In this reading sample, you’ll find an overview of SAP Customer Relationship Management, which is SAP’s popular solution to gaining, servicing, and retaining customers. In the second chapter, you’ll find information on SAP’s approach to mobility, and find examples of mobile apps and tools that are available.

Preface

“SAP Customer Relationship Management”

“SAP Mobility”

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Discover SAP

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Preface

In this third, updated edition, we have tried to address what we felt was a gap in the available information about SAP by providing an easy to understand overview of SAP, its products, and its approach to enterprise computing. Our objective is to provide a simple and straightforward look at SAP and its products. We make every effort to explain SAP product features, not in technical jargon or by using marketing brochure product features, but by simply describing all of the benefits and by being specific about what these products can do for your business.

The following sections outline who can benefit from this book, how we structured the book, and what topics are covered.

Who Will Benefit from This Book?

If you’re a business decision maker who is considering implementing SAP products in your business, this book will help you become familiar with the terminology, concepts, products, and technology you will encounter.

If you’re a manager who is dealing with new SAP products in your group, and you want to help your people succeed and become more productive, this book gives you the information you need to appreciate how all of the various features and tools in SAP products might make your people more efficient.

If you’re an IT person who has never worked with SAP technologies and products, you’ll get a quick, solid grounding in both, and be able to make the connection between how those technologies and products solve business problems.

If you’re a consultant who is considering entering the world of supporting SAP products, this book can serve as a type of tutorial to help you better understand the SAP universe, including SAP’s extended partner community and how it works to support customers.
What You'll Discover

Our goal in writing this book was to introduce and explain enterprise computing concepts and terms in simple language, SAP as a company and how it approaches solving real-world business problems, the technology behind SAP products, and what you can expect during an SAP implementation.

We also provide an overview of each of SAP’s major products with actual case studies so you can see how each product works in a real business.

We were careful to define the most current business and enterprise computing terms throughout the book so anyone from an IT specialist unfamiliar with business terms to a business person unfamiliar with technology terms can understand the information we provide. We also made every attempt to give you examples and case studies to make SAP and its products relevant to you, your business, and your industry.

Navigational Tools for This Book

Throughout the book, you will find several elements that will help you access useful information. We have used the following icons to help you navigate:

Tip: When you see this icon, you know that you’ll find useful information as well as special tips and tricks that can make your work easier.

Note: Notes call out information about related ideas, other resources to explore, or things you should keep in mind.

Technical Information: This icon highlights technical details and issues related to SAP products that will help you in making decisions.

Newsflash: When you see this icon, you know you will be given some news, latest developments, or important information about SAP.

Example: Here you’ll encounter real-life scenarios and exercises.

Part I: SAP and Enterprise Computing: The Basics

This part of the book looks at SAP’s history, evolution, and its current direction. We also discuss topics and trends that will impact future developments.

Chapter 1

SAP: The Company is where we look at the history of SAP; that is, how it has grown and developed products to address various business processes over the years. We provide an overview of SAP today, including its different enterprise computing solutions.

Chapter 2

The SAP Approach to Enterprise Software is where we define enterprise computing and explain how SAP approaches finding and providing solutions to enterprises of all sizes and types.

Chapter 3

Business Suite 7 Overview explains how the modular approach to enhancing technical functionality can help companies reduce the costs and time associated with software implementations.

Part II: SAP Products

Each of the chapters in this part covers one or more SAP software products, explaining what the product is, how it fits in an enterprise
setting, and specific product features and tools, as well as offering a case study with a real-world example of the product in place. Here are the products covered in these chapters:

Chapter 4
SAP ERP Financials addresses all of the financial functions of a business, which most readers will find very valuable. SAP ERP Financials is one of the most often implemented applications of SAP.

Chapter 5
SAP ERP Operations deals with product development and manufacturing, procurement and logistics, and sales and service products.

Chapter 6
SAP ERP Human Capital Management covers solutions related to human resources, again a very important part of the SAP landscape.

Chapter 7
SuccessFactors covers one of SAP’s companies, who offers a cloud-based HR solution.

Chapter 8
SAP Customer Relationship Management helps you obtain, service, and retain your customers.

Chapter 9
SAP Supplier Relationship Management deals with the sourcing, procurement, and supplier enablement features.

Chapter 10
Ariba and Fieldglass discusses the cloud solutions for procurement.

Chapter 11
SAP Product Lifecycle Management covers the pieces of a product’s life, from inception, to development, and through to obsolescence.

Chapter 12
SAP Supply Chain Management introduces features for keeping inventory moving in and out of your company in a way that can have a big impact on your bottom line.

Chapter 13
SAP’s Strategy for Small to Midsize Enterprises deals with SAP’s complete portfolio of solutions, including SAP Business One, SAP Business All-in-One, SAP Business ByDesign, and BusinessObjects Edge.

Part III: Essential SAP Tools
Read all of the chapter descriptions to get an idea of what’s included in each

This part covers important tools that you might encounter in an SAP implementation. Let’s get a quick recap of these chapters now:

Chapter 14
SAP Reporting and Analytics gives you a detailed look at the new BusinessObjects portfolio, including Enterprise Performance Management, Business Intelligence, Governance, Risk, and Compliance, and Information Management.

Chapter 15
SAP HANA introduces you to SAP’s new in-memory database. This chapter is a bit more technical than the others, and will highlight the differences between traditional data processing and SAP’s newest method.

Chapter 16
SAP Mobility provides helpful information on developing apps, mobile security options for the enterprise, and SAP’s platform.

Chapter 17
User Productivity Tools for Information Workers is where you learn about role-based portals, which are work areas customized to each worker in your company to make them more productive. In addition, we explain how employee self-service (ESS) and manager self-service (MSS) functions allow your people to initiate many processes themselves, thereby saving them time and your money.

Chapter 18
User-Friendly SAP: Duet, Alloy, Adobe Interactive Forms, and SAP Fiori highlights tools intended for users of SAP software. Duet is a joint project between SAP and Microsoft, which provides the functionality of SAP through the Microsoft Office interface so familiar to knowledge workers. Alloy allows employees to continue using Lotus Notes while providing access to data within the SAP Business Suite. SAP Interactive Forms is software by Adobe that uses Adobe Acrobat technology to make easy-to-use interactive forms, which SAP embeds within business processes. And SAP Fiori is a collection of apps.
Chapter 19
*SAP NetWeaver as a Technology Platform* introduces you to SAP NetWeaver, the technology platform on which all other SAP products rest.

Chapter 20
*Preparing for an SAP Implementation* provides advice about how to prepare for putting SAP in place, from your assessment of your own company and its needs, to the programs, people, and services that can help you be successful.

Chapter 21
*Preparing for an SAP Cloud Implementation* provides advice about how to prepare for putting SAP in place in the cloud.

Chapter 22
*An Introduction to SAP Rapid Deployment Solutions* provides information on a third implementation option, in which you choose pre-configured software for a less expensive and quicker experience.

Chapter 23
*SAP Solution Manager* is a useful tool built into SAP NetWeaver that guides you through every step of your SAP implementation and even provides useful documentation about the specific solution you implement.

Appendix
We provide three useful appendices for your reference:

› **Appendix A**
  A glossary of SAP and enterprise computing terminology.

› **Appendix B**
  Provides information about various resources for help and information related to SAP and its products.

