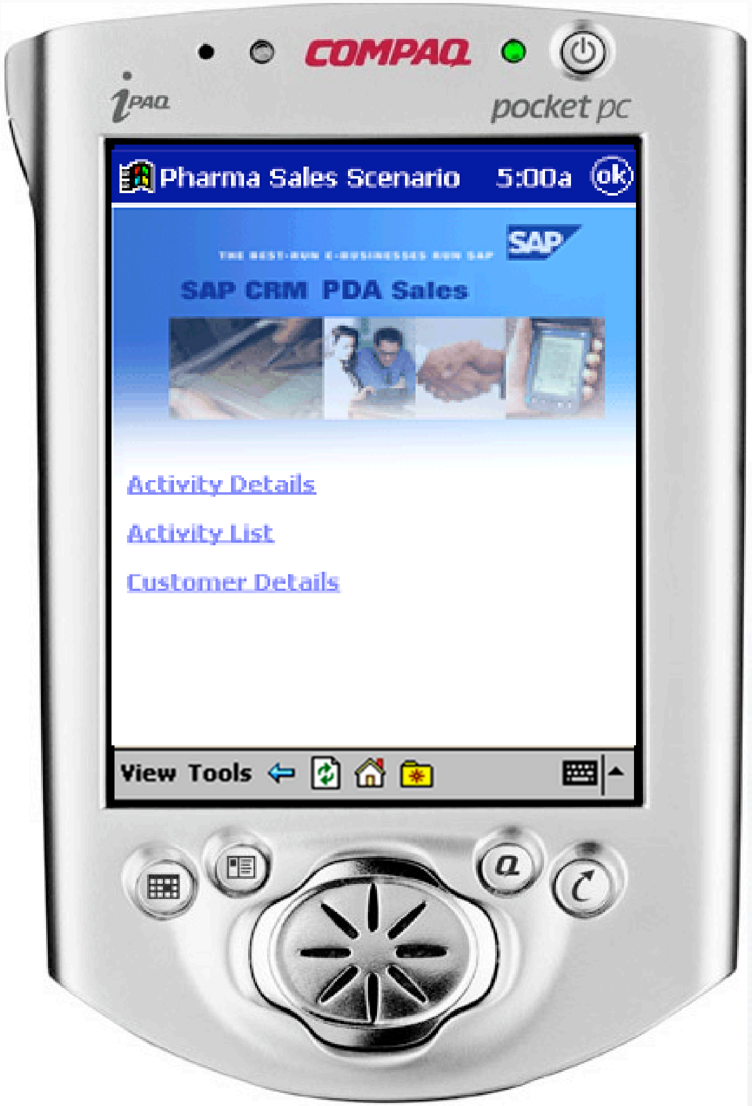
Generator

eMbedded
VB

VB
executable

THE BEST-RUN E-BUSINESSES RUN SAP
SAP
SAP CRM Mobile Service
SAP
Mobile Sales
All rights reserved.
SAP
Products/Services/Search
01 SAP AG
PenCentra
symbol
COMPAQ

PDA Solution Generated by SAP MAS



COMPAQ
iPAQ
pocket pc

Pharma Sales Scenario 5:00a

THE BEST-RUN E-BUSINESSES RUN SAP

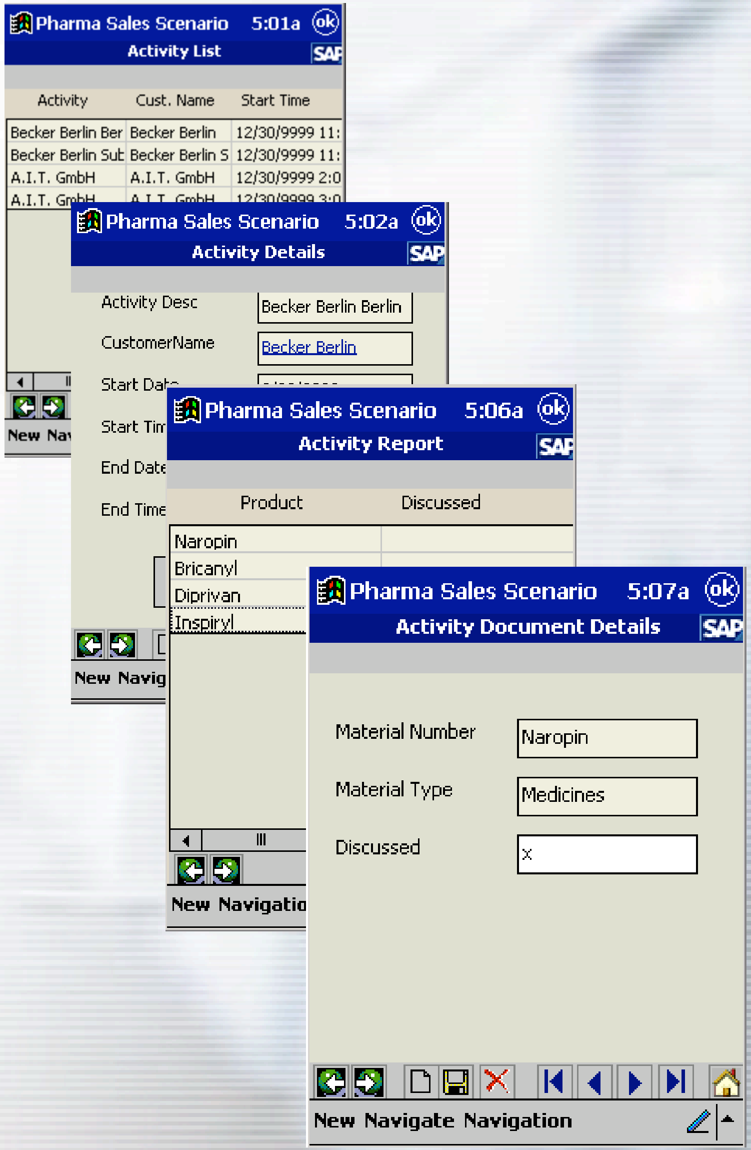
SAP CRM PDA Sales

Activity Details

Activity List

Customer Details

View Tools



Pharma Sales Scenario 5:01a

Activity List

Activity	Cust. Name	Start Time
Becker Berlin Ber	Becker Berlin	12/30/9999 11:
Becker Berlin Sut	Becker Berlin S	12/30/9999 11:
A.I.T. GmbH	A.I.T. GmbH	12/30/9999 2:0
A.I.T. GmbH	A.I.T. GmbH	12/30/9999 3:0

