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SAP Implementation

UNLEASHED

A Business and Technical Roadmap to Deploying SAP

SAMS

SAP Implementation Unleashed: A Business and Technical Roadmap to Deploying SAP

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Introduction

Implementing SAP has always been about transformation, or letting go of old ways of doing things in favor of something newer and better. Transformation goes beyond the incremental changes an organization might adopt as it seeks to change. Instead, transformational change is synonymous with revolutionary, rather than evolutionary, change. It's about turning the corner, getting over the hump, or making the leap to a better place. Is it painful? Nearly always. Is it worth it? With a number of exceptions, the answer is nearly always yes. Implementing SAP is one of the few broad transformations that can take not only a business unit but an entire company to the next level, to a place where better information is delivered more quickly, better decisions are made, and ultimately an increased return on information (an old SAP adage that continues to be validated by thousands of SAP's customers) is realized. The trick is doing it right.

Doing It Right

The pain associated with an SAP implementation comes from several different places. End users will be changing both their tools and the way they work. Managers and other decision makers will be changing processes with which they've grown comfortable over the years. Better information will drive these new processes faster, too, bringing with them a different set of issues. And behind all of this, IT organizations will find themselves deploying and managing the most critical suite of companywide business applications they've ever seen. All this change is akin to growth; awkward crawling and hesitant walking at first, followed by a bit of stumbling and a certain amount of falling and getting back up again. Like learning to walk, implementing SAP comes with its share of bruises. Persistent organizations will get through this and see themselves grow more resilient, more self-aware, and ultimately less like the old organization. There's almost no way around all of this; transformational change has great upside down the road but is painful nonetheless.

What if you had a guide, though? Someone who had already navigated these waters and walked these paths? Wouldn't such a thing be worthwhile? Wouldn't a book authored by 10 SAP project managers, functional consultants, and technologists with more than a century of combined experience go a long way toward giving you the peace of mind you need on this journey?

That's where we come in. Our goal is to outline the business, technical, and project management roadmaps necessary to successfully plan for and complete an SAP implementation, and then fill in all the important gaps. We want you to be able to draw upon a deep pool of experience and lessons learned, comfortable in the knowledge that you not only are in good hands, but are also obviously not the first to attempt an SAP implementation. Through this book, you will crawl, walk, and run in record time. You'll make fewer

missteps and ultimately cross the finish line closer to budget and your timelines than you ever could have solo. There will still be the underlying discomfort of change, but in retrospect you'll find that your journey has been a whole lot less painful than it might have been. And you'll find that you not only did more with less, but did *better* (than your competitors!) with less, as explained next.

Doing It Better

One of the obvious facts about implementing SAP nowadays is that you're not alone. Upward of 95% of Fortune 500 companies have introduced SAP into their enterprises, as have more than 47,000 other businesses. SAP is everywhere, helping companies change the way they do business, essentially changing their world. Additionally, the information technology underpinning SAP has transitioned from a supporting role (1980s) to something that provides competitive advantage (in the 1990s), to something that also extends where and how business is conducted (2000s). Today, our information technologies are taking us to yet another place, a place where IT and the business are so intertwined and interconnected that IT *is* the business, and the business *is* IT.

None of this is a big secret. Truth be told, in such a me-too world, the increased innovation you might have been sold on relative to adopting SAP might turn out to be less of a competitive advantage than you thought. More likely, bringing in SAP and other enterprise applications nowadays will only bring you up to par with the bulk of your competitors. Enterprise Resource Planning (ERP) solutions in particular are less often the innovative game-changers of years past but rather, for many, have become the required investment necessary to merely re-level the playing field.

So, to be most effective, and to *really* raise the bar compared to your competitors who have already introduced SAP into their environments, you will need to do it better than them. You'll need to innovate beyond the business innovation that comes with implementing SAP's business scenarios and well-integrated applications. Through the very way you deploy SAP and prepare your teams to manage, use, and maintain SAP post go-live, you must find ways to innovate. You'll need to innovate on all fronts, from the way you conduct business, to technical and technology matters, process matters, and even project management approaches and methodologies; it's these innovations that together will fuel your ascent a rung or two higher than your competition.

Implementing SAP is a ton of work, to be sure. We'll help you consider and explore potential innovations at every step along the way. We'll teach you how to boldly sidestep incremental change in favor of strategic revolution—where it makes sense. We'll tell you what your competitors have already done and explain how you can do the same thing better, faster, and cheaper. Beyond this, we'll show you how to gain a competitive edge in the process—how to leapfrog your competitors in ways that really make a difference. They might talk of one day achieving operational excellence, but you'll implement processes, models, and toolsets that set the stage for not only achieving it *today* but reducing ongoing costs and risks in the process. They will speak of creating a custom application

that somehow differentiates their business from others, but you will transform your business by adopting best and common business practices to deploy an integrated and accessible set of systems that capitalizes on your unique intellectual property.

Furthering our efforts to help you leapfrog your competitors, we will give you actionable advice and real-world insight spanning everything from project management methodologies to leadership styles, the pending impact of "mega trends" such as green IT, service-oriented architectures (SOAs), virtualization strategies, automated systems management approaches, compelling computing platform refresh strategies, social networking leverage, and more.

How will you innovate? The answer depends on the role you play in your SAP implementation. No role is without opportunity for innovation. For example:

- IT architects will be called upon to design systems and solutions that meet business and IT agility needs at a reasonable total cost of ownership (TCO).
- Business process owners need to rethink how the company does business, leveraging best and common practices, templates, and approaches in the process.
- Developers and functional experts must deliver innovative solutions and approaches, creating an agile enterprise based on a balance of both new and time-tested tool sets.
- Organization designers need to work with management and delivery teams to design a purposeful post-go-live organization enabled through automation, creating lean, dynamic, and well-communicating organizations capable of rapidly achieving incremental operational excellence.
- Infrastructure teams need to deploy SAP's business applications and underlying NetWeaver technologies in such a way as to pull costs out of IT, thus freeing budgets enough to become nearly self-funding.
- Desktop support teams need to quickly assess their current state of affairs and innovate through streamlined SAPGUI deployment along with incorporating Citrix-based or SAP's WebGUI-based user interfaces.
- Existing IT shops may find it necessary to innovate in terms of the very platforms deployed for mission-critical enterprise applications, leveraging platform migrations and new technologies to transition to more strategic or cost-effective platforms.
- Job scheduling teams might find it necessary to innovate how batch processing is conducted, pulling in third-party scheduling tools that represent yet another way to innovate and create a more agile business solution.
- IT operations teams must draw upon tools they have and new SAP-aware systems management applications to create an automated just-in-time monitoring system capable of truly delivering on a single-pane-of-glass, management-by-exception vision, stabilizing headcount while simultaneously freeing up employee bandwidth in the process.