› **Appendix C**
  Gives you a useful collection of SAP solution maps that you can use as a quick reference for looking up the product and features you need.

In addition, the book includes an index that you can use to go directly to certain points of interest.

We hope that this straightforward overview of SAP and its technologies and products will give you the information you need to assess your own business needs, determine which SAP products and services to explore further with an SAP account representative, and help you take advantage of the many benefits that SAP has to offer for solving enterprise challenges.
Without customers, most companies would be out of business. Gaining, servicing, and retaining customers are some of the most important activities any business can undertake. Managing customer relations begins when you market a product, continues through the entire sales cycle, and still does not end when the sale is complete. If you are good at maintaining customer relationships and focus on supporting your customers after they buy, your customer relationships can endure for years to come.

SAP Customer Relationship Management (SAP CRM) is part of the SAP Business Suite. SAP CRM allows for more efficient and effective interaction with customers, retailers, distributors, and others to help you support marketing, sales, and after-sales service.

In this chapter, we explain the role of SAP CRM in an enterprise and the specific features that SAP CRM offers you. We also provide case studies of real-world uses of SAP CRM.
How SAP CRM Fits in an Enterprise

SAP CRM is a very robust offering, and if you follow the solution map to its detailed level (see Appendix C) you will tally up perhaps a hundred or more features delivered by SAP and partner products. In this section, we look at the solution map for SAP CRM and general capabilities in each of its six major areas:

- Marketing
- Sales
- Service
- Partner Channel Management
- Interaction Center
- Web Channel

These areas are outlined in the SAP CRM solution map.

SAP CRM Solution Map

The solution map for SAP CRM is a bit complex, so we will tackle that first. In Figure 8.1, you can see that there are three main areas of CRM functionality:

- Marketing
- Sales
- Service

To the right of these categories on the map are three vertical categories: Web Channel, Interaction Center, and Channel Management. Any of these three vertical categories might be used in any of the main categories, so they are considered cross-functional (and therefore listed vertically in the map). For example, you may sell via the web, but you might also use web commerce methods to market to customers or support them after a sale.

Figure 8.1 SAP CRM Solution Map

SAP CRM in an Enterprise

You may have heard the term customer centric. Essentially, this term describes a concept that many businesses use to drive their success. When you put the customer at the center of your business, you ensure that everything you do is an effort to gain and retain customer loyalty.

When you think about it, the customer is at the heart of most of the activities that a business engages in, from designing and building products to promoting products, taking and fulfilling orders, and providing support. Customer relationship management focuses on the areas in which you have the most direct contact with your customer—the marketing/sales/service portion of your business.

Using SAP CRM, you can centralize customer data to ensure that everybody from your salesperson to your order picker has the same information. You can streamline processes such as telemarketing, sales-account planning, and running customer interaction centers. You can set up customer self-service features to allow customers to register products online or track shipments. This self-service frees up your customer service people for other tasks.

Example

An online clothing store that implements customer self-service features saves its employees from answering routine questions about products or order status so that they can spend time solving problems related to returns or cross-selling accessory products, such as handbags or jewelry.

SAP has built standard business processes into SAP CRM, including processes for handling customer complaints or product recalls, managing marketing campaigns, and tracking the results—even processing credit card payments and checking customer credit.

The following section provides details about many of the features included in SAP CRM, divided into six key areas.

A Closer Look at SAP CRM

Each of the areas of SAP CRM, such as Sales or Marketing, has its own set of capabilities. In this section, we look at these capabilities.
in detail along with the types of business processes they help you manage.

**SAP CRM Overview**

Take a look at each of the major areas of SAP CRM listed in the solution map, each of which is discussed in more detail in the sections that follow. Table 8.1 outlines the key areas of CRM, based on SAP’s solution map.

<table>
<thead>
<tr>
<th>Category</th>
<th>Application</th>
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</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>› Marketing Resource Management</td>
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<td></td>
<td>› Segmentation &amp; List Management</td>
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<td></td>
<td>› Campaign Management</td>
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<td></td>
<td>› Trade Promotion Management</td>
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<td></td>
<td>› Lead Management</td>
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<tr>
<td>Sales</td>
<td>› Sales Planning &amp; Forecasting</td>
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<td></td>
<td>› Territory Management</td>
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<td></td>
<td>› Accounts &amp; Contacts</td>
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<td>› Opportunity Management</td>
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<td>› Quotation &amp; Order Management</td>
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<td>› Pricing &amp; Contracts</td>
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<td>› Incentive &amp; Commission Management</td>
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<td>› Time &amp; Travel</td>
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<td>Service</td>
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<td>› Service Contracts Management</td>
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<td>› Complaints and Returns</td>
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<td>› In-House Repair</td>
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<td>› Case Management</td>
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<td>› Installed Base Management</td>
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<td>› Warranty Management</td>
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<td>› Resource Planning</td>
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<td>Web Channel</td>
<td>› E-Marketing</td>
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<td>› E-Commerce</td>
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<tr>
<td></td>
<td>› E-Service</td>
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</tbody>
</table>

**Table 8.1  SAP CRM Solution Map**

The features in this solution map cover the entire lifecycle of customer relations and include the following:

› Tools for marketing products and services to customers through a variety of campaign mechanisms
› Sales tools that help your salespeople plan, forecast, and follow through on sales efforts
› Services features that allow you to manage after-order service with service orders, service contracts, and repairs
› A range of tools for online selling and support
› Interaction tools to help you run your customer interaction operations with features for telemarketing and customer service

We look at each of these tools and features in more detail in the sections that follow.

**Marketing**

Whatever business you are in, marketing your product or services to customers is sometimes the first contact you have with them. The presentation of your message through a variety of customer touch points and the professionalism of your marketing activities can make a great impression or a poor one.

If you are involved in marketing, you are aware that it is a complex endeavor. You need sophisticated tools to plan, launch, and track...
The ability to have current data, integrated systems and processes, and robust analytics is important to your work. The marketing solution in SAP CRM provides a way to integrate your marketing data and activities. SAP CRM Marketing offers a central platform for a variety of marketing activities, including the following modules:

› **Marketing Resource Management**
  Helps you in areas such as market research, planning (see Figure 8.2) and budgeting, cost and volume planning, brand awareness, and marketing project management.

![Image of Marketing Plan in SAP CRM](image)

Figure 8.2  Marketing Planning in SAP CRM

› **Segmentation and List Management**
  Involves managing and high-speed searching of customer and prospect information, generating predictive models, data mining, and list management and analysis.

› **Campaign Management**
  Helps you to plan and simulate campaigns, creating a marketing calendar, doing campaign-specific pricing and real-time response tracking, and performing analysis of target groups and campaigns.

› **Lead Management**
  Helps you manage multiple interaction channels, automate qualification, dispatch leads, use web-based lead generation, and automatically initiate follow-up activities.

› **Trade Promotion Management**
  Helps you to gain visibility and control of all trade-related processes. It also helps you increase your trade-promotion success with analytics and enhanced management of trade funds, promotions, claims, and retail execution.

**Sales**

The area of sales has its own challenges, including managing sales territories, order tracking, and order processing. In a sales organization’s world, timely data and the ability to stay on top of prospective and existing customer activity are essential. Having accurate data and analytical tools helps you break down current sales trends and forecast future sales activity.