Pharma Sales Scenario 5:02a

Activity Details

Activity Desc: Becker Berlin Berlin

CustomerName: Becker Berlin

Start Date

Start Tim

End Date

End Time

Pharma Sales Scenario 5:06a

Activity Report

Product	Discussed
Naropin	
Bricanyl	
Diprivan	
Inspiryl	

Pharma Sales Scenario 5:07a

Activity Document Details

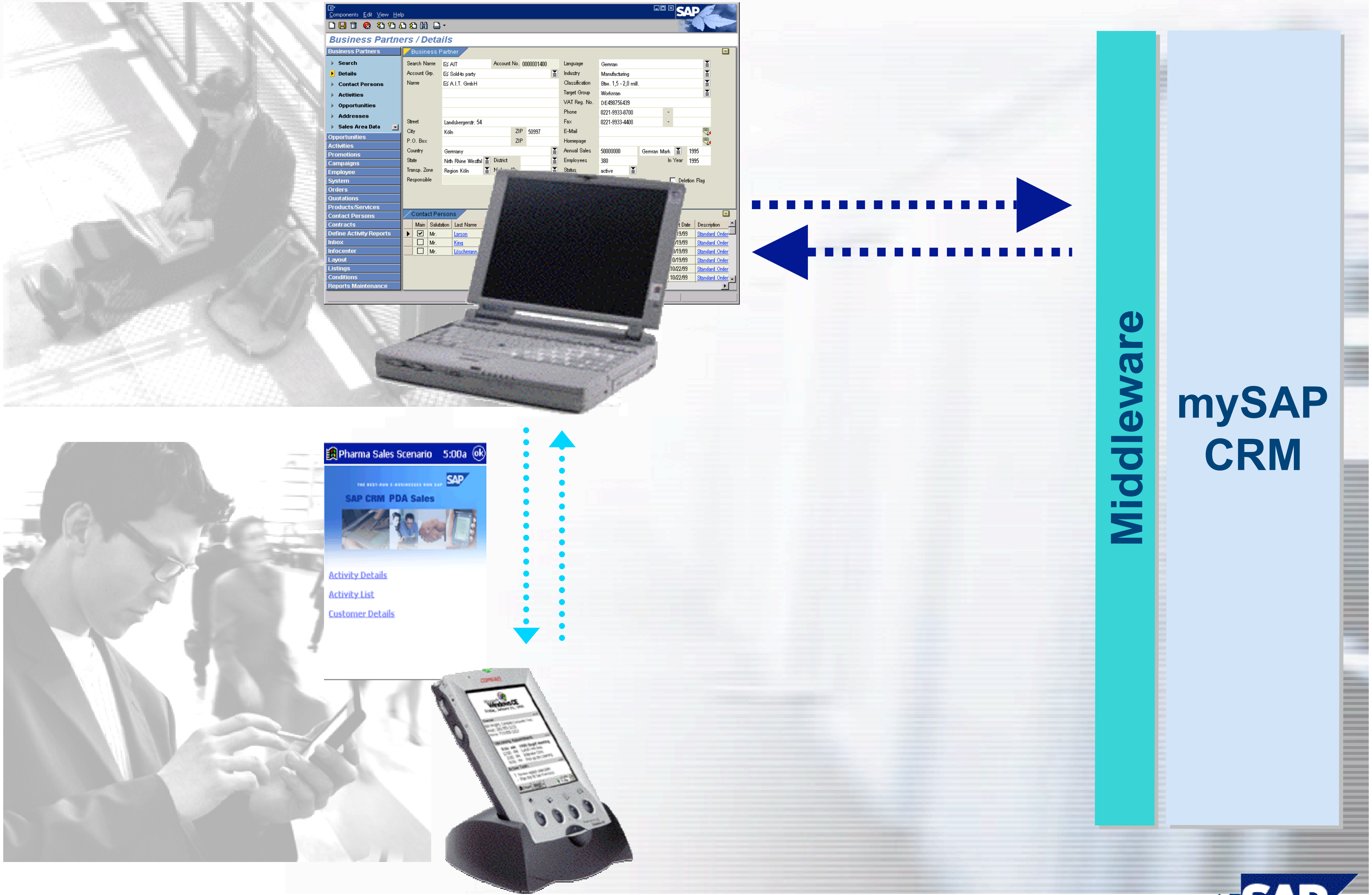
Material Number: Naropin

Material Type: Medicines

Discussed: x

New Nav
New Navig
New Navigatio
New Navigate Navigation

Exchange of Business Data with the PDA


Components Edit View Help
Business Partners / Details
Business Partners
Search
Details
Contact Persons
Activities
Opportunities
Addresses
Sales Area Data
Opportunities
Activities
Promotions
Campaigns
Employee
System
Orders
Quotations
Products/Services
Contact Persons
Contracts
Define Activity Reports
Inbox
Infocenter
Layout
Listings
Conditions
Reports Maintenance
Business Partner
Contact Persons
Pharma Sales Scenario 5:00a ok
SAP CRM PDA Sales
Activity Details
Activity List
Customer Details