- Executive leadership and first-line management must actively and broadly encourage behaviors that build a work culture that's effective, rewarding, and "contagious."

To this last point, contagious cultures and organizations share a number of attributes. They're seen as outstanding places to work, and therefore draw in talent from the company's internal employee pool. Because of this, contagious cultures and organizations suffer little from retention problems. They're naturally innovative, spawn new opportunities for growth, lead the larger organization in terms of adopting and successfully embedding new technologies and business solutions, and act as role models for the rest of the firm. We'll show you what it takes to create and maintain such a contagious culture, beginning with your SAP project teams and culminating in your operational post-go-live staffing models and support organizations.

Our Audience and Approach

So, you're ready to plunge into the world of SAP! Or, maybe you're in too deep already, perhaps even past that critical point of go-live, and need to step back and review where you are and how you got there. Perhaps you're soon going to be involved in a new SAP implementation, or are considering a support or management role at an existing SAP site. On the other hand, you might just be curious about what an SAP implementation is all about. In any case, you have come to the right place.

Our target audience is broad and includes those new to SAP (users, managers, executives, consultants, educators) as well as those looking to simply broaden their view of the SAP solution landscape. Our intention is to provide an end-to-end look at the SAP solutions and technology. After all, there's so much going on with SAP's products, naming conventions, and direction that it's hard for seasoned insiders and other experts to keep up, much less those on the outside looking in.

We suspect that many readers will use this text as a baseline of sorts, comparing their own SAP plans and implementations to what we have provided, looking for new ideas, or alternatives for approaching the problems that are common to all system implementations. Given this commonality, we believe our readers fall into a number of general categories including:

- Decision makers, including a firm's executives, key stakeholders, project managers, and others in key leadership positions who need to understand what SAP is, how it is deployed, what an implementation entails, and what a basic roadmap with milestones/critical path items looks like (all without getting bogged down in the technical details, if they want to avoid doing so).
- Business analysts, SAP configurators, and power users who are involved with converting legacy business transactions into cross-application enterprisewide business processes connecting a myriad of business communities to one another. These are important folks, as they will essentially make SAP useful to a company's end-user communities.

- Information technology professionals, the people who need to plan for, design, test, and deploy the technical infrastructure upon which SAP will run. This is a huge community of potential readers both familiar and unfamiliar with SAP. They'll love the detail in this book, and appreciate how we connect the IT side of a deployment back to the business needs for implementing SAP in the first place.

More specifically, if you fall into one of the following roles, you'll benefit from this book:

- Executive leaders tasked with implementing, transforming, or maintaining SAP environments
- Stakeholders seeking to understanding the breadth and depth of an SAP implementation
- SAP project managers and various business and IT leaders tasked with discrete subprojects related to implementing, supporting, testing, tuning, or training
- Business and application consultants, business process owners, and others tasked with supporting or transforming business processes on behalf of an organization
- SAP technology consultants, including SAP Basis, NetWeaver, and other engineers and specialists asked to architect, size, configure, and implement SAP solutions
- Database administrators (DBAs) and storage area network (SAN) consultants with a need to maintain their piece of the SAP enterprise pie, or simply expand their knowledge
- Traditional data center operations and infrastructure management specialists asked to step up and assist in developing or maintaining an SAP IT shop
- Network administrators, systems administrators, data center power/utility technicians, and others with similar roles supporting the very groundwork upon which the SAP solution depends
- Others internal to (or seeking employment with) an organization, interested in learning the process a company should follow in selecting, designing, and deploying SAP
- Technical individuals who are new to (or want to be a part of) the world of SAP—individuals who may be supporting similar enterprise applications or mission-critical environments (mainframes/midframes and more) and who want to make a career move into learning and supporting SAP
- Nontechnical business managers/supervisors who are soon to be thrust into an SAP project or environment

A key strength of this book is that it contains enough material to satisfy beginners, intermediate readers, and long-time SAP experts without "dumbing down" the content. It's a hard balance to strike but something your authors have kept in mind throughout the writing process. Another strength is the holistic approach we have taken relative to

explaining implementation projects, particularly the three-lane roadmap (business/functional, technical, and project management) that should not only broaden the appeal of this book but make it more relevant to a wider audience. To make sense of everything SAP, the book has been crafted along the lines of a project plan—our central roadmap is therefore steeped in project management. Along the way, we have generously peppered in real-world observations and practical examples to give substance to the journey. As we mentioned earlier, in this journey lies the core value that we provide to you—the chance to benefit from the experiences of others. There's no value and no reason to reinvent the wheel. Frankly, most everything you need or want in regard to an SAP implementation has already been done, and done well, by someone else. Your job can be much simpler and certainly less risky because of them.

Whether you are implementing an SAP supply chain system, customer relationship management system, or a portal to front-end your existing business applications, there are certain tasks that must be planned for and executed across the board. If you're interested in minimizing costs and managing your critical path to a successful outcome, all these tasks must occur in a certain logical order or sequence. With all of this in mind, it seemed rather obvious that a roadmap built first and foremost around a "project plan" made the most sense for the book.

For beginners joining a new implementation project team, we suggest that you read the book sequentially from the first to the last chapter. If you find yourself in the middle of a project, though, feel free to jump to the chapters that best fit your project or timeline status. Of course, in doing so you might well "skip" over knowledge that could very well prove useful, too. We suggest quickly reviewing the Table of Contents, therefore, to determine if it makes sense in your particular case to go back and review any passed-over content. If you're more experienced, you'll find it pretty easy to skip around and read chapters as they apply to you. To keep you reading (rather than flipping back and forth between the appendixes and text), we've taken care to define acronyms in each chapter. This approach is much different from that used in most books, in which definitions and acronyms are explained only the first time they're introduced; we hope you find our approach useful.