Tools such as analytics and queries that collect key sales data in one place can save salespeople time, because they do not have to hunt down data that is relevant to their customers from a variety of sources; therefore, these salespeople can be more efficient and effective.

Sales features in SAP CRM include the following:

› **Sales Planning and Forecasting**
  Provides capabilities for strategic planning, forecasting, collaboration, and account planning.

› **Territory Management**
  Allows you to manage market segmentation, assign and schedule territories, perform sales analyses by territory, and synchronize with your sales force via mobile devices.

› **Accounts and Contacts**
  Helps you plan sales visits, maintain an interaction history, use integrated email and fax features, manage relationships, and control customer-specific pricing and analyses.

› **Opportunity Management**
  Helps you to manage team selling, organize competitive information, use account-specific sales processes, work with business
partners, set pricing, and analyze (see Figure 8.3) and follow up on sales opportunities.

Figure 8.3 Analytics to Support Opportunity Management

› Quotation and Order Management
Provides the ability to handle quotations, track order status, validate orders, run credit checks, and process credit card payments and rebates.

› Pricing and Contracts
Allows you to work with value and quantity contracts, sales agreements, contract negotiation, release-order processing, and fulfillment synchronization.

› Incentive and Commission Management
Includes direct and indirect sales compensation, incentive plan modeling, contracts and agreements handling, and commission-simulation tools.

› Time and Travel
Helps you to track salesperson activities, including features for time reporting, managing expense reports, cost assignment, and tracking receipts and mileage.

These sales tools provide information and streamlined processes so that your sales force can spend more time selling and less time tracking data or filling out hardcopy expense forms.

In addition, SAP offers mobile apps for sales as of SAP CRM 7.0. SAP CRM mobile applications allow your field sales people and field service technicians to access SAP applications and customer data from a variety of devices. Mobile Sales for SAP CRM is primarily available via an occasionally connected mode for laptops and tablets.

Service
After you have connected with a customer and that customer has placed an order, you have to process that order and support your customer. That is where SAP CRM Service comes in. Depending on your business, everything from managing in-house repairs of warrantied products to handling complaints and returns may come into play here.

SAP CRM Service includes the following areas:

› Service Order Management
Helps enterprises to support the complete service-processing lifecycle, including creation of service-order quotations, generating service orders, and delivering confirmations.

› Service Contracts Management
Includes managing service agreements, service-contract processing, service-plan processing, usage-based contract management, and service-level management.
Complaints and Returns

This functionality enables dissatisfied customers to file complaints and return products. A guided activity helps the customer to file a complaint. A complaint can become the basis for a number of follow-up processes, such as return, credit memo, or debit memo.

A guided activity helps the customer to return purchased goods. However, the customer can return only one item at a time, and the return should occur within the stipulated time frame.

In-House Repair

The customer uses an interaction center or a web application to report a defective item that they want to send/bring in for repairs. A loan-device delivery to the customer, to bridge any long repair times, can also be created in this application.

Case Management

This functionality helps you to consolidate, manage, and process relevant information about a complex problem or issue in a central collection point. Case Management can also be used to process problems and issues that involve multiple processing steps or multiple processors.

Installed-Base Management

This functionality enables the representation of objects installed at the customer’s location for which a service is provided. These objects can be devices, machines, or software. Installed-Base Management can also be used to manage objects within your organization.

Warranty Management

This functionality enables you to identify warranties within the processing of business transactions in service, check if claims on warranty services are legitimate, check if the newly created problem message is a case for warranty, monitor the cost of warranties, and identify the effect of warranties on pricing and billing.

Resource Planning

Service Resource Planning is used to execute project-based scheduling or service order-based scheduling using a number of resources. Using this functionality, you can determine and schedule the required resources.

If your operation involves after-sales support and you manage that support in-house, this set of features within SAP CRM will help you track data and fulfill service contracts efficiently.

SAP Web Channel Experience Management

Most companies have a web presence today. Customers have come to expect a range of e-commerce tools, including online ordering and order-status checking, online catalogs, and the ability to pay online.

The SAP Web Channel Experience Management solution, formerly called E-Commerce or Internet Sales, allows you to place your entire sales process online. You can provide easy-to-use sales tools and self-service features that give customers a personalized sales experience. You can also use features to streamline your back-end fulfillment of online orders. Web Channel features are cost-effective for both business-to-business (B2B) and business-to-consumer (B2C) activities.

As you saw in Table 8.1, Web Channel breaks down into three main areas: E-Marketing, E-Commerce, and E-Service. The specific features you can take advantage of in each of those areas are discussed next.

E-Marketing

E-Marketing involves those aspects of your online store that promote your products or services. It consists of the following:

Catalog Management

Helps you create an electronic catalog of your products and describe their features and specifications.

Content Management

Allows you to create and manage content for your website that helps customers find what they need as they shop online.

Personalization

Allows you to create customer accounts and personalize their shopping experience.

Loyalty Management

Allows customers to enroll in loyalty programs and accrue and redeem loyalty points.
Email and Web Campaigns
Enables you to promote your products online.

Store Locator
Helps online customers find the nearest physical store location. This is a feature that companies with brick-and-mortar stores usually build into their websites.

If gaining online customers is important to your organization, E-Marketing features will be valuable to your e-store presence.

E-Commerce
E-Commerce pertains to pricing and selling via the Internet. This group of capabilities includes the following:

Quotation and Order Management
Helps you set up a quotation system for products that are customized by product design or quantity discounts and to process related orders.

Shopping Basket Management
This shopping cart feature helps you manage your online customers’ checkout process.

Pricing and Contracts
Helps you manage how you price your products and offer discounts and how you manage sales contracts for services or products.

Interactive Selling and Configuration
Allows you to set up live interaction between salespeople and online customers to help close the sale.

Web Auctions
Enables you to run an auction operation involving item postings, bidding procedures, and confirmations.

Selling via Partners
Provides tools for cross-selling through strategic sales partnerships.

If your company has online sales activities, SAP CRM E-Selling tools can provide a comprehensive solution to manage each aspect of your sales cycle.

E-Service
E-Service has all of the tools required to manage orders and support customers:

Knowledge Management
Helps you to manage data about online sales and produce reports about trends helpful for planning and forecasting.

Service Order Management
Allows support of online sale order processing.

Live Support
Contains tools for setting up live support for your customers so that they can get answers to their problems in real time.

Installed Base
Helps you to measure the number of customers you have as opposed to your market share.

Complaints and Returns
Helps you handle customer issues efficiently to turn dissatisfied customers into satisfied ones.

Billing and Payment
Allows you to process invoices and payments for online sales.

Account Self Service
Gives customers the tools they need to get information without having to interact with a support person or salesperson.

E-Service tools round out the e-commerce capabilities of SAP CRM by taking your hard-won customer orders and handling them efficiently.

Interaction Center
Whether you call it your telemarketing group, customer service center, or telesales function, any area in which you interact with customers is managed via the Interaction Center (IC) portion of SAP CRM.

IC covers activities such as telemarketing and customer support. If you have a customer interaction center, whether you use such centers to actively sell products or simply support customers after the sale, this SAP CRM feature will prove invaluable. Next, we will discuss the...
SAP Customer Relationship Management

various activities it supports in four areas: Telemarketing, Telesales, Customer Service, and IC Management.