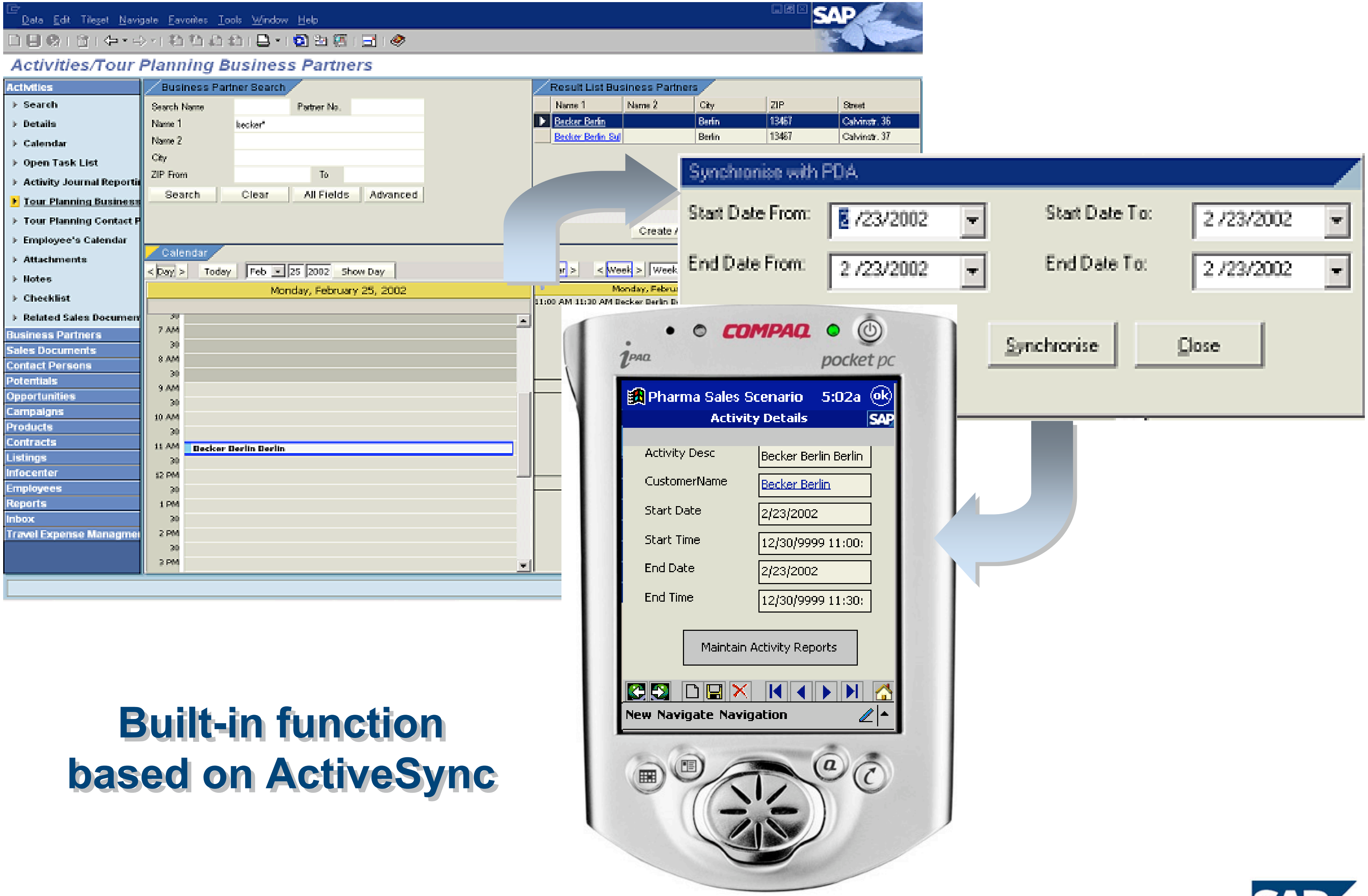
Search Name: ☑ AIT
Account No.: 0000001400
Account Grp.: ☑ Sold-to party
Name: ☑ A.I.T. GmbH
Street: Landsbergerstr. 54
City: Köln ZIP: 50997
P.O. Box: ZIP:
Country: Germany
State: Nrth Rhine Westfal District:
Transp. Zone: Region Köln
Responsible:
Language: German
Industry: Manufacturing
Classification: Btw. 1,5 - 2,0 mill.
Target Group: Workman
VAT Reg. No.: DE498756439
Phone: 0221-9933-8700 -
Fax: 0221-9933-4400 -
E-Mail:
Homepage:
Annual Sales: 50000000 German Mark 1995
Employees: 380 In Year 1995
Status: active
☐ Deletion Flag

Main	Salutation	Last Name	t Date	Description
☑	Mr.	Larson	19/99	Standard Order
☐	Mr.	King	/19/99	Standard Order
☐	Mr.	Löschmann	0/19/99	Standard Order
			0/19/99	Standard Order
			10/22/99	Standard Order
			10/22/99	Standard Order

Middleware

mySAP CRM

Business Scenario Using PDA Sales (1/2)


Data Edit Tileset Navigate Favorites Tools Window Help
Activities/Tour Planning Business Partners
Activities
Search
Details
Calendar
Open Task List
Activity Journal Reporti
Tour Planning Business
Tour Planning Contact P
Employee's Calendar
Attachments
Notes
Checklist
Related Sales Documen
Business Partners
Sales Documents
Contact Persons
Potentials
Opportunities
Campaigns
Products
Contracts
Listings
Infocenter
Employees
Reports
Inbox
Travel Expense Managme
Business Partner Search
Search
Clear
All Fields
Advanced
Calendar
Day
Today
Show Day
Week
Create
Synchronise
Close
COMPAQ
iPAQ
pocket pc
Maintain Activity Reports
New Navigate Navigation

Search Name | Partner No.
Name 1 becker*
Name 2
City
ZIP From | To

Result List Business Partners

	Name 1	Name 2	City	ZIP	Street
▶	Becker Berlin		Berlin	13467	Calvinstr. 36
	Becker Berlin Sul		Berlin	13467	Calvinstr. 37

