

# Introduction to ERP: Overview of ERP Systems

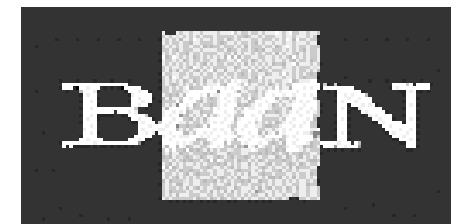
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- To describe the key elements of each of the major ERP systems which dominate the market.
- To gain a basic understanding of the ERP market.
- To describe the key risks and control issues surrounding the implementation of major ERP systems.
- To provide an approach for establishing a well controlled environment.

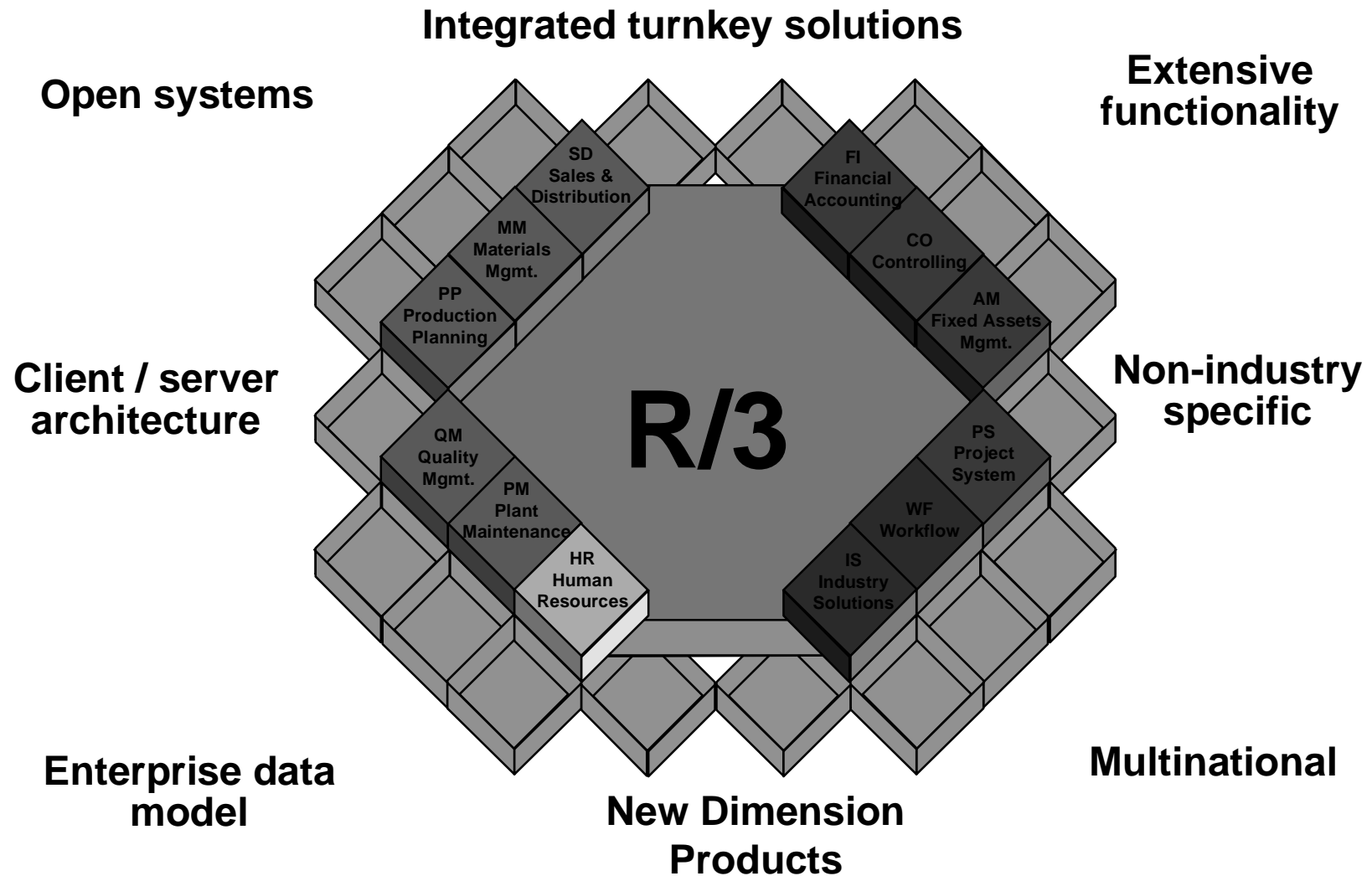
- Overview of ERP Packages
- ERP Market Outlook
- Key Risks and Controls
- Controls Implementation Approach



# *Overview of ERP Packages*

- Founded in 1972 in Waldorf, Germany
- 4th largest software supplier in the world
- Revenues over \$5 billion in 1998
- SAP growing over 40% a year
- 18,330 employees worldwide (9/98)
- 1997 market share was 31% of the worldwide client/server enterprise application software
- Over 9,000 installations at 6,000 companies with more than 2,500,000 users in over 50 countries
- An average of 25% of revenue invested in R&D