Addressing the Real Challenges of SAP Implementations

In a world filled with books on SAP (those of us who work with SAP for a living like to hear it pronounced "ess-aye-pea," by the way), this book is unique. In our review of numerous "how to" and other SAP planning guides over the years, we continually noticed how little attention was given to addressing the *real* challenges related to deploying an SAP business solution or enabling technology. For example, little attention was ever given to

- How a particular leadership style may be appropriate given a firm's unique competitive landscape, SAP applications, business environment, and IT skills/competencies

- How to structure SAP business teams, the SAP technical support organization, and the overall project team
- How to build "buy in" with the business folks—the owners and end users to whom the system will eventually be turned over for day-to-day productive use
- How and with what to capture and house all of the information necessary to conduct an SAP implementation
- How to encourage apples-to-apples SAP sizing exercises, and then evaluate each vendor's solution approach on a level playing field
- How to determine realistic high-availability and performance requirements
- How to plan for and develop an SAP data center
- What to include in an SAP operations manual
- How to plan for and execute functional, regression, and load/stress tests
- How SOA fits into the big picture of an SAP implementation
- How to prepare the SAP technical infrastructure and "SAP Basis" teams for the tasks that need to be addressed to actually make it to go-live
- What mix of systems management tools and applications might work best for an IT organization tasked with managing and monitoring SAP
- How to prepare the SAP operations team in terms of staffing and post-go-live tasks

We address all these issues, and much more, from an SAP perspective. And by following the methodical approach outlined earlier, we promote a timeline that coincides nicely with SAP's ASAP methodology and newer SAP Solution Manager–inspired roadmap. This allows project management tasks, functional/business process development, and related technology deployment milestones and resource requirements to be mapped out in lock-step, one with the others.

How This Book Is Organized

As you can tell by now, there's much to cover! This book is organized into several high-level sections, or *parts*. Part I, "Setting the Stage," lays the groundwork for the book and comprises the first six chapters. The bulk of this material is focused on identifying and then marrying business vision with SAP's business applications and something we call *solution vision*. Part I concludes with financial considerations and a chapter on capturing all of the project's inputs, assumptions, and decisions in a knowledge repository.

Part II, "Getting Started," focuses initially on the project management office and project staffing, and then turns to matters of leadership. Next, we address the technical matters

critical in setting the groundwork for your SAP hardware and other technology infrastructure, though not before addressing what it means to create a highly available and disaster-tolerant solution.

In Part III, "SAP Realization/Functional Development," detailed technical planning and installation steps are followed up by chapters focused on functional development, tools, best practices, change control, SOA, and testing—all written from a functional or business perspective.

Part IV, "Planning for Go-Live," concludes the book and addresses infrastructure, technical change control, load testing, and essential operational considerations that must be addressed well before the SAP system is ready for productive use. The final chapter goes so far as to outline the events and tasks immediately preceding SAP go-live—tasks that should help create a smooth transition from the firm's old way of doing business to its new, SAP-enabled enterprise business solution.

What Is Not Covered

Although the functional programming, configuration, and work required to make SAP actually *useful* after it is installed is paramount to the overall success of any SAP implementation, we do not go into the details of *how* to configure SAP here. Instead, we leave most of the information related to configuration as well as using SAP's programming language, Advanced Business Application Programming (ABAP), and its more recently supported development option, Java, to the many books, articles, and other documents out there aimed squarely at this kind of activity. When appropriate, we discuss functional development, testing, and other related tasks as they impact our discussions from an SAP implementation perspective, however.

In addition, though we give the topics of business vision and solution vision a great amount of attention, we pretty much assume that you have already selected SAP (or it has been selected for you!) as your enterprise solution package of choice. Certainly, there are a number of choices in the enterprise solutions arena—including products from Oracle, Microsoft, The Sage Group, Lawson, Epicor, and other providers. Pure Internet-based plays and new delivery paradigms such as software as a service (SaaS) and cloud computing offerings are changing the landscape as you read this. However, SAP continues to command the lion's share of enterprise implementations, even recently surpassing a number of "best of breed" specialty applications in terms of popularity. Some of these will be discussed later, but if you are looking for a book that will help you determine *which* enterprise application is right for you, you need to keep looking; outside of basic business vision and application considerations outlined in Chapters 3 and 4, this book presupposes that SAP has been chosen for your enterprise business computing needs.

Real-world Case Studies, Lessons Learned, and Techniques

When we initially discussed this book project, we really liked the idea of sharing the lessons we've collectively learned over the past 10 to 15 years. Giving the book a "real world" flavor from several roadmap perspectives—project management, business/functional development, and technology—was our first concern. For this reason, we have included practical examples, actual customer lessons learned, real-life explanations, tips and tricks, common mistakes you need to avoid, and much more. In our view, material such as this will help the book to not only stand out in a crowd but create a worthwhile reference that's pulled out and *used* time and again. We also wanted to provide a mechanism for applying what you've read in a way that really drives it all home. To this end, we are particularly fond of the ongoing case study we have prepared for you. It starts in Chapter 1 and weaves its way through the entire book. An amalgamation of many different projects we've been a part of, it includes typical issues, questions, and problems—all of which naturally highlight each chapter's material. Who better to learn from than those who have gone before you?

In a nutshell, then, to keep you grounded and to present a well-rounded perspective on SAP implementation, each part, if not each chapter, includes material focused on

- Project management processes, oversight, and decisions
- Executive and other decision maker tasks
- Business or functional business process configuration-focused tasks
- Technology-focused decisions and tasks
- SAP developer/programmer-specific decisions and tasks
- Matters of interest to the end-user community
- Opportunities for innovation

In conclusion, our experiences are real. They reflect the real challenges embraced and conquered by many different SAP enterprise customers spanning many different industries and geographies. Not all of our implementations have been wildly successful, but, with only a handful of exceptions, we have indeed managed to change and essentially help our customers reinvent their companies through implementing SAP. Our best practices, common practices, lessons learned, and laundry list of problem areas and issues are gleaned from literally a thousand implementations, upgrades, and migrations, including the latest NetWeaver-enabled SAP business solutions. So read on, and position yourself and your company to get it right the first time, do it better than your competitors, and reap the benefits that only 10 guides singularly focused on one thing—helping you—can provide. Thank you again for picking up this book and adding it to your collection.