Feb 25 2002

Monday, February 25, 2002

11 AM Becker Berlin Berlin

11:00 AM 11:30 AM Becker Berlin B

Synchonise with PDA

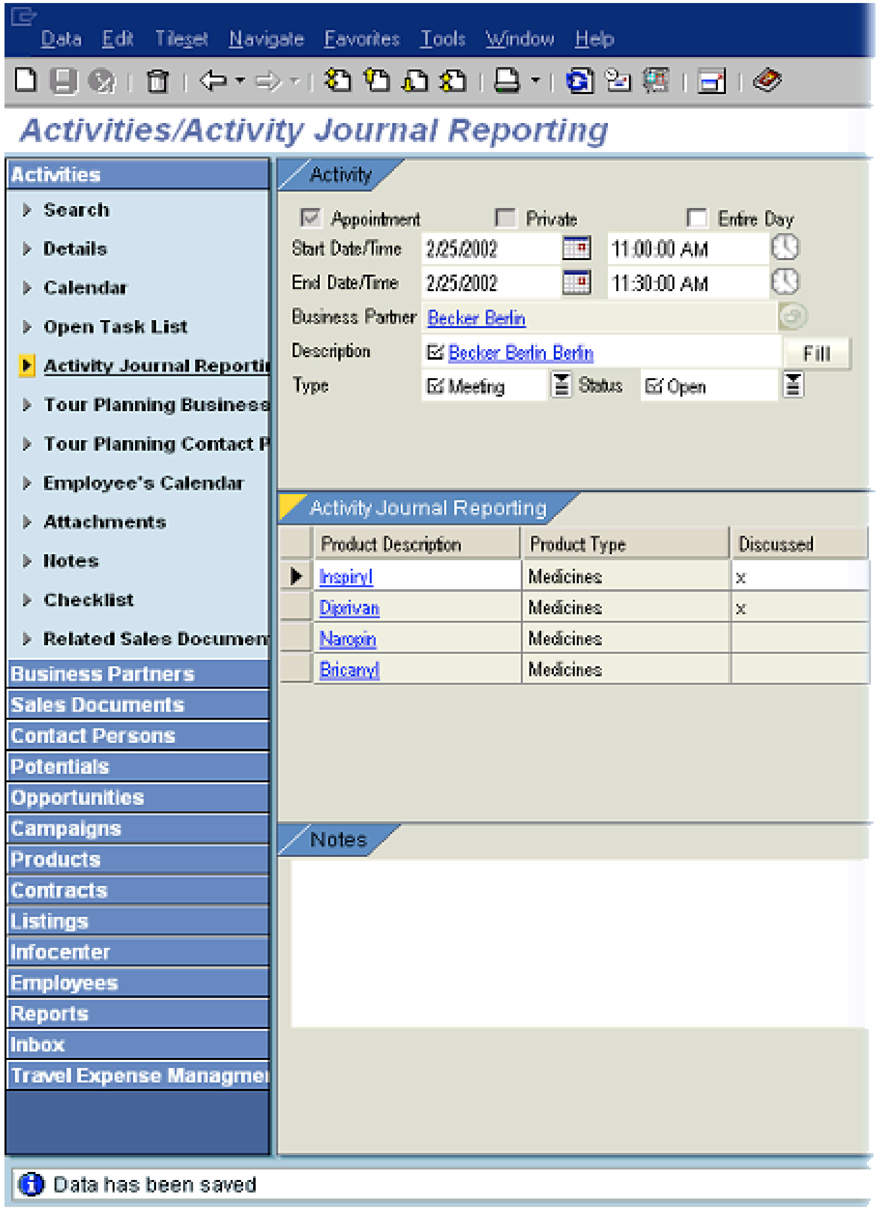
Start Date From: 2 /23/2002
Start Date To: 2 /23/2002
End Date From: 2 /23/2002
End Date To: 2 /23/2002

Pharma Sales Scenario 5:02a
Activity Details

Activity Desc: Becker Berlin Berlin
CustomerName: Becker Berlin
Start Date: 2/23/2002
Start Time: 12/30/9999 11:00:
End Date: 2/23/2002
End Time: 12/30/9999 11:30:

Built-in function based on ActiveSync

Synchronizes Back to Mobile Sales (2/2)


Data
Edit
Tileset
Navigate
Favorites
Tools
Window
Help
Activities
Search
Details
Calendar
Open Task List
Activity Journal Reporti
Tour Planning Business
Tour Planning Contact P
Employee's Calendar
Attachments
Notes
Checklist
Related Sales Documen
Business Partners
Sales Documents
Contact Persons
Potentials
Opportunities
Campaigns
Products
Contracts
Listings
Infocenter
Employees
Reports
Inbox
Travel Expense Managme
Fill

Activities/Activity Journal Reporting

Activity

☑ Appointment ☐ Private ☐ Entire Day

Start Date/Time 2/25/2002 11:00:00 AM

End Date/Time 2/25/2002 11:30:00 AM

Business Partner Becker Berlin

Description Becker Berlin Berlin

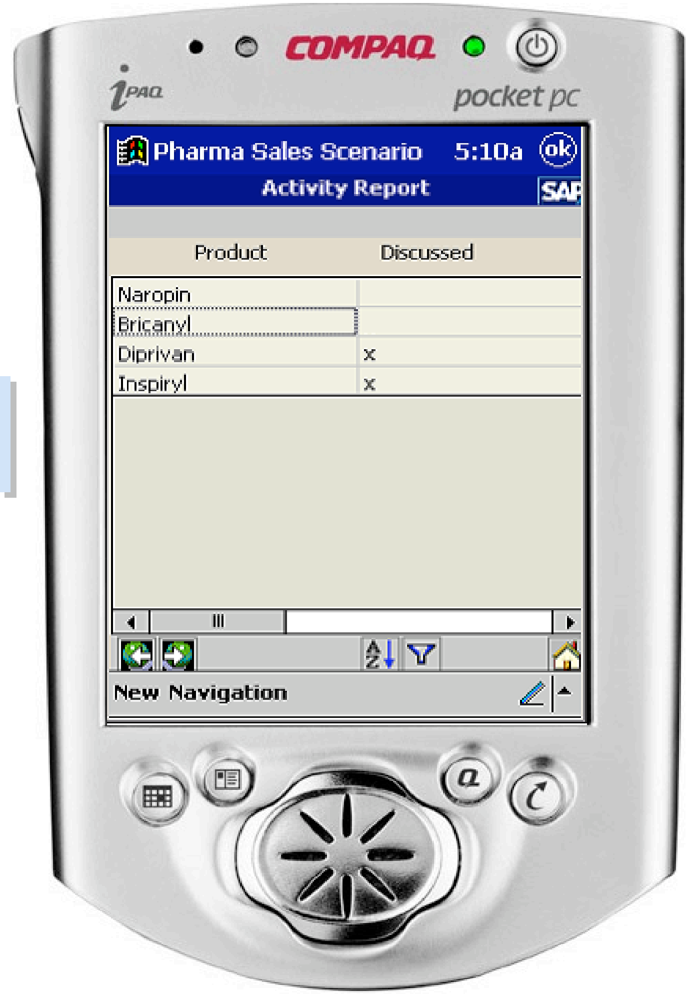
Type Meeting Status Open

Activity Journal Reporting

Product Description	Product Type	Discussed
Inspiryl	Medicines	x
Diprivan	Medicines	x
Naropin	Medicines	
Bricanyl	Medicines	