# SAP - The Product



- **SAP standard delivered automated enablers**
  - Document balancing, database integrity, automatic posting, match codes.
- **SAP configurable enablers**
  - Credit checking, tolerances, document matching, document blocking, change documents, release strategy
- **SAP Work Flow**
- **Application Security**
  - Access definitions, transaction locks, user locks, system parameters
- **Reports**
  - ABAP, ABAP Query, Report Writer

- Revenues over \$1.3 billion in 1998
- 2nd largest ERP supplier in the world
- Growing over 60% a year
- 7,000 employees worldwide
- 2,900 clients worldwide
- 1997 market share was 8.4% of total ERP software license market
- International growth and expansion will be focus through 2000

- **HRMS**
  - Payroll, Benefits, Human Resources, Pension Administration, Time & Labor
- **Accounting and Control**
  - General Ledger, Payables, Receivables, Asset Management, Projects, Budgets, Expenses, Cash Management
- **Treasury Management**
- **Materials Management**
- **Supply Chain Planning**
- **Service Revenue Management**
- **Procurement**
- **Enterprise Performance Management**
- **Project Management**

- PeopleSoft delivered automated enablers
  - Document balancing, edits and validations
- PeopleSoft configurable enablers
  - Required fields, audit trails, trial mode vs. final mode, workflow approvals, control data, correction access, statistical auditing, positive pay banking
- Application Security
  - Menu/panel security, row level security, workflow security, field security, preferences
- Reports
  - Query, PS/nVision, SQR

- Founded in 1977
- 2nd largest software supplier in the world
- Revenues over \$8 billion in 1998
- 41,000 employees worldwide, 16,000 U.S.
  - Reflects total company - not just applications business
- More than 6,000 customers in 76 countries
- 1997 ERP market share was 8.3% of total ERP license revenue
  - 50% of applications revenue comes from services
- Oracle's applications license revenue is growing at 18% a year; significantly less than its rivals.

## ■ Financials

- Planning (G/L, Analyzer)
- Analysis
- Consolidation
- Expenditure Management
- Billing and Cash Collection
- Cash Management
- Asset Management

## ■ Supply Chain

- Strategic Procurement
- Non-production Procurement
- Strategic Sourcing
- Catalogue Management

## ■ Projects

- Costing
- Billing
- Time and Expense
- Activity Management Gateway

## ■ Human Resources

## ■ Materials Management

- Inventory
- Purchasing

- **Manufacturing**
  - Factory & Item Definition
  - Planning & Simulation
  - Materials Management
  - Production
  - Cost Management
  - Integrated Technologies

- Oracle standard delivered automated application enablers
- Oracle standard delivered configurable enablers
- Oracle “Work Flow” configurable enablers
- Oracle “Alert” configurable enablers
- Application Security
- Reports
  - standard delivered
  - newly developed

- Founded in 1978 in the Netherlands
- 5,500 employees worldwide
  - Announced 20% headcount reduction in Oct. 98
- Revenues over \$684 million in 1997
- 3,000 clients in 5,000 sites worldwide
- 1997 ERP market share was 5%
- Sales strategy changed in 1997 to drive 50% of sales through channels and value-added resellers

## ■ BaanERP

- Sales order management
- Procurement
- Inventory
- Warehousing
- Project Management
- Manufacturing

## ■ BaanFrontOffice

- Sales Management
- Marketing Management
- Call Center
- Product Configuration

## ■ BaanMaintenance

## ■ BaanService

## ■ BaanCorporateOffice

- Accounting
- Finance
- Human Resource Management

## ■ BaanSCS

- Supply Chain Management
- Demand Forecasting
- Manufacturing Execution

## ■ BaanDEMse

## ■ BaanEngineering

## ■ Baan-On-Board



# *ERP Market Outlook*

- 1997 worldwide enterprise applications market grew at 20.2% to \$14.4 billion (licenses and maintenance)
- Top 10 ERP vendors growth rate was 32.9% collectively and they have a > 40% share of the total market
- ERP industry remains healthy and growth rate projections are 30-33% annually for the next 3-5 years
- This represents a decline from the 60-100% growth rates some vendors have experienced in the past few years.

# Aggregate ERP Revenues

**This estimate is by AMR Research in a November 1998 report  
“Industrial Enterprise Applications Software Report, 1997-2002”**

# Growth Trends Through 2002

- Vertical focus
- Down-market emphasis
- NT server
- Suite expansion
- E-commerce and Internet
- Channels
- Euro/EMU
- International expansion



# Pressures Contributing to ERP Industry Decline Through 2002

- Asia economic concerns
- Year 2000
- Slow down in high end of ERP market
- Industry pricing
- ERP stock valuations too high
- Earnings declines in ERP industry
- Weakness in global economy