CHAPTER 1

What It Means to Implement SAP

IN THIS CHAPTER

Implementing SAP continues to be one of the most complex undertakings in the world of business applications and information technology (IT). Based on the sheer number of new implementations in the past several years, the rewards apparently continue to outweigh the effort. SAP enables companies to transform themselves and, in doing so, remain both viable and competitive. To understand and appreciate what this means, though, it is necessary to take a couple of steps back and investigate SAP from a company perspective, a historical perspective, and in terms of roadmaps to implementation.

Welcome to SAP Implementation

The core of the material you are about to read stems from more than a hundred man-years of SAP implementation experience across several hundred midsize and global SAP implementations. Our goal in writing this book is to bridge the gap between selecting an SAP business application or solution and actually going "live" on the application (the act of which makes your investment in SAP finally usable by end users who will spend their work days on the new system). It is our hope that you will use this text as both a reference tool and an informed guide, helping you to steer clear of the hazards and pitfalls common to so many SAP implementations. A good roadmap is multilevel, comprising not only a path outlining how to get from here to there but also a set of markings describing the topology of the terrain. We want this book to be your roadmap.

The Changing Business and IT Landscape

SAP AG (AG is the German equivalent of the term "incorporated") is changing the world around us. The rapid advances in IT hardware and software, and in particular SAP AG's ever-growing umbrella of solutions, have had a profound influence on the way companies today access and manage their data. The role SAP has played in this regard, especially in the past few years, has been pivotal from several perspectives. When faced with competitive threats from arguably its best partners, hot best-of-breed new applications, and innovative methods of extending and hosting ERP (through service-oriented architectures [SOAs] and software as a service [SaaS] offerings, for example), SAP sought to embrace the best of all worlds and evolved to meet its customers and stakeholder needs. SAP AG's growing market share combined with its raw penetration of the Forbes Global 2000 made for a great combination. And recent targeting of the small and medium enterprise (SME) market has opened up new significant and growing revenue streams for SAP. All told, SAP is formidable and here to stay.

One-Stop SAP Shopping

In wishing to share our own experiences regarding implementing SAP, we asked ourselves, "What is the number one reason for putting together this book?" The simple answer: one-stop shopping for "SAP implementation." We have put into this book almost everything a company needs to know or address in terms of planning/organizing for an SAP implementation. Without this book, you would have to hunt through a hodge-podge of SAP installation guides and other papers, SAP web content, miscellaneous documents and articles published by others, and a chapter here and there in the few really good texts that exist today. Instead of starting from ground zero, as so many SAP customers do, you will be able to put together custom project plans, implementation schedules, management justification, and more in just a few days. This is the book we have been waiting for someone to finally write.

In addition, given our breadth of experience, this book comes to you both broad and unbiased. The decision has been made to go with an SAP solution, knowing full well that the risk on the business side is so high that there is little room for risk in the technical implementation. We provide a "soup to nuts" approach relative to how an SAP implementation should be performed beginning to end. We review the different SAP components and modules, how to translate business vision into business processes, and, in turn, how to translate business processes finally into useful SAP functionality. In different chapters of the book, then, we are quick to address challenges relevant to the following:

- Organizational changes that accompany an SAP implementation will drive sweeping changes across much of the company, from how it conducts business to how the various functional and technology departments are structured to work together.
- Meeting the project's return on investment (ROI) goals in a timely fashion will impact everything from planning the solution to developing it, testing it, implementing it, and more.

- The IT group will tend to think of this as an IT project, and initially will be unaware of the integrated business/technology nature of SAP and how it necessitates a tight partnership between "the business" and IT group.
- At the end of the day, the IT department will be faced with implementing a technology solution before the scope of the business solution has crystallized for everyone, and despite the fact that the SAP solution itself is unfamiliar.

Thus, the IT group will benefit from all the help they can receive from people like us who have already made the journey, know the issues, and have dealt successfully with an SAP project's uncertainties. This book will go a long way toward providing the processes, insights, and wisdom that will enable a firm implementing SAP to do the job right, and on time, the first time.

An Unbiased View

As SAP technology consultants, developers, and project managers, our team established years ago that a solution-agnostic approach to SAP consulting kept all of us working. We let the marketing, technology, and engineering folks do their thing while we focused our own efforts on implementation and taking care of our customers. This meant configuring our customers' new, redeployed, or best-of-breed hardware and software components into *solutions*, regardless of the different technology vendors and partners involved. Indeed, we considered ourselves actually quite fortunate when we got involved early enough in a project to allow us to have a hand in the project's technical architecture, design, and selection. In light of this, we have worked with all of the major hardware, operating system, and database vendors upon which an SAP solution is installed. And when we were engaged in SAP development projects, the platform and partners meant next to nothing—configuring business processes is done the same way regardless of whether Hewlett-Packard (HP) or Deloitte does the configuration, and regardless of whether the underlying computing platform is based on HP-UX, AIX, Windows, or Linux.

Finally, we understand that the only reason a firm implements SAP in the first place is to achieve business objectives—to increase competitiveness, identify and capitalize on customer purchasing trends, reduce supply chain costs, make information more widely available across the company, enable better service to customers, improve decision-making capabilities, enhance resource planning, and ultimately improve the execution of the firm's various business processes. In summation, then, the technology and development tools required to implement SAP are simply a means to an end, and not the end itself. Because we realize this, you'll find this to be a better balanced book than otherwise possible.

Why Implement SAP: Enabling Innovation

Introducing SAP into an organization is time consuming, expensive, and subject to creating a whole lot of new challenges. After all, not only will the new system's end users need to be retrained in how they do their job, but the IT organization will need to ramp up on supporting new applications and the various technologies that underpin them. Why go to all this trouble?