Notes

Data has been saved


COMPAQ
iPAQ
pocket pc
SAP

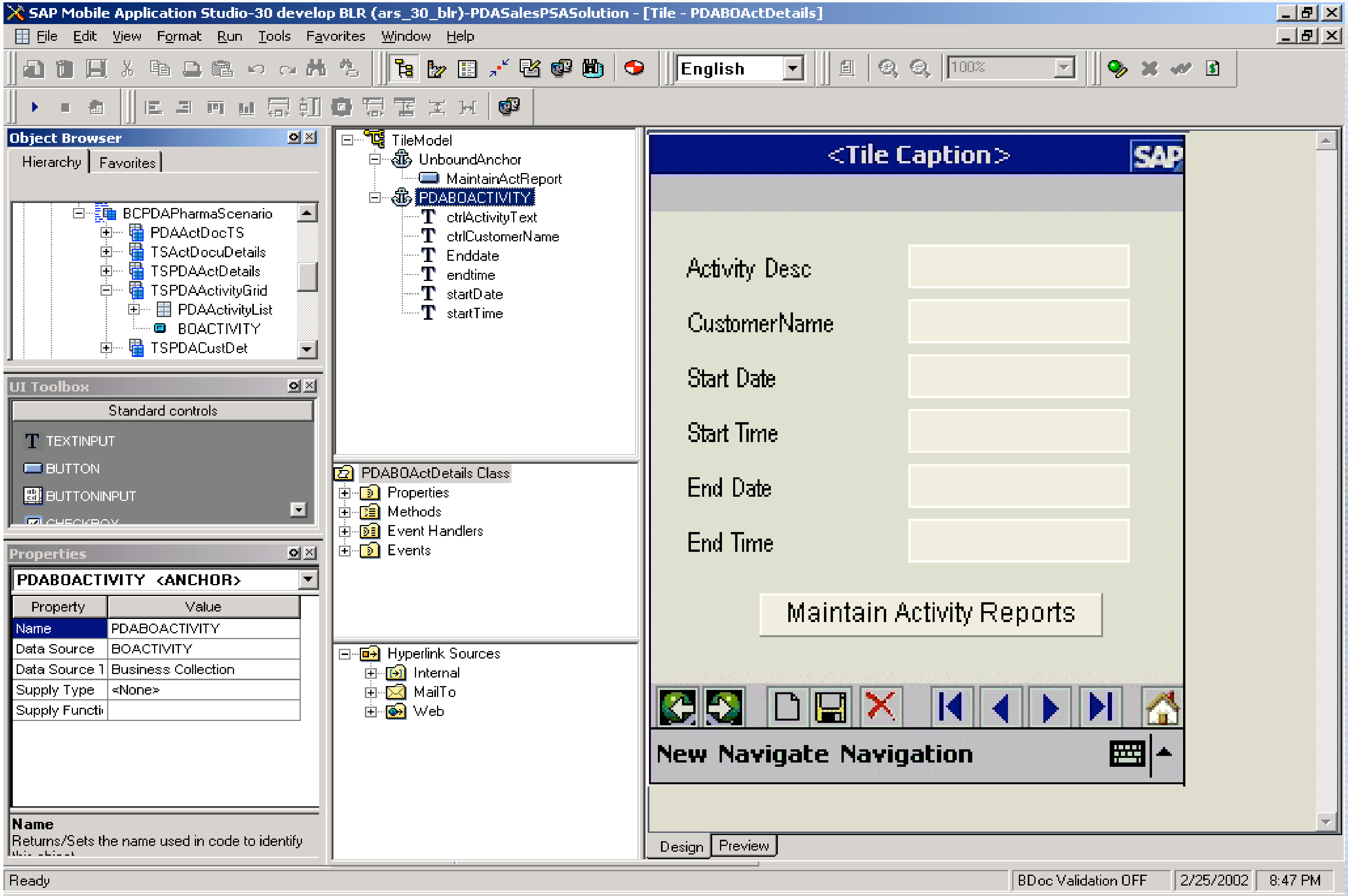
Pharma Sales Scenario 5:10a ok

Activity Report

Product	Discussed
Naropin	
Bricanyl	
Diprivan	x
Inspiryl	x

New Navigation

Modeling PDA Sales with the Original SAP MAS



SAP Mobile Application Studio-30 develop BLR (ars_30_blr)-PDASalesPSASolution - [Tile - PDABOActDetails]

Properties

PDABOACTIVITY <ANCHOR>

Property	Value
Name	PDABOACTIVITY
Data Source	BOACTIVITY
Data Source 1	Business Collection
Supply Type	<None>
Supply Functi	

Name

Returns/Sets the name used in code to identify

Ready | BDoc Validation OFF | 2/25/2002 | 8:47 PM

File
Edit
View
Format
Run
Tools
Favorites
Window
Help
English
100%
Object Browser
Hierarchy
Favorites
BCPDAPharmaScenario
PDAActDocTS
TSActDocuDetails
TSPDAActDetails
TSPDAActivityGrid
PDAActivityList
BOACTIVITY
TSPDACustDet
UI Toolbox
Standard controls
TEXTINPUT
BUTTON
BUTTONINPUT
CHECKBOX
TileModel
UnboundAnchor
MaintainActReport
PDABOACTIVITY
ctrlActivityText
ctrlCustomerName
Enddate
endtime
startDate
startTime
PDABOActDetails Class
Properties
Methods
Event Handlers
Events
Hyperlink Sources
Internal
MailTo
Web
<Tile Caption>
SAP
Activity Desc
CustomerName
Start Date
Start Time
End Date
End Time
Maintain Activity Reports
New Navigate Navigation
Design
Preview