Telemarketing

Telemarketing helps you organize and manage outbound marketing campaigns, including the following:

› Campaign Execution
  Plan your marketing and sales efforts.
› Lead Management
  Manage data about sales leads.
› Personalization
  Plan ways to connect sales efforts with potential customers in unique ways.

Telesales

Telesales includes tools to help you manage the actual telemarketing effort when you are selling directly to the customer:

› Accounts and Contacts
  Manage contact information.
› Activity Management
  Track sales activity.
› Quotation and Order Management
  Enable your telesales force to provide quotes and place orders.

Customer Service

After you have obtained a customer’s order, Customer Service helps you work with your customers in these areas:

› Help Desk
  Provides assistance with product features.
› Customer Service and Support
  Helps support your customers after an order is placed.
› Complaint Management
  Deals with customer issues regarding product problems or defects.

IC Management

IC Management is all about running your interaction center in these areas:

› Knowledge Management
  Controls data about your IC contacts.
› Process Modeling
  Helps you design efficient IC processes.

› Communications Channels
  Helps you set up efficient phone, online, and other communications methods.

If your company handles IC functions by itself or even works with an outsourcing partner for a portion of them, these features will help you implement more efficient procedures and streamline your customer interactions.

Partner Channel Management

What if you don’t sell directly to customers? Many businesses work through partners to sell what they make. For example, companies such as jewelry manufacturers or book publishers primarily use retailers to sell their products. Other companies work with a franchise model or sell through third-party sales groups. How well these companies manage their partner relationships determines much of their business success.

For example, Partner Channel Management allows you to manage your indirect sales channels—that is, your partners who sell for you. Tools for improved collaboration address sales, marketing, and service activities. In addition, analytics help you evaluate how your partners are performing.

Partner Channel Management covers the entire lifecycle of a channel relationship, from strategizing your partnerships to providing information to your partners about your products, managing pricing, managing orders, and even setting up collaborative showrooms.

The various areas of SAP CRM Partner Channel Management that support channel management include the following:

› Partner Management
  – Partner Lifecycle Management
  – Partner Training and Certification
  – Partner Planning and Forecasting
  – Partner Compensation
  – Partner Networking
Channel Marketing
- Partner Communication
- Catalog Management
- Campaign Management
- Lead Management
- Channel Marketing Funds
- Partner Locator

Channel Sales
- Accounts and Contacts Management
- Activity Management
- Opportunity Management
- Pipeline Analysis
- Deal Registration

Partner Order Management
- Quotation and Order Management
- Interactive Selling and Configuration
- Pricing and Contracts
- POS and Channel Inventory Tracking
- Collaborative Showroom
- Distributed Order Management

Channel Service
- Knowledge Management
- Live Support
- Service Order Management
- Warranty and Claims Management
- Complaints and Returns Management

Many businesses today sell through multiple channels. SAP CRM provides features for keeping these vital channel relationships running efficiently.

In the following section, we will briefly explore your options for an SAP CRM cloud solution.

SAP CRM Cloud Solution
If you want to transition to SAP CRM faster, consider checking into the SAP CRM cloud solution. This is a cloud-hosted solution that helps you switch to SAP CRM without having to implement the full solution in-house. These solutions are available in a subscription-based licensing model. You can expand your CRM features quickly and only as you need them. On-demand solutions from SAP use the same user interface as SAP CRM, so it is easy to shift the solution from a hosted one to a locally run, in-house solution down the road if you want to make this transition without having to start from scratch.

The SAP Cloud for Customer includes the following modules:

Cloud for Sales
Cloud for Service
Cloud for Marketing

The SAP Cloud for Customer also includes industry-specific offerings. The following offerings are currently available:

SAP Cloud for Customer for Retail (B2E)
This solution provides the following functionalities:
- Enables the retail store employees to engage and enhance the in-store experience of their customers. The store employees will be able to provide personalized assistance such as unique offers, targeted product recommendations, and convenient check-out options.
- Access customer history.
- Look-up for products, prices, promotions and offers.
- Time management, calendar appointments, tasks, store events, brand promotions, and social engagement are also fully supported.

SAP Cloud for Customer for Insurance
This solution empowers the insurance company’s insurance agent to gain more insight into the customer profile and help the agents with guided process flows for executing the entire sales cycle, from lead to quote and to policy. The solution provides the following functionalities:
- Create and maintain insurance products in SAP Cloud for Customer.
- Use standard interface with Camilion as the default insurance engine to calculate premiums, to source quick quotes, and to interface with SAP FS-PM (Policy Management) as the source for policy management.
- Simulate commissions for captive agents using the standard interface to SAP FS-ICM (Insurance Commission Management System).
- Using the Microsoft Outlook integration add-in, you can set up email workflow and other interaction web channels to maintain dialogue with customers.

> SAP Cloud for Customer for Utilities
This solution provides a unified sales interface with business support for utilities and B2B support. The solution provides the following functionalities:
- Track leads and identify opportunities for key utilities accounts.
- Capture utility-specific technical master data, such as connection jobs, IBASE, and other relevant master data.
- Get detailed insight into a customer’s buying preferences by using the 360-degree customer view and other analytics features.
- Manage utility contracts for a varied product portfolio by using the different configuration options and an integrated process interface to support various types of contracts and service products.
- Sell into specialized channels, such as educational markets, with the use of Channel Management.

In the following section, we look at the technical underpinnings that enable SAP CRM to provide some of its functionality.

**SAP CRM Technical Details**
SAP CRM is supported by SAP NetWeaver, whose open architecture provides a web-based interface for accessing customer information. The SAP NetWeaver platform also enables interaction among various communication channels, such as telephone, email, chat, and short message system (SMS).

For example, if you want to set up a customer service operation, you will need a way to handle communication via telephone, email, and perhaps even a chat feature for real-time interaction with sales or service people and customers. These are all supported via SAP NetWeaver. See Chapter 19 for more on SAP NetWeaver’s support for SAP products.

The analytics features of SAP NetWeaver are all about taking data and manipulating it to produce analyses, reports, and forecasts that provide consistent front- and back-office information. Integration services help users of SAP CRM connect with other SAP Business Suite solutions, such as SAP ERP, and with external systems. If, for example, you want to integrate your customer-order process with your backend financials, you can do that by using tools in SAP NetWeaver to integrate data from SAP CRM with SAP ERP Financials.

By now, you know that SAP CRM has a sound technical foundation and is packed with a long list of features, but you may be wondering how it works in the real world. The next section addresses this by presenting a case study that shows you how SAP CRM solved problems at one U.S. company.

**SAP CRM Case Study 1**
Review Table 8.2 to get a quick snapshot of a case study exemplifying SAP CRM.

<table>
<thead>
<tr>
<th>Company</th>
<th>U.S.-based manufacturer of office equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Solutions</td>
<td>SAP R/3, plus several third-party legacy systems</td>
</tr>
<tr>
<td>Challenge</td>
<td>To improve the access of customer service staffers to data about previous customer contact, to tie the online accessory store to the billing system, and to centralize customer data and connect systems</td>
</tr>
</tbody>
</table>

Table 8.2  SAP CRM Case Study 1
Differentiation through customer service

SAP helped a U.S.-based manufacturer of office equipment—including printers, faxes, and multifunction products—to implement a CRM solution. The company employs 1,100 people and is a subsidiary of a larger company based in Japan. This U.S.-based manufacturer of office equipment sells its products through several channels, including mass merchandisers, dealers, distributors, retailers, and office superstores; however, all of its after-sales customer contact is handled in-house. Because this industry offers slim profit margins and has weak customer loyalty, differentiating itself via customer service was critical to the company’s success.