The answer is *competitive innovation*, or the ability to introduce the kind of change that gives a firm a leg up on its competition. SAP also calls this business innovation, though its term is actually a bit more limiting than what we've seen in the real world. Innovation with regard to SAP comes in two forms—innovation inherent to introducing new SAP business applications, and the innovation that can be brought to bear relative to how SAP is implemented, deployed, and managed.

The first type of innovation relates to how the system will be used to effect companywide change that presumably reduces operating costs, increases company-internal synergies, helps uncover new revenue streams, and so on. With the exception of introducing ERP (which arguably is more about keeping up with the Joneses than introducing a competitive advantage; see the sidebar for our perspective on this), implementing new SAP business applications will help you to increase your top line and decrease your cost of doing business, or enable other systems to do so.

ERP Implementation Innovation

Almost every company in the Forbes Global 2000—and many near misses—has introduced enterprise resource planning (ERP) systems in-house. To be sure, there's a lot more than just SAP ERP being implemented out there. Oracle and Microsoft have robust ERP offerings, as do several midsize and smaller niche players. Thus, most experts speak of implementing ERP as being less about "changing the game" and more about simply leveling the playing field.

ERP as a broad business solution is no longer perceived as innovative. Yes, the opportunity exists for innovative business processes and practices to be introduced, but implementing ERP is generally perceived as a necessary component of doing business and less of a strategic differentiator than 10 or 15 years ago. Fortunately (for SAP and tens of thousands of customers around the globe) the same can't be said of the robust supply chain, product lifecycle, and customer relationship management business applications available today—applications that still hold the promise of changing the game for those firms who introduce and leverage them for competitive advantage.

The second form of innovation—implementation innovation—is a bit less obvious but just as easy to understand. For starters, a firm that implements a new business application and processes less expensively than its competitors enjoys a better relative capital advantage. If the same company can set up its ongoing IT operations and systems management more cost-effectively, it'll remain in better fiscal shape year in and year out. Finally, if that same company can introduce nimbler infrastructure and IT processes than its competitors, the company's business will be able to change direction and go after new markets more quickly than its less-agile competitors. Combined, such a company will enjoy a significant advantage overall—the kind of advantage that keeps a company in the black and people employed.

Our Take on "Best Practices"

In SAP circles, there's much talk of leveraging best practices. Why? For every thousand implementations, there are nearly a thousand ways to implement SAP but perhaps only several *really good* ways or a single *best* way. In the course of consulting, however, we have determined that there tends to be one or two "best" or "preferred" methods of doing a particular task, or addressing a particular problem.

It is these nuggets of insight and knowledge that we hope to pass on to you, our readers, within the larger scope of covering an SAP implementation end to end. Most of the concepts, practices, and approaches outlined in this book are the result of years of experience designing, deploying, and supporting SAP implementations enabled by technology platforms from Compaq, Digital Equipment Corp., HP, IBM, Sun, and Unisys.

Like SAP AG, we too have endured many changes over the past few years, and have grown both stronger and wiser in doing so. Our projects boast some of the largest, fastest-to-production, and complex business-enabling implementations in the world. We are experts in designing and deploying cost-effective SAP business solutions, pushing the envelope when it comes to embracing new computing paradigms, computing platform groundwork, development tools, and project management approaches alike.

Common Practices

Outside of the two or three preferred ways to plan for, complete, or control a task—whether business or technology oriented—there are oftentimes many more common ways of doing the same thing. These *common practices* stand apart from their best-practices kin in at least one important way—they tend to strike a significantly better balance between what might be deemed best in class and what is deemed acceptable. The classic trade-off cited by those executing common rather than best practices is cost. Best practices are nearly always more expensive to implement than common practices. Common practices fall into the buckets of "good enough" or "good for now" because they do a better job of balancing cost and capabilities. When these "good enough" practices become commonplace, they become de facto common practices.

The Four Priorities of an SAP Implementation

Regardless of whether a practice is "best" or "common," it may be grouped into one of four general areas. We refer to these as the four priorities or primary characteristics of implementation:

- **People**—End users as well as IT professionals
- **Processes**—Business, technology, and project management
- **Technology**—Relative to its adoption and how it enables business innovation

- **Money**—Budgetary realities, ROI considerations, and total cost of ownership (TCO) targets

Our parallel implementation roadmaps line up well with these four priorities, all of which must be addressed. That is, attention to only one or a few of these priorities will result in a failed implementation—all four need to be addressed and *balanced* to reflect a firm's unique business and technology landscape. We like to think that the last priority—the money component of an implementation—is perhaps the most central priority of all four, though, because it enables or limits the other three, and itself is limited. Don't misunderstand this point, though. Big budgets do not necessarily equate to successful implementations. At the end of the day, success is found in how money is spent (and saved, or recouped afterward) relative to an implementation. We will do our best to ensure that all four of these areas are well covered in each chapter, as appropriate, along with relevant best practices and common practices. It is our intent to help you build an understanding of the problems and pitfalls you might encounter, and how you might best rectify or avoid them altogether as you march down the road to a successful SAP implementation.

As such, we view this book as simply an extension of our own SAP consulting work, an amalgamation of insight and experience bound together for your benefit in one place. You are now our customer, and we are your (quite inexpensive, thank you) SAP consultants. Given that the efficient and proper use of external consultants is one of many keys to a successful SAP implementation, you're already well on your way to success just by leveraging this book. Nice job.

A Primer on SAP AG and SAP

SAP AG refers to the name of one of the largest software companies in the world, often referred to simply as SAP. The company, consisting originally of ex-IBM folks with a vision of creating an integrated enterprise software solution, is based out of Germany and has been in business since 1972. SAP is also the tag given generically to software created and marketed by SAP AG. The company's most popular application package by far was called SAP R/3, which competed in the *collaborative business solutions* category of software. It was designed to facilitate business operations such as order entry, materials and warehouse management, logistics, sales and distribution, financial and asset accounting, human resource management, and more. Today, SAP R/3 continues to live on at thousands of customer sites, though many of SAP's customers have deployed one of several follow-on ERP products.