Demo: SAP CRM PDA Companion

SAP CRM PDA Companion

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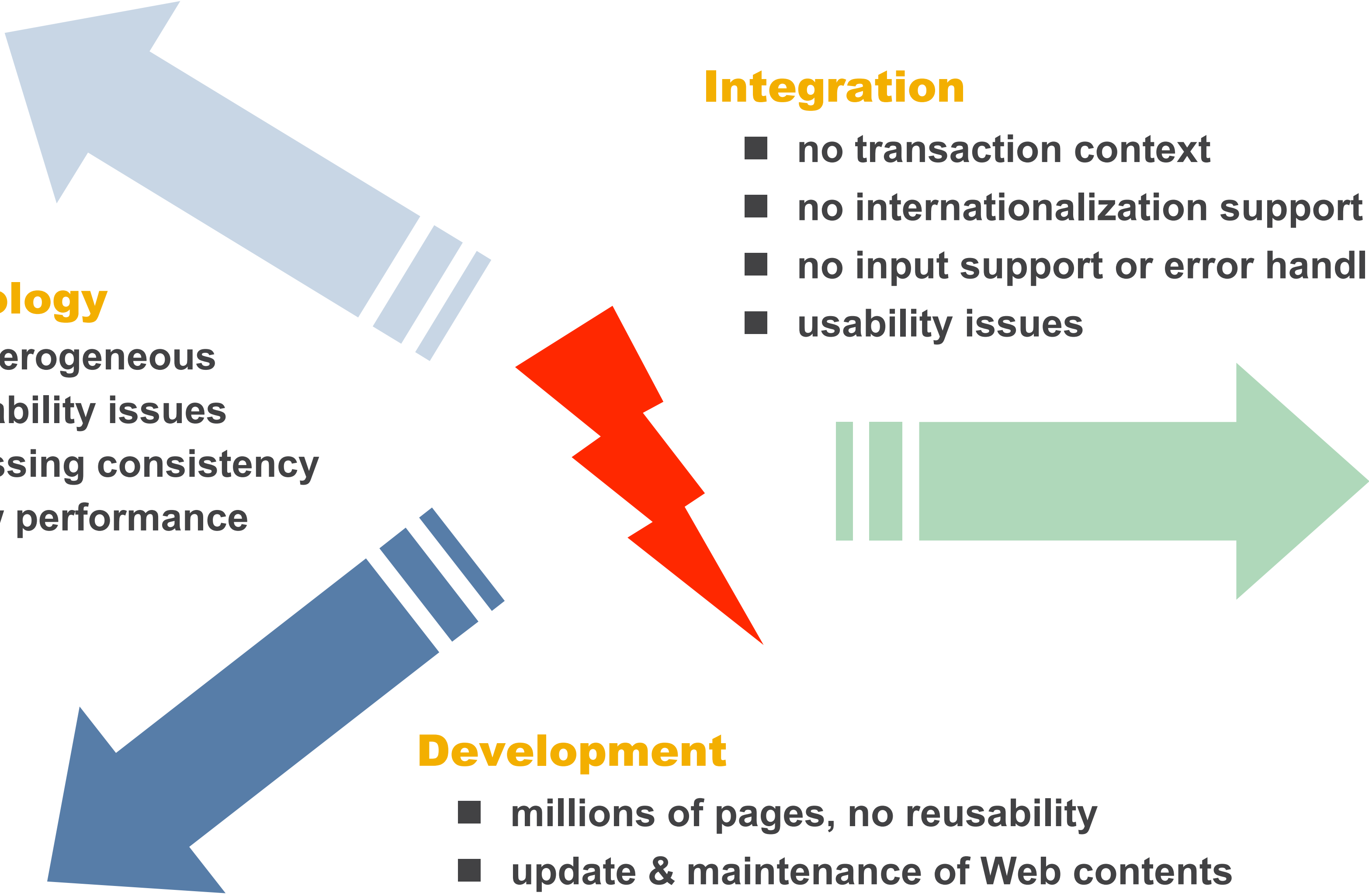
Challenges of Current Web Development



Integration

- no transaction context
- no internationalization support
- no input support or error handling
- usability issues

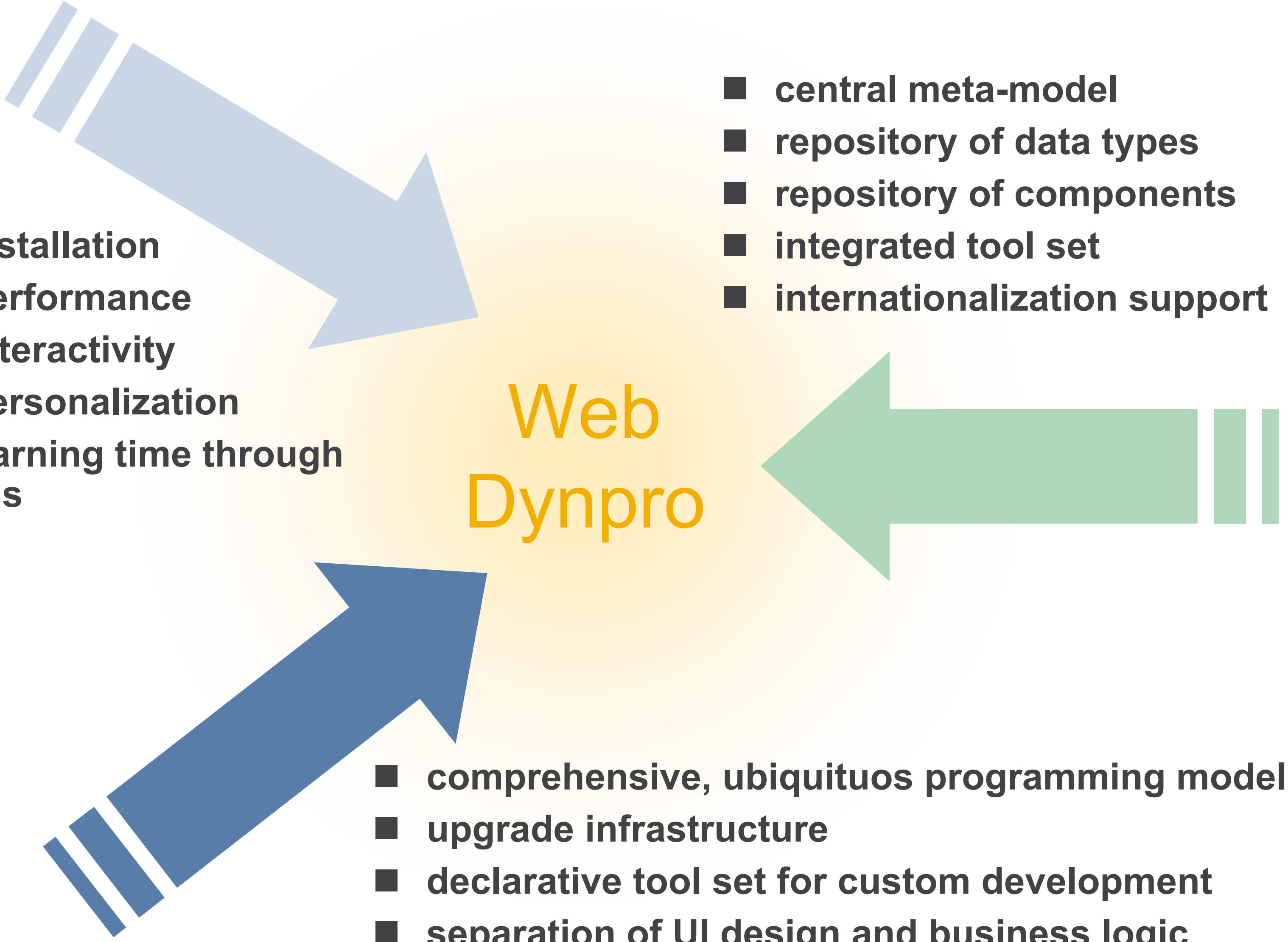
Client technology

- heterogeneous
- usability issues
- missing consistency
- low performance

Development

- millions of pages, no reusability
- update & maintenance of Web contents
- layout wins over functionality
- Web designers vs. Web programmers