The Challenges

The company faced several challenges in its customer relationships. Through its national service group, the company supports all customers and resellers, as well as parts distribution, returns, and customer contact centers. One of the key problems was that call-center staffers, who field almost 150,000 calls monthly, could not get records of previous calls. With a 20% repeat call rate, this caused huge problems, including a higher-than-industry-average rate of product returns. The company’s online accessory store was not tied into the main billing system. Orders were received via email and then entered into SAP R/3. Credit card checking was done after the receipt of the order. Decentralized customer data and disconnected systems were costing this company money and worse, customers.

The SAP Solution

SAP worked with the company to phase in a solution that included SAP CRM working with SAP Business Warehouse (SAP BW). SAP CRM handled the customer contact processes while SAP BW offered a method for centralizing customer data.

Table 8.2  SAP CRM Case Study 1 (Cont.)

<table>
<thead>
<tr>
<th>SAP Solutions</th>
<th>SAP CRM and SAP Business Warehouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>Better control of customer record management and centralization of data</td>
</tr>
</tbody>
</table>

The solution was used across the organization; that is, in the customer service, technical support, parts distribution, and returns areas. Replacing disparate accounting, email, call center, and databases, the company integrated these into a single solution via SAP R/3, which the company had already implemented.

The centralized data supported inventory and order-status data, call logging, retrieval of customer data, a solutions database to provide call center staff with consistent answers, up-selling and cross-selling, and a universal customer number system for order fulfillment and follow-up support.

The company took advantage of ASAP, an SAP rapid implementation methodology, to deploy SAP CRM and SAP BW. The Directors of Parts, Operations, and MIS (Management Information Systems) headed the internal team, which implemented the following:

› Migrating data for 330,000 customers from SAP R/3 and other third-party and legacy systems to SAP CRM/SAP BW
› Deploying campaign-management features and a solution database for internal use
› Adding capabilities for managing inbound email
› Automating four call centers in a phased rollout

The Benefits

The solution reduced returns and improved the company’s business process efficiencies in dramatic ways. Their rate of returns dropped while the industry rates were rising. The company could now execute a campaign in hours, rather than days, and with fewer resources. It could generate reports that helped get better leads. The average cost of a campaign was lowered by $4,400.

By using a single customer database, data was more accurate, providing for more consistent and accurate information throughout the customer support organization. SAP set up a system through which customers could register their products online themselves, saving employee time. This data fed into SAP CRM for immediate access by company staff.
Time spent on customer support calls dropped, and the volume of calls themselves dropped. Interaction was shifted from phone to email and was handled through the centralized SAP R/3 database, resulting in significant savings. Standardized processes for complaint management ensured that grievances were handled better and customer satisfaction was higher.

One important benefit of the new system was reduced employee stress. When an employee interacting with a customer is more confident that the information he is accessing is accurate, stress is reduced considerably.

**Looking toward the Future**

The company hopes to build on its efforts by deploying other SAP CRM features. The company plans to use Internet sales features in SAP CRM to replace its own online store. In addition, the company wants to take advantage of telemarketing and mobile sales features. The company will add Internet access for their dealers to receive leads and schedule sales appointments more efficiently.

**SAP CRM Case Study 2**

Table 8.3 provides you with another quick overview of a case study; review it before we explain it in more detail.

This Asian company deals in pulp and paper products, runs 14 manufacturing sites, and has various subsidiaries and partners. The company sells to customers around the world and has a workforce of more than 20,000.

<table>
<thead>
<tr>
<th>Company</th>
<th>Asian paper mill products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Solutions</td>
<td>SAP R/3 for critical business processes</td>
</tr>
<tr>
<td>Challenges</td>
<td>To obtain up-to-date customer information for customer inquiries and to ensure minimum disruption to operations and customer services</td>
</tr>
</tbody>
</table>

**Table 8.3 SAP CRM Case Study 2**

**The Challenges**

Salespeople and customer service people who had to work with customers of this large China-based company were not able to get the up-to-date customer information they needed to handle customer inquiries. Response times were not as fast as needed to keep customers satisfied.

The company had many self-designed forms and interfaces that had to be integrated or replaced all on a tight schedule. Moreover, the company had to ensure minimum disruption to operations and customer services.

**The SAP Solution**

One thousand users were upgraded to SAP ERP at 14 sites. SAP worked with an internal team to perform the upgrade in 15 weeks with little downtime. Besides implementing SAP ERP, the team integrated SAP CRM so that salespeople and customer service people now have timely access to information through customized interfaces. Enhanced system performance also allows for faster response times.

In addition, SAP BW was implemented to improve the reporting available to managers for making key decisions about how to best serve customers and plan for the future.

**The Benefits**

Besides improvements in handling data, the company has realigned its processes for better customer service and increased productivity. The company’s IT operation has less to do to maintain the system and make changes to it. The company’s ability to more rapidly access and act on customer data has provided a competitive edge and laid the foundation for future growth.
Conclusion

In this chapter, we outlined the entire SAP CRM product and its many features for interacting with your customers, including the following:

› How SAP CRM fits into your enterprise
› The six key areas of SAP CRM, including both cross-industry (such as analytics) and SAP CRM-specific functionality in marketing, sales, service, interaction center, e-commerce, and channel management
› The technology on which SAP CRM rests
› How SAP CRM works in real-world settings

Serving your customers and collecting their orders is an important part of your business. But after you have those orders in-house, how do you ensure that you can fulfill them? In Chapter 9, we explore another useful tool that can help you to build your products and deliver them to your customers: SAP Supplier Relationship Management (SAP SRM).
As more and more people carry their personal smartphones, tablets, and wearables, they have begun to expect to be able to interact with their corporate software via these devices. People no longer expect to be given a corporate “technology of choice,” with limited abilities and no personal tools. They want to use their own personal devices, with their own personal applications, and perform their jobs on the go.

At the same time, “millennials” have the expectation that enterprise software interacts with them in the same way as the consumer apps they are so used to. The user interface must be beautiful, intuitive, and user-friendly to a degree that requires no training to use. They must be comprehensive in a way that does not bind people to their desks to perform their work.

Through acquisition, development, and research, SAP has developed an impressive portfolio of enterprise mobility solutions that gives organizations a comprehensive set of tools to manage all of these mobile aspects—from managing a vast range of different BYO (“bring your own”) devices securely in a way that does not put the organization’s precious data and hardware assets at risk, and allow employees to interact with their internal corporate software, performing common tasks on the go.
This chapter discusses the opportunities and challenges that organizations face in the journey to "mobilize" their applications, their workforce, and their customer experience. It also discusses many tools that SAP makes available, many of which are available through the SAP app store at https://store.sap.com.

**Why Mobilize?**

Everyone is talking about mobilizing their organizations, but what are the advantages, the business benefits, and the pitfalls of doing so?