Other applications created and marketed by SAP have become quite popular as well. We will cover many of these in detail later, but suffice it to say that SAP has offerings in data warehousing (SAP NetWeaver Business Warehouse, which includes Business Information Warehouse, or SAP BW), supply chain management (Advanced Planner and Optimizer, or SAP APO), customer relationship management (SAP CRM), product lifecycle management (SAP PLM), business-to-business procurement (Supplier Relationship Management, or SAP SRM), and much more. Today, it can be safely said that if there is any system or software

need in the enterprise, SAP probably offers a product to fill that need. This is a much different scenario from a decade ago, when SAP was a synonym for a single business application, namely SAP R/3.

A History Lesson

A quick history lesson is in order before we go further. SAP, like its biggest competitors (and partners, incidentally), Oracle and Microsoft, is a business application vendor. All three companies develop and sell software geared toward enabling firms to conduct their day-to-day business. Each provides enterprise-class business software, solutions for small and midsize businesses, platforms for web and application development, software for integrating different systems into one another, and more. SAP comes to the software table from the application side of the house, whereas Oracle has its roots in database management systems and Microsoft is best known for its operating systems and office productivity suite.

SAP was founded to bring forth a novel idea: to develop a software package that integrated and combined a company's myriad business functions together in a manner that reflected business or industry best practices. In this way, a company could replace 10 different business systems of record—such as financials, warehousing, production planning, and so on—with a single system of record, and in the process gain the synergies and communication benefits inherent to maintaining a single version of the truth. Their idea grew into what soon became Systems, Applications, and Products in Data Processing (SAP), or in German Systemanalyse und Programmentwicklung.

The original ex-IBM engineers quickly delivered on their vision to create a multilingual and multinational platform capable of being easily reconfigured from a functional perspective (to enable flexible business processes) as well as from an underlying information technology perspective. Within a decade, SAP was gaining market share through a groundswell of activity propelled by the software's capability to establish standardized business processes in large, complex organizations. After another decade, the company realized growth due to its business application's platform independence, particularly its capability to allow organizations to migrate away from proprietary mainframe solutions to less-expensive infrastructure choices. All the while, SAP's capabilities matured and its market share continued to grow. Today, SAP supports more than 40 languages, 50 currencies, nearly 30 industry solutions, and more than 20 different combinations of popular hardware platforms, operating systems, and database releases.

In less than 20 years after its inception, SAP not only was Germany's top software vendor but was giving IBM and others a serious challenge in the enterprise marketplace; new, large entrants to the enterprise software field emerged during this time, including Baan, Oracle Corporation, PeopleSoft, and JD Edwards. Soon afterward, smaller players began gaining ground as well, including Great Plains and Navision. Though still widespread, mainframes had simply grown too cumbersome and expensive for the majority of companies and other large organizations to deploy and operate. Instead, IT organizations found that smaller, UNIX-based hardware platforms represented better value, while databases from vendors such as Oracle and Informix offered nice alternatives to the old mainframe database offerings.

By the mid-1990s, when SAP began supporting Microsoft Windows and SQL Server, and soon afterward Linux, SAP's place in the enterprise software market was firmly planted—the company's founders had truly delivered on their vision of a multinational, multilingual business solution capable of running on diverse platforms operated and maintained by equally diverse IT organizations. SAP changed both the business and IT worlds faster than anyone would have dreamed possible only a few years earlier. Today, SAP solutions serve more than 82,000 customers across more than 120 countries. And with employees numbering close to 52,000, and a partner ecosystem of several hundred thousand, it's safe to say that SAP is one of the world's largest and most successful employers.

SAP Business Suite Components: The Big Picture

Back in the heady days of 1999 or so, when everything was "dot-com this" and "dot-com that," SAP was already years ahead of the game. R/3 had been Internet-enabled since the introduction of version 3.1G, and the timing was right for SAP AG to introduce a new e-enabled vision of its growing product line. Out of this vision came *mySAP.com*, an umbrella term used to refer to the entire breadth and depth of SAP's e-business solutions and products. Today, mySAP.com has evolved to reflect a broad collection of business solutions (or *application families*)—the SAP Business Suite.

The SAP Business Suite can be thought of as an umbrella encompassing a wealth of general business applications or functionality that represents in turn additional umbrellas underneath which lie specific point products. That is, underneath the SAP Business Suite umbrella are the actual software products that will eventually be used by an end-user community. These software products are generically referred to as *components*. The SAP Business Suite currently comprises five general business application families (see Figure 1.1):

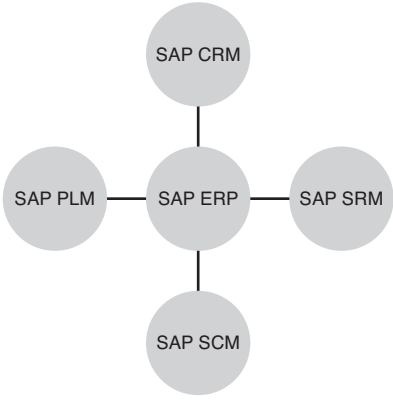

FIGURE 1.1 The SAP Business Suite.

- SAP ERP (Enterprise Resource Planning)
- SAP CRM (Customer Relationship Management)

- SAP PLM (Product Lifecycle Management)
- SAP SCM (Supply Chain Management)
- SAP SRM (Supplier Relationship Management)

How to Speak SAP: Terms and Terminology

We have already covered quite a few terms and acronyms. However, especially if you are new to or a bit rusty in using SAP's general terminology, you should understand the following list (don't worry about memorizing this right away—to keep the book useful to all levels of readers, we will continue to spell out acronyms and explain key terms throughout the book):

- **SAP component**—One of SAP's business applications or other products (as opposed to an umbrella term that might instead reflect a group of applications such as SAP Financials).
- **Instance**—An "installation" of an SAP product that equates to an SAP component with its own set of work processes.
- **SAP ERP**—An online transaction processing (OLTP) system, the most popular and prevalent SAP component. It includes functionality such as Asset Management, Financial Accounting, Plant Maintenance, Production Planning, Quality Management, Sales and Distribution, Materials Management, Business Work Flow, and more.
- **Landscape**—The collection of systems supporting a single solution (SAP component) such as CRM, PLM, SCM, and so on. Note that each solution requires its own SAP system landscape.
- **Three-System Landscape**—Typically, each SAP solution requires a development environment, a quality assurance/test environment, and a production environment.
- **Central Instance (CI)**—The main "SAP" installation in a system (as opposed to the "database server" installation or dedicated application server instances, and so on). The CI is responsible for managing locks, interserver messaging, and queuing and can be thought of as SAP's executables or binaries.
- **System**—A collection of SAP instances. For example, an SAP ERP system may consist of a database instance, an SAP CI, two batch server instances (for processing batch or background jobs as opposed to real-time business transactions), and five application server instances (the instances used by end users executing their day-to-day work).
- **Client**—A legal entity or "business" within an instance—this is what end users actually log in to with their unique user IDs and passwords.
- **SAPGUI**—SAP's "classic" graphical user interface, which provides a Windows-like look and feel. Other accessibility options exist as well, including a number of web-based user interfaces.