Taking Context and Reliability to Web Development



Web Dynpro

- zero installation
- high performance
- high interactivity
- user personalization
- less learning time through patterns

- central meta-model
- repository of data types
- repository of components
- integrated tool set
- internationalization support

- comprehensive, ubiquituos programming model
- upgrade infrastructure
- declarative tool set for custom development
- separation of UI design and business logic
- WYSIWYG tools

Web Dynpro as a Unification Platform

Deliver an Enterprise Quality Web Development Environment

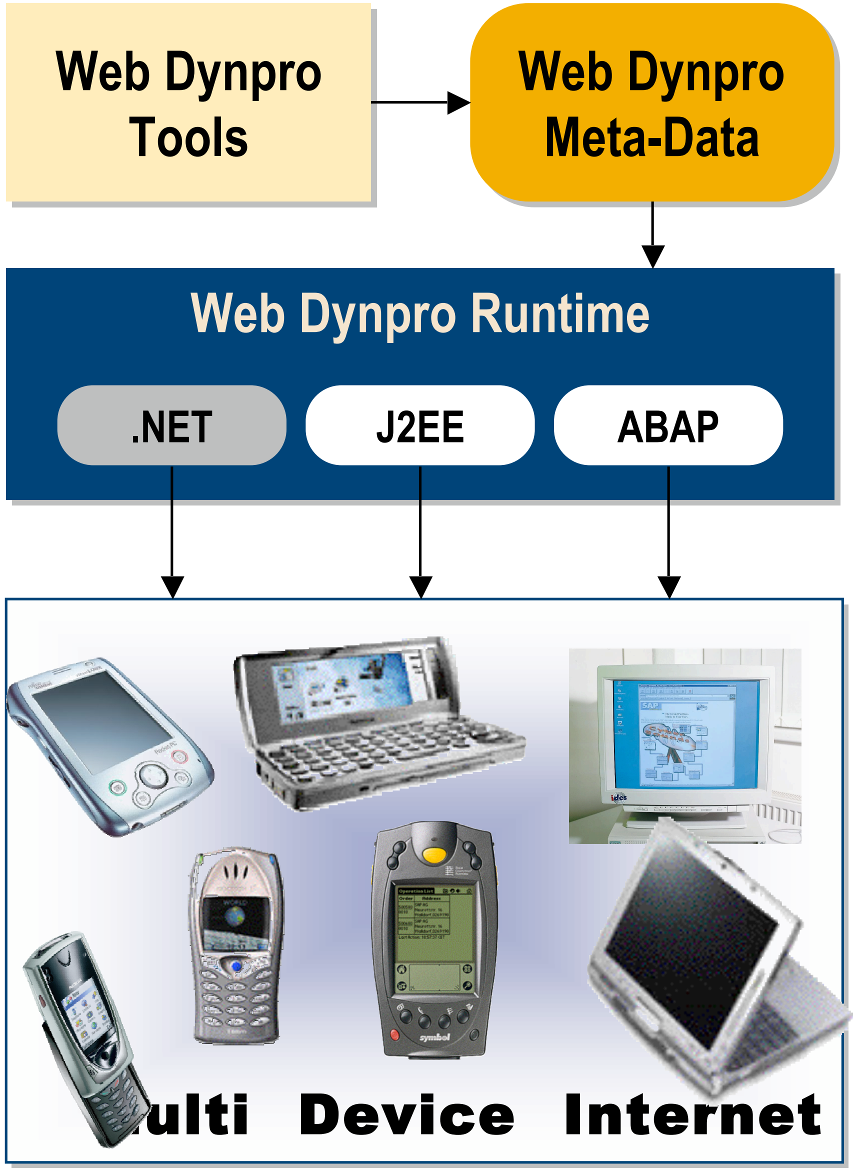
- minimize coding, maximize design
- support reuse of components
- support web services and data-binding
- separate layout and programming logic

Achieve Independence…

- from platform
- from UI technology

Improve User Experience through a "High Fidelity Web UI"

- browser based frontend, zero footprint
- flicker-free screen, minimal refreshs
- client-side dynamics
- minimal response times
- personalization of the user interface
- 508 accessibility compliance