The need for mobility is a simple matter of competitiveness. In the same way that the early cell phones freed people from their desks and made them infinitely more effective, being connected on the go is making people more effective at their jobs. They gain the ability to have the correct information to make correct decisions wherever they are, they are able to interact with the organization to provide updates on the work they are doing, and they can approve expenses, transact, exchange information, update project information, update production statistics, enter sales orders, receive payments, and so on. All of this makes the organization as a whole more dynamic, more effective, and more responsive.

The challenges of bringing this technology into the corporation are numerous. The first issue is a lack of solutions themselves. Corporate software vendors have traditionally focused on the desktop and, to some degree, on web-based technologies. Only recently have they awakened to the fact that people need to interact with their ERP systems through handheld devices. Furthermore, not all solutions are generic. Many are industry or even company specific and need to be tailor-made. So the first challenge is to identify which areas to address and what to use: purchased software, in-house development, or a mix of both.

The second challenge lies in the devices themselves. The mobile device market is highly dynamic, and products change all the time. There is no use in forcing everyone to use the same device, tested, approved, and certified by the organization. This had, until now, been the approach of most organizations regarding other types of hardware, but it does not work for this case. The organization must be able to support multiple types of devices and be dynamic enough to absorb new devices as they enter the market.

This in itself creates the next challenge—security. How can an organization keep unauthorized people from gaining access to its data and systems at the same time as it makes sure that the loss of a mobile device does not create a threat to the organization?

The plan to mobilize must address these points: BYO devices, security, what types of applications to use, and what types of devices to support. All of these points are important and must have equal bearing on the choices made.

**Types of Mobile Applications**

Essentially, there are three types of mobile applications: web-based, native, and hybrid. They all deliver content to mobile devices, each through its own methods and with different benefits and pitfalls. We will cover the three different types in this section.

**Web-Based Mobile Applications**

Web-based mobile applications are essentially websites that are optimized to be accessed via mobile devices. In many cases, they look and feel like a mobile app, but they are in fact websites. For example, there are many mobile banking applications built as web-based mobile applications. Another case are applications that require a high degree of interaction with the backend system.

The advantage of this type of mobile application is that there is no need to develop the same application several times to support several types of devices. One size fits all—that is, once the mobile website is built, it will function on any mobile device that supports HTML, CSS, JavaScript, and so on, and these days most popular devices support this technology.

The disadvantage of this technology is that it is very much dependent on the user being online for the app to function. In fact, users would find it very hard to run the application without access to the website. Another point is that web-based mobile apps' user interfaces are not as good as the ones built natively. It is difficult to build a user interface that functions well in all devices, that looks good in all devices,
and, because the app has to send and receive data from the website all the time, that is as fast as a native application.

The takeaway is this: web-based mobile apps are fast to build and easy to deploy, but may not necessarily deliver the best possible user experience. Of course, as networks improve, mobile libraries become more comprehensive, and the devices themselves become more powerful, mobile apps become more and more a promising proposition.

Native Mobile Applications

Native applications are the ones that most of us are accustomed to use. They have taken the world by storm. We chat with our friends, check the weather, make purchases, listen to the radio, and so on, all with native applications we download from app stores.

Best user experience

These apps deliver the best user experience; they are fast, handle offline activities, access the device’s utilities to read barcodes, play sounds, read and write credit cards via NFC (“near field communication”), interact with iBeacons, and find their geographical position via GPS. They are still able to talk to the web. They can still display HTML documents and read websites. They can still send and receive data via HTTP to RESTful services—the same as web-based mobile apps.

Harper to deploy

The disadvantage of this type of mobile application is that it is necessary to build one app for each type of device that is to be supported. One Android app, one iOS app (or maybe two—one for iPhone and one for iPad), one for Blackberry, one for Windows, and so on.

The takeaway is this: native apps deliver compelling user interfaces and access the devices’ native capabilities but are harder to deploy and more expensive to build and maintain.

Hybrid Applications

Hybrid applications are built to take advantage of both options; they are built once using one technology—so they are faster and cheaper to build than native applications—and then are packaged and delivered to each type of mobile device. They deliver faster and better user interfaces and have direct access to the device’s local capabilities.

There are several options and technologies to build hybrid applications. One of particular interest to SAP mobile developers is Apache Cordova. The developer builds a web-based mobile app initially—for instance, using SAP AppBuilder and SAPUI5—and maybe this app leverages data access to an SAP NetWeaver system via SAP Gateway.

The hybrid app is then imported into an Apache Cordova folder in the developer’s PC or Mac, where several builds of the same website are created: one for iOS, one for Android, one for Blackberry, one for Windows, and so on. Apache Cordova then generates native versions of the website and places them inside the native application, which is then compiled and enhanced with Apache Cordova libraries. These libraries use the device’s local capabilities, such as the accelerometer, sound player, sound recorder, GPS locator, and so on. The result is: several native applications to be distributed via the devices’ app stores.

The advantage of this type of mobile application is that the need to develop the same application several times is greatly reduced, whereas user experience and performance are better than with web-based applications.

The disadvantage, on the other hand, is that they are neither as cheap as developing one website only, nor as responsive as the equivalent native app. However, as more and more organizations demand this type of technology and more tools enter the market, the tendency is that hybrid applications will become better in both ways: easier and faster to use and build, while delivering better and better user interfaces.

What Type Is Best for Your Organization?

Deciding which type of development to use is a question of understanding your organization’s needs and priorities. One size does not fit all.

If the solution requires an outstanding user interface or this solution will be the reason that consumers will choose your organization instead of a competitor, then maybe the best choice is to go for the higher investment of building and maintaining native applications.

If cost is an important factor or if having the ability to use the solution in several devices is a more important factor, then the best solution may be to go for web-based development.
There can also be a question of maturity involved. If this is the first time your organization is toying with the idea of building a mobile application, then a first solution may be delivered as a web-based solution or as a native solution for a limited set of devices—say those devices that the target workforce is more likely to own.

Mobile Apps in the SAP Business Suite

SAP offers ready-to-use mobile applications via the SAP mobile marketplace. They cover a vast range of business functions and configurations. They can work on their own to perform discrete tasks or interact with the SAP Business Suite to allow employees and business partners to perform their work from anywhere in the world, at any time, from their own mobile devices. Figure 16.1 illustrates the mobile applications offered by SAP as part of the SAP Business Suite.

These applications free employees from the need to use a computer to interact with their enterprise software to perform certain tasks. People can do part of their work on the go from a mobile device such as a smartphone or a tablet.

These applications are essentially mobile versions of functions that can normally be performed via a desktop or laptop computer, interacting with SAP Business Suite tools such as SAP ERP, SAP CRM, or SAP SRM.

Applications are being added every day. More information on these applications can be found at [https://help.sap.com/bs-mobileapps?current=bs-mobileapps](https://help.sap.com/bs-mobileapps?current=bs-mobileapps).

We will go over some additional areas of specialties for mobile apps in the next sections.

Mobile Apps for Industries

SAP has developed more complex applications that are focused on resolving specific business problems within specific industries. Some examples of such apps include the following:

- **SAP Complex Manufacturing Accelerator**
  This is a tool for the shop floor. Users can collect operation-level data and display information on each production operation, including texts, documents, and images. They can collect traceability data, such as serial numbers and lot numbers, and monitor the production process as a whole.