Other terms, such as *SAP NetWeaver* and *SAP* in particular, require a more in-depth definition, even for this introductory chapter, and are covered in the next section. For a truly comprehensive list of SAP acronyms and terms, refer to Appendix B, "SAP Acronyms."

SAP NetWeaver: Enabling Business Solutions

Whereas SAP's business solutions (by way of the SAP Business Suite) represent the applications to be used by a community of end users, there's another set of SAP technologies and products developed to *enable* these solutions. Labeled under another umbrella called SAP NetWeaver, these are SAP's core underlying technology offerings that make it possible to tie together Business Suite components into a unified solution (see Figure 1.2). They include

- Portal and collaboration components
- Business intelligence, knowledge management, and master data management components
- Application platform development tools (J2EE/Java and SAP's proprietary Advanced Business Application Programming, or ABAP)

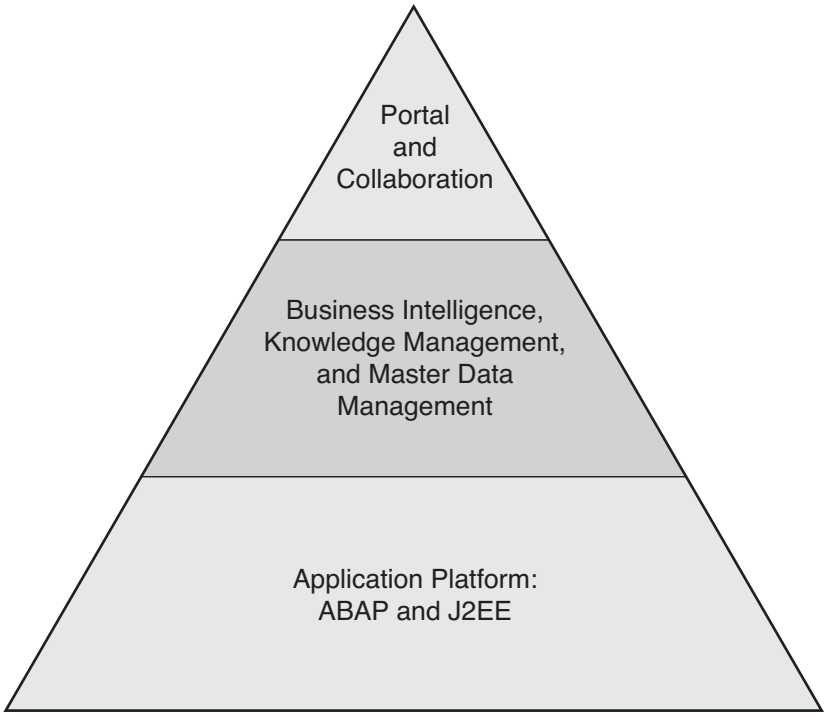

FIGURE 1.2 SAP NetWeaver components.

SAP's NetWeaver Application Server, formerly Web Application Server (WebAS), acts as the technical foundation for most of SAP's components. Through the NetWeaver Application Server platform, SAP not only supports a variety of database and operating system alternatives but also enables communication with external applications created with Microsoft's .NET or IBM's WebSphere development tools. This gives SAP the capability to create extended enterprise solutions crossing diverse product and application classes.

SAP Component Naming Conventions

The underlying software components of any given solution are neatly prefaced with the simple term "SAP" or "SAP NetWeaver," as in *SAP ERP HCM* (SAP's Human Capital Management solution within the ERP component) or *SAP NetWeaver BW* (SAP's business intelligence offering). As you can tell, these products fall under the overall umbrella of either SAP NetWeaver components or SAP Business Suite components. To complicate matters, though, the term SAP is often misused to refer to any business or technical component developed by SAP. For the remainder of this book, we will continue to distinguish between SAP's Business Suite and its NetWeaver offerings. Keep in mind that others will use the term "SAP" to refer generically to any SAP product or component, or to the company itself.

Roadmaps to SAP Implementation

Written from parallel business, technical, and project management perspectives, *SAP Implementation Unleashed* provides you with a high-level roadmap in conjunction with the necessary level of detail across multiple disciplines to set you up for SAP implementation success. We've accomplished this by bringing together matters of business, technology, and project management in one book. We outline these roadmaps in the following sections.

Business Roadmap

Let's face it, the reason an organization introduces SAP has nothing to do with a love for cool technology or global projects. SAP implementations are about satisfying the business's need for business functionality by deploying a business application. For this reason, it's imperative that the business weighs in on the implementation up front as well as throughout the project. Up front, the business must ensure that its needs are being heard and understood by executive management and translated into an appropriate business vision.

After a valid business vision is established and agreed upon, it's time for business software experts to marry the firm's business vision with an application (or suite of applications) capable of actually delivering on the vision. For example, if you have a vision of real-time collaboration and visibility into your product lifecycle (your business vision), application architects and other experts should be able to translate that vision into specific SAP applications and components (or applications and components from Oracle, Microsoft, and a host of midlevel and niche players in the business applications market).