Web Dynpro Tools

Web Dynpro Meta-Data

Web Dynpro Runtime

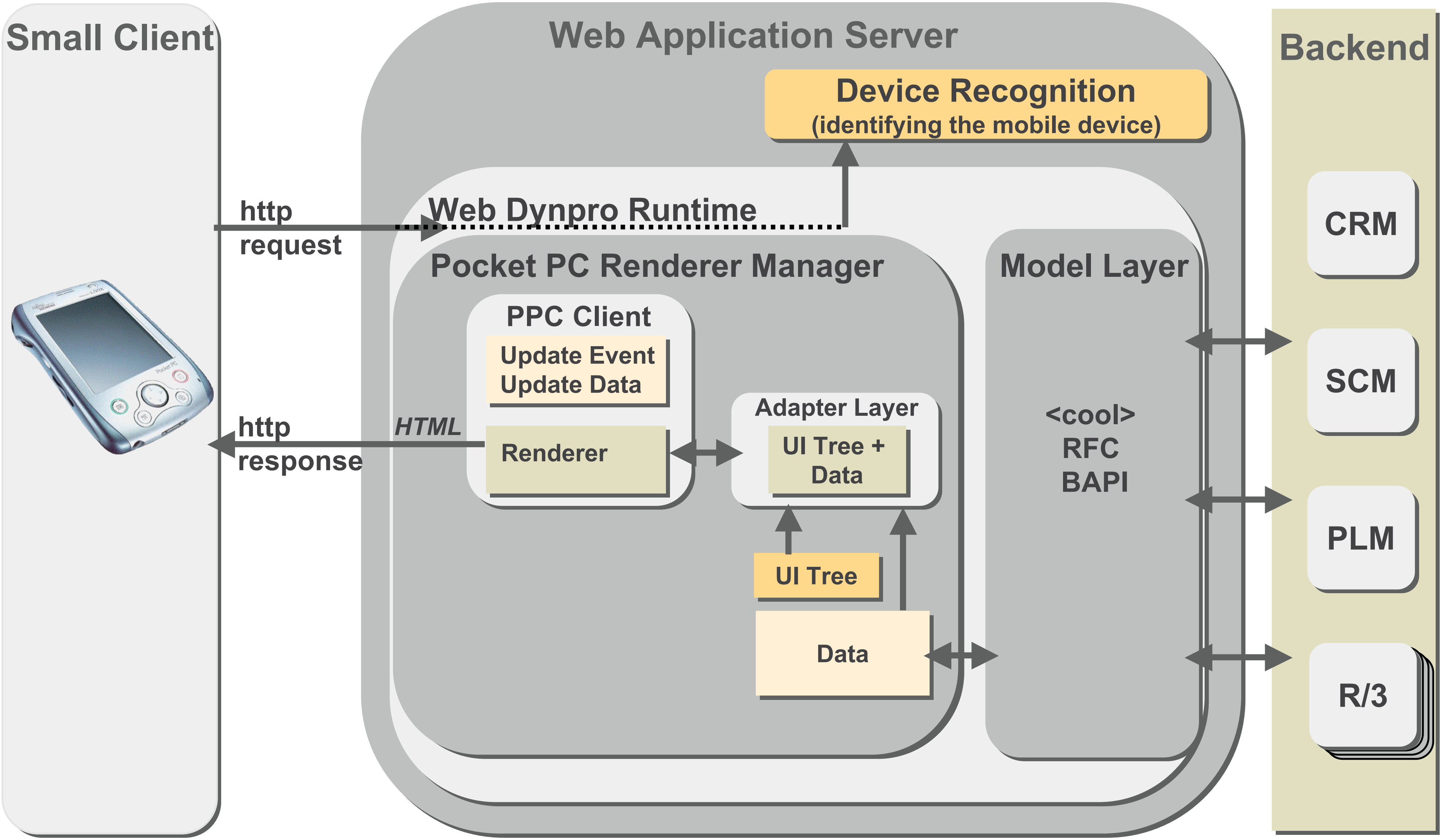
.NET

J2EE

ABAP

ulti Device Internet

Mobile Web Dynpro Runtime Architecture


Small Client
http
request
http
response
HTML
Web Application Server
Device Recognition
(identifying the mobile device)
Web Dynpro Runtime
Pocket PC Renderer Manager
PPC Client
Update Event
Update Data
Renderer
Adapter Layer
UI Tree +
Data
UI Tree
Data
Model Layer
<cool>
RFC
BAPI
Backend
CRM
SCM
PLM
R/3

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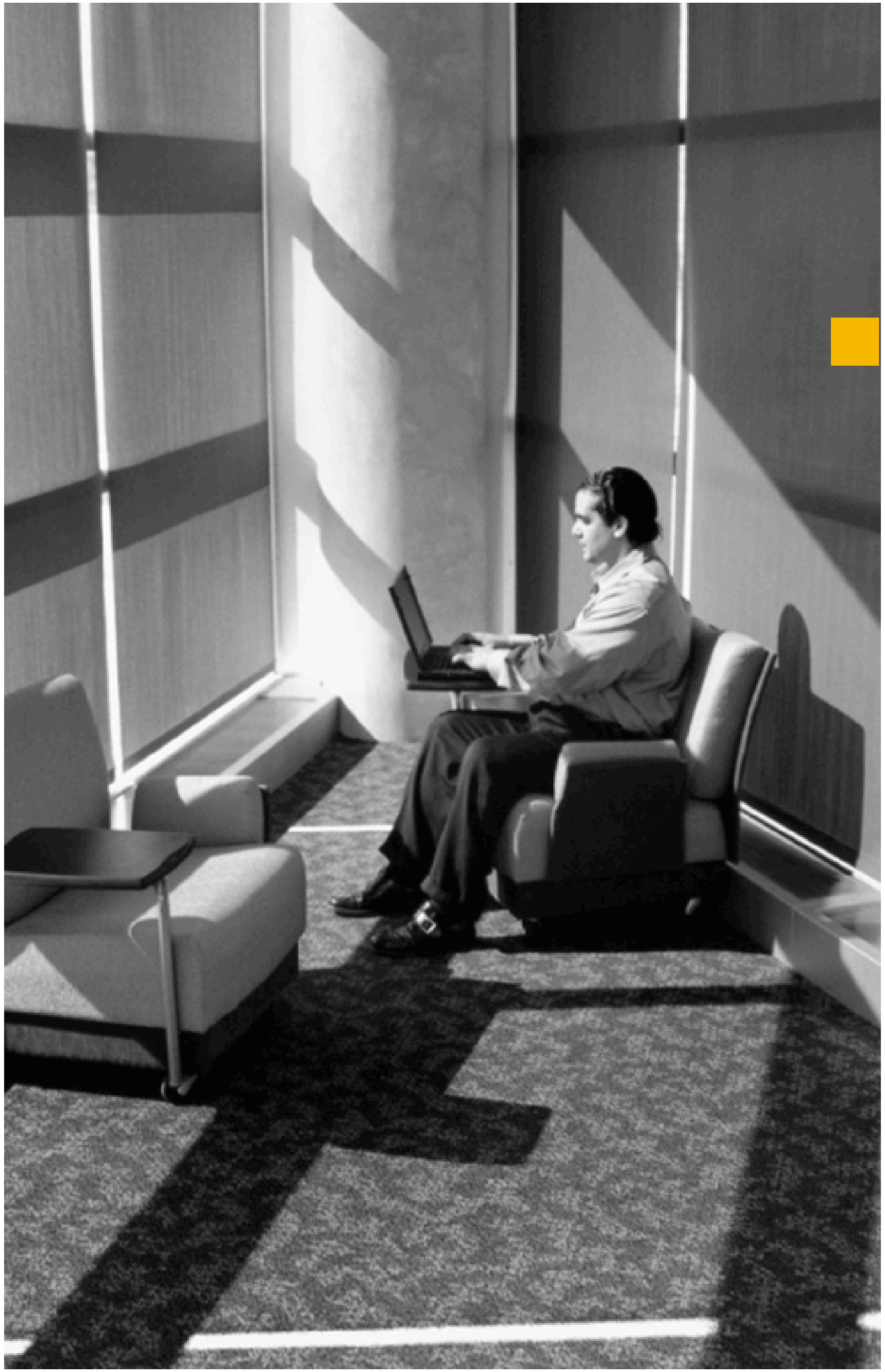

Dr. Thomas Arend

Product Manager, Mobile Technology

Thomas.Arend@SAP.com

Information on the Web

http://www.sap.com

Q & A

Lecture

SAP Mobile Technologies

Hasso-Plattner-Institute at University of Potsdam, June-28, 2003

Dr. Thomas Arend
Product Manager
Mobile Technology
SAP AG

THE BEST-RUN BUSINESSES RUN SAP