- **SAP Direct Store Delivery**
  This app helps the store order and replenish goods on the fly. It enables mobile users, such as the field sales force and delivery drivers, to respond quickly to the customer’s needs for new and revised orders while reducing inventory costs.

Mobile Apps for SAP Cloud Solutions

SAP offers mobile apps that interact with SAP Cloud solutions, including the following:
Mobile Apps for SAP HANA

Some of SAP’s mobile apps are built to leverage the power of SAP HANA’s in-memory database, delivering superior customer experience for performing complex or data-intensive tasks in highly responsive applications.

Some examples of these apps include the following:

- SAP Liquidity Risk Manager (HANA)
- SAP Receivables Manager for HANA
- SAP Fraud Detection Calibrator (HANA)
- SAP Account Intelligence (HANA)
- SAP Business Transparency (HANA)

SAP Fiori

SAP Fiori is a set of web-based applications that allow users to perform the most common ERP business functions via HTML-based mobile and desktop devices.

SAP Fiori’s use of HTML technology and adaptive design makes it capable of seamlessly adjusting to most mobile and desktop devices. Indeed, it works on any HTML-based device, be it a tablet or a smartphone, such as iPhone, iPad, Blackberry, Android, Windows devices, and so on.

SAP Fiori’s architecture leverages the existing SAP ERP infrastructure—on premise or in the cloud—and uses SAP Gateway to expose the SAP ERP data via the OData protocol. The frontend is built in SAPUI5—a technology that uses HTML5 and JavaScript to deliver a simple and easy user experience on a beautiful interface that makes any millennial proud to be using SAP.

Figure 16.2 shows the areas covered by SAP Fiori.

SAP Fiori is supplied free as part of any SAP-licensed software.

Other SAP and Partner Mobile Apps

In SAP-delivered content, there are also several other apps written by SAP and partners. They can be paid for or free and can interact with SAP products directly, function on their own, or be part of applications hosted by partners.

Indeed, SAP has been very active in providing incentives for partners to develop innovative mobile solutions for known business problems. They can all be found on the SAP app store at https://store.sap.com.

Some example of other SAP-developed apps include the following:

- SAP 3D Visual Enterprise Viewer for iPad
- SAP 3D Visual Enterprise Viewer for Android
- SAP EMR Unwired for iOS
Mobile Security

What if a person loses a tablet or a telephone that contains information—possibly confidential information—pertaining to the company? How can an organization guarantee that only authorized persons with authorized devices have access to the appropriate information? Those concerns have kept many organizations from reaping the benefits of more widespread use of mobile technology.

SAP approached the problem from a different angle. It invested in technology that helps organizations embarking on a mobile journey to have complete peace of mind. These tools help IT departments remotely manage devices that have access to the company’s systems, help with registration of devices, with management of who has access to the company data assets, how those devices behave, and which applications and features remain valid when the devices are connected to the company’s network. Most importantly, these tools help to prevent unauthorized access should the device fall into the wrong hands; all of this can be done remotely from a central application.

We will discuss some of these SAP-provided security tools in the following sections.

SAP Afaria

SAP Afaria became part of SAP’s portfolio in 2012. Afaria was originally developed as a tool to help IT departments manage resources remotely, such as disks, files, and sessions. The solution was acquired by Sybase in 2004 and became SAP Afaria in 2012, when SAP acquired Sybase and entered the mobile-application market on a grand scale. In 2011, Gartner identified Afaria as one of the top mobile-device-management platforms in the first Gartner Magic Quadrant report on the mobile-device-management market.

SAP Afaria is available both on premise and in the cloud. It is a mobile-device security application par excellence; it provides peace of mind for companies that let employees have access to their data assets on their personal devices. It manages devices of all types remotely, controls what resources these devices have access to, and erases applications and revokes access should the device end up in the wrong hands.

SAP Mobile Documents

SAP Mobile Documents is a productivity tool that takes advantage of mobile technology and allows people to do part of their work on the go while keeping one version of the work document. It lets users share files, view mobile documents, and collaborate on documents remotely from any type of mobile device. SAP Mobile Documents can be deployed on premises and as a “hybrid” solution, with documents available at the same time from on premise and secure cloud servers.

SAP Mobile App Protection by Mocana

Mocana secures enterprise mobile apps—that is, those mobile apps built by the organization, for the organization, or by a third-party using the organization’s data. It uses the concept of “wrapping around” the mobile app; the developers do not need to build into their applications the concepts of encryption, security, and application safeguard.

It can be used to secure applications on both managed and non-managed devices.

Mobile Analytics

As much as for transactional systems, SAP recognizes the need for people to have the information they need to make decisions available anytime and anywhere. SAP has been focusing on enabling the use of BI tools on mobile devices. With such technologies, the following scenarios become viable:

- Sales personnel can enter a meeting with a client with full knowledge of the client’s order history, credit worthiness, applicable discounts, and so on, and be prepared to offer the best deal to the client based on real data. Sales personnel can also assess the impact
on their business of each new deal they offer their client right on the spot.

› Sales people can access available-to-promise data while deciding whether to commit to a larger sales order or not with the knowledge that they will be able to meet that larger or changed order. What if the client’s plans change? Sales personnel can check the impact on the spot.

› Procurement personnel can access spend information on a particular vendor, and this can help them negotiate a better deal for their company. They can then assess the impact of the new deal in future spend.

› Maintenance personnel can access the history of a particular piece of equipment while on the field.

What is the typical time between failures of this particular part or system? Which warehouse can I get a new one from, given my location? The answers to these questions are the very purpose of SAP’s Business Analytics tools, such as BusinessObjects, SAP BW, and SAP HANA. However, they are tools that natively deliver analytics solutions to desktop and web.

SAP BusinessObjects Mobile was created to enable the delivery of SAP Business Analytics content to mobile devices.

**SAP BusinessObjects Mobile**

SAP BusinessObjects Mobile enables the delivery of SAP BusinessObjects Business Intelligence content on mobile devices, such as iPhone, iPad, Android, and Blackberry.

SAP BusinessObjects Mobile is a container that manages access to corporate data securely and delivers many SAP BusinessObjects solutions via a mobile device. The same SAP Crystal Reports, SAP BusinessObjects Web Intelligence, and SAP BusinessObjects Dashboards that can be normally visualized on the corporate network via a desktop or laptop computer is delivered to mobile devices, on the go, with the simple use of SAP BusinessObjects Mobile.

Figure 16.3 shows a typical dashboard delivered on an Apple iPad with SAP BusinessObjects Mobile.

**SAP Mobile Platform**

SAP Mobile Platform (SMP) is a set of technologies that help mobile developers to build, deploy, and manage secure and scalable enterprise-grade applications that connect the workforce with their organizations. The platform is a result of the evolution of a number of technologies acquired and developed by SAP, such as Sybase Unwired Platform, Syclo Agentry, and Sybase Mobilizer.

SMP enables end-to-end development of complete mobile solutions that leverage the corporate systems and databases securely, using open technologies, such as HTTP OData, HTML5, REST API, and Apache Cordova.
SMP’s components include the following:

› SAP Mobile Platform Server (on premise)
› SAP Mobile Platform Cloud
› SAP Mobile Platform SDK

Figure 16.4 illustrates the architecture of SAP Mobile Platform.