Beyond the initial business vision development and alignment, it remains paramount to an SAP implementation's success that this vision be validated and tweaked as the implementation progresses. Why? Because we don't live in a world where things stand still for the year or two it takes to introduce a complex business application. The marketplace will change, after all, as will the firm's financial, market, and other positions. Strategic vendors and suppliers may change. The firm's appetite for business transformation may change, too; for example, the firm might change its strategic direction or be acquired by another firm with a different view of the future. In all of this, it is therefore important to validate that the implementation's progress lines up with the initial vision plus or minus any changes made down the road. Just as critical, the intersection of the firm's business requirements and strategic technology architecture deserves attention, the latter of which is outlined next.

Technology Roadmap

Just as business requirements need to be not only understood up front but validated and tracked as they change, so too do a firm's strategic technology architecture decisions. Why? Because technology enables firms to conduct business. And just like the business, technology changes over time (as does a firm's appetite for and ability to digest new technologies). Therefore, deploying SAP business applications is impossible without a proper understanding of and commitment to the system's underlying technologies and infrastructure. The combination of these technologies is called by some the *SAP computing platform*, *SAP solution stack*, or simply the *SAP technology stack*. Others refer to this collection of technologies by an old SAP term, *SAP Basis*. Regardless, all of these terms refer to the technology foundation as well as the actual SAP technical installation upon which all development activity and productive operations rely (and for our purposes here, these terms should be treated as interchangeable).

To be sure, many of the challenges related to how an SAP implementation is perceived after go-live fall back to the technologies that have been deployed and how well they've been brought together to provide a well-performing, highly available and agile business system. Integrating all the technologies necessary to pull off a successful implementation is a major achievement. These technologies come together to create an implementation-unique SAP technology stack; the stack is essentially the various "layers" of infrastructure and technology that sit one atop the other in support of an SAP solution, like the different tiers or levels in a three-layer cake. Of course, the SAP "cake" is much higher than simply three layers, and includes the following:

- Physical facilities, such as a computer room or other data center hosting site
- Power, cooling, and other utility-based core service layers
- Physical hardware mounting and racking layer
- Server and disk subsystem hardware layer
- Firmware layers associated with specific hardware
- Operating system (OS) layer

- OS drivers, service packs, updates, patches/fixes
- Database layer
- Database drivers, service packs, updates, patches/fixes
- SAP application layer, which in and of itself consists of multiple layers
- Internet-enabling layer
- SAP accessibility layer, including desktops, laptops, and other devices used to access an SAP solution

Each of these layers can be further broken down into more detailed layers. For example, server hardware covers the individual servers supporting an SAP solution. Drilling down deeper, we find specific memory, CPU, I/O, and other server hardware subsystems or layers, too.

Furthermore, multiple solution stacks typically exist in any given solution. For example, an SAP ERP solution hosted in a data center might consist of IBM Regatta servers running the AIX operating system underneath an Oracle 11g relational database, which in turn hosts an SAP NetWeaver BW business application. In the various front offices, the system's end-user community might rely primarily on a laptop-based technology stack composed of an HP Pavilion running Microsoft Windows Vista, Internet Explorer 7, and the SAPGUI version 7.1. Some of the offices might leverage a Citrix-based solution for SAP access and thus depend on a specific Citrix XenApp technology stack to gain access to the same SAP NetWeaver BW system. Obviously we are interested here in SAP's technology solution stack, but you can apply this same approach to any technology or solution. That is, Microsoft Exchange Server 2007 has its own unique solution stack, as does an Oracle CRM solution or a custom mainframe-based billing application. The enterprise solution differs, and the technology stack will certainly differ, but the approach to building a supported and well-performing solution remains constant.

As you might guess, technology stacks not only are all around you, but are as numerous as they are complex. Perhaps the greatest challenge and greatest achievement is assembling a particular technology stack that both is supported by all the various technology vendors involved in the solution and operates well. Assembling such a supported configuration is by no means trivial! This is one of the reasons why so much time is put into vendor and overall technologies selection—minimizing the number of technology players while bringing together a supportable and well-performing end-to-end solution is the ultimate goal. For these reasons, developing and managing a sensible business-enabling technology roadmap plays a central role throughout this book.

Project Management Roadmap

The project management roadmap serves to wrap up the business and technology roadmaps necessary to implement SAP. It's the glue that cements everything together in a cohesive, manageable manner. Project management enables process discipline, schedule

management, and resource management to be effectively applied to an SAP implementation. Together, all three of these roadmaps pave the way to a successful implementation. But it is the project management processes inherent to the roadmap that give the project shape, make it manageable, and therefore make a successful implementation achievable. As such, the project management roadmap is without a doubt the central or most important roadmap—nothing good is possible without it.

Summary

This first chapter answered questions related to what SAP is, its history, key terms, and how SAP may be leveraged to usher in for you a new age of enterprise integration and information sharing.

To this end, we touched upon the difference between the SAP Business Suite and SAP NetWeaver, differentiated between common and best practices, and outlined the three roadmaps to implementation. This should position you, our readers, to not only hit the ground running, but to do so with the confidence that thousands of installations before you have already laid similar groundwork—paving your road to SAP success.

Case Study: Getting on the Same Page

You've been employed by the executive committee of HiTech, Inc., a global provider of technologies and services, to introduce SAP NetWeaver and SAP ERP into the firm's North American operations. The CEO was most impressed with your perspective that SAP requires attention to business, technology, and fundamental project management discipline. Unlike much of his team, he noted that you are focused not just on the technology aspects of deploying SAP but also on how SAP will help HiTech innovate from a business and technology-enablement perspective. To help ground the executive committee, the CEO has requested that you answer several of the committee's basic questions surrounding SAP.

Questions

1. What's the difference between best practices and common practices?
2. The committee understands that SAP is all about introducing change through business innovation. However, what can HiTech do through the implementation itself to introduce SAP in such a way that its very deployment makes a difference to the firm's IT cost model?
3. HiTech tends to look at things from a technology perspective, a by-product of its rich heritage in information and communication technologies. To help HiTech refocus and prioritize, what are the three or four most important things to consider when adopting SAP?

4. Why aren't we using mySAP.com or deploying WebAS, as we did at my last company?
5. The term "SAP" seems to be tossed around pretty carelessly. Is there a good rule of thumb on how to use the term relative to SAP's products and naming conventions?

NOTE

The answers to these questions can be found in Appendix A, "Case Study Answers."

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