We will go over the different components of the architecture in the following subsections.

**SAP Mobile Platform Server (On Premise)**

The SMP server is an application server that manages mobile applications, back-end synchronization, communication, security, transactions, and scheduling.

It helps the development team deploy applications and manage application security, and also acts as a gateway between the corporate systems and the mobile applications.

For the administrator, it provides a convenient way to manage tasks such as: who uses which application where, who has which version. It also gives the administrator an easy way to deploy applications in and out of the enterprise.

Some of its features include the following:

› Native push notification
› Authentication and secure onboarding (device registration)
› Administration, monitoring, application registration, and lifecycle management
› Reporting on mobile application usage characteristics
› Secure, reliable, and easy-to-consume access to business systems (both on premise and in the cloud)
› Centralized administration dashboard to configure and manage mobile applications
› Support for native and HTML5 application development using REST API services, Sencha, and Appcelerator

The secure onboarding is exposed as a RESTful service for client consumption. The platform enables proxy communication of any HTTP data source, such as SAP Gateway, SAP BusinessObjects, and SAP and non-SAP backend systems. SAP Cloud Connector serves as the link between on-demand applications in SAP Mobile Platform and existing on premise systems.

The SAP Mobile Platform Server runs on both Windows and Unix.

**SAP Mobile Platform Cloud**

SAP Mobile Platform Cloud delivers the same functionality as the SMP server, ready to be consumed in the cloud, offered by SAP as a platform as a service (PAAS). The availability of the platform in the cloud significantly reduces entry barriers, as it eliminates the need to install on premise mobile platform servers. This makes it cost-
effective, easier and faster for companies of all sizes to deploy the solution with minimum disruption.

The platform enables interoperability with both on premise and cloud-based servers, both with SAP or non-SAP systems.

**SAP Mobile Platform SDK**

SAP Mobile Platform SDK is a set of client-side tools that aids the mobile developer in building solutions that integrate with SAP enterprise software and other non-SAP systems.

The SAP Mobile Platform SDK leverages open-source technologies and standards that most developers are familiar with. These tools let the developer build web-based, hybrid, and native solutions, based on most common platforms, such as Android, iOS, Blackberry, and Windows.

Its components are several tools that increase the developer’s productivity, including the following:

- **Native OData**
  The OData SDK provides an open and flexible framework for native applications to interact with OData services in both online and (as of SDK 3.0) offline applications. It is compatible with iOS, Android, Blackberry, and Windows.

- **MAF (Mobile Application Framework)**
  Provides reusable components to be used with native applications, including common features and functions, such as user authentication.

- **REST API**
  Enables standard HTTP client applications running in any platform (be they native, web based, or hybrid) to access SAP Mobile Platform REST services.

- **Kapsel**
  A set of SAP plugins built for Apache Cordova to develop hybrid applications. The Kapsel plugins enable the access to SAP Mobile Platform features, such as application lifecycle management, logon and single sign-on functionality, and push notifications.

Although most SAP Mobile SDK tools are built for a Microsoft Windows client, there are some tools that are specific for Mac OS—in particular, those that support native development for iOS devices.

**Mobile Application Development Tools**

The field of mobile development for the enterprise is relatively new. Although consumer applications pop up all the time, applications for the corporate user are still being developed. SAP recognizes that many of the new corporate applications will be developed by the organizations that now use SAP ERP and by independent developers, so SAP has made several tools available that can be used to develop the applications that organizations need.

In this section, we will go over some of these tools.

**SAP Gateway**

SAP Gateway is an add-on to a company’s ABAP-based SAP NetWeaver system that allows developers to expose that system’s data to other applications by creating open RESTful services based on OData standards. These RESTful services can then be accessed by web, mobile web, hybrid, and native applications via the HTTP protocol. These services can be exposed using JSON, XML, or ATOM standards.
In simple terms, any programming language that can send requests via HTTP protocol and interpret the response will be able to communicate with an SAP NetWeaver system. All they have to do is to send and receive data to an SAP NetWeaver system, which has been exposed with the use of SAP Gateway.

This means that native mobile applications built with Java, Objective C, C#, and so on can easily communicate with SAP NetWeaver systems. The same is true for web- and network-enabled applications built with Python, Ruby, JavaScript, JSP, and most other modern languages.

The person building the user-interfaced application does not necessarily have to be familiar with the SAP NetWeaver system’s data dictionary to build “killer” apps that interact with SAP’s systems; all they need is the knowledge of the OData services that have been exposed by the system connected to the SAP Gateway.

SAPUI5 libraries (which are based on JavaScript) make full use of OData services. Together, SAPUI5 and SAP Gateway form an important foundation for web and mobile development for organizations using SAP NetWeaver systems; they are tightly integrated and can dramatically increase the developer’s productivity.

**REST**

REST (representational state transfer) is an architecture for the web. The REST service receives requests from the consumer process with one of four methods—GET, PUT, POST, or DELETE—and with parameters that define what is being requested and that identify the consumer process. For each method invoked, the RESTful service performs a defined task. The REST service then returns data to the calling process, typically in JSON or XML format.

**OData**

OData (Open Data Protocol) is an open web protocol that creates a RESTful service that allows the caller process to perform a database query (equivalent to SQL’s Select, Update, Delete, etc.). The service returns data back to the consumer processes in JSON or XML formats and informs the result of executing the returns.

**SAP AppBuilder**

SAP AppBuilder is a browser-based rapid-development tool that allows the developer to build web-based mobile applications by simply dragging and dropping controls and using JavaScript to define their behavior.

Its WYSIWYG (what you see is what you get) interface creates fully-functioning applications. It leverages standard technologies (HTML5/JavaScript) using SAPUI5 and can communicate with SAP and non-SAP backend systems with the use of OData and REST services.

AppBuilder is available for Windows and for Apple OS. Figure 16.5 shows some of the features of the user interface.
HTML5 and JavaScript that can be used to build rich, web-based applications for both mobile devices and desktop computers. It uses open-source frameworks and well-known standards, such as HTML, CSS, JavaScript, and JSON.

It has a set of modern themes that can be used to build great-looking applications and rich, web-based and hybrid mobile applications. Some themes and libraries are specifically targeted to mobile devices—such as Android, iOS, Blackberry—and create applications that look and feel native.

SAPUI5 forms the basic building blocks of all of SAP’s web and mobile web–focused development tools, such as SAP AppBuilder, SAP Fiori, and SAP HANA XS applications. It is also used by SAP internally to develop their web, mobile web, and SAP HANA XS applications.

OpenU15 is the open-source version of SAPUI5, supplied under the Apache 2.0 license and available from http://sap.github.io/openui5/.

Conclusion

The demand for enterprise and work-related applications is only going to grow. SAP has been aware of this trend and has been positioning itself to help the business and developer communities deliver the solutions that they need. In this chapter, you learned:

› How to deliver content on mobile devices: web-based, native, and hybrid applications.
› About options that will keep enterprise data secure on many devices.
› About developer tools for mobile development, such as SAP Gateway, OData, and SAPUI5.

SAP professionals can only feel excited about the opportunities that this trend brings and the ways in which all technologies will converge and how much more exciting working with SAP technologies will be.

In the next chapter, we will continue to discuss tools, but this time for employees who work with enterprise information.
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