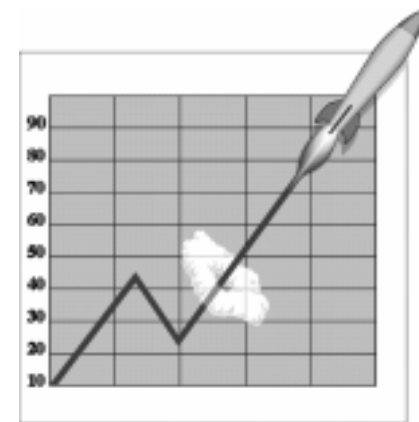
- SAP
- PeopleSoft
- Oracle
- Computer Associates
- Baan
- J. D. Edwards
- System Software Associates
- Geac Computer Corp.
- IBM
- JBA Holdings

**Based on 1997 software license and maintenance revenues**

# Which Vendors Will Pull Away From The Pack by 2000?

- Industry analysts and market analysts believe these are the vendors to watch:

- SAP
- PeopleSoft
- J. D. Edwards



- Oracle, Baan and a host of mid tier companies will lose ground as the industry continues to consolidate
- Key difference - ability to execute!

# ERP Leaders Through 2002 Will

- Develop an integrated application suite that is business-centric yet flexible to clients' needs
- Move from the role of software provider to business partner
- Be able to offer service bureau and outsourcing operations (themselves or in partnership) which will stimulate demand for new solutions
- Make packages easier to implement and maintain

# SAP's Focus Through 2000

- Continue to componentize R/3
- Expansion outside of non-manufacturing industries
  - Retail
  - Financial Services
  - Public Sector and Higher Education
- Manufacturing industry segment specific functionality
  - Aerospace & Defense
  - Engineering & Construction Chemical
  - Pharmaceuticals
  - Oil & Gas
- Focus on post-implementation support and tools

# SAP's Focus Through 2000

- Continued expansion for front office, supply chain, business information warehouse
- E-commerce
- Small and mid-market expansion
- Speed of implementation
  - Tools
  - Turn key solutions
- Increased focus on trained and certified consultants globally (internal services and partners)
- Outsourcing

- The release of 7.5 will put PeopleSoft in the thick of the ERP market share race
- International expansion is key to increasing market share
  - Until recently PeopleSoft has been US-centric
- Outsourcing
- Continued expansion of partnerships with global systems integrators
- E-commerce

- Vertical market focus will be:
  - High Tech
  - Consumer packaged goods
  - Automotive
  - Energy and utilities
  - Higher education
- Continued investment in manufacturing applications

- Complete reorganization that began in spring of 1998
- Retraining of 2,000 sales people to focus solely on applications business
- Multiple language support
- Implementation of “Business OnLine” outsourcing and application hosting
- Development of a dealer network for the mid-market
- Improve relationships with systems integrators



# Oracle's Focus Through 2000

- Industry focus will be:
  - Telecom
  - Consumer packaged goods
  - Energy
  - Manufacturing
- Expansion of technical architecture
- Dominate the Asian market

- Industry and Wall Street analysts are taking a “wait and see” position
- Belief is if Baan's recent reorganization (Q4 98) announcements yield results in the next 4-6 months then the company will weather the current storm
- Analysts say cause of Baan's problems are:
  - Baan is trying to establish untested, indirect sales model
  - Integration of a number of acquired companies and products
  - General slow down in the market

- Belief is that traditionally Baan has been very decentralized but to resolve all of the current issues, they need to centralize which will have a “drastic and costly short-term effect” but ultimately it should let Baan recover.
- Continuing to see strength in sales of BaanFrontOffice Systems



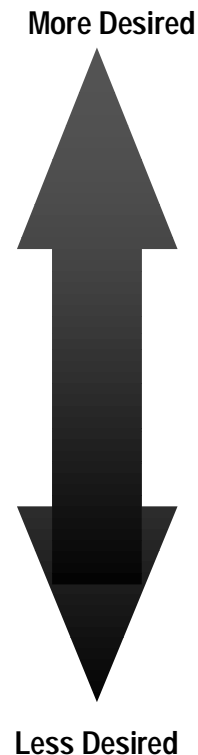
# *Key Risks and Controls*

- **Business Exposures**
  - Single Point of Failure
  - Reengineering or Business Process Redesign
  - Extensive Expertise Required
- **Technical Exposures**
  - New Technology Environment
  - Inexperience with System and Technology
  - IS Organization Transition
- **Control Exposures**
  - Controls Not Implemented During Implementation
  - Difficult to Understand and Audit



# *Control Implementation Approach*

To ensure that controls are addressed during the implementation, ERP control specialists should be dedicated:



- Internal Audit involvement in design, implementation and testing
- Project team members design, implement and test while Internal Audit performs periodic reviews
- Internal Audit perform pre- & post-implementation review of control environment

- **Systems Development and Configuration**
  - Business Process Functionality Review
  - Include Controls in Business Process Design
  - Develop Solutions to Control Weaknesses
  - Agree Controls with Functional Owners
- **System Implementation of:**
  - Access Security
  - Data Conversion Strategy, Plan and Execution
  - Automated Interfaces
  - Change Control (e.g., programs, objects, tables)

- Access Privileges = Job Responsibilities
- Appropriate Segregation of Duties
- Sensitive Data is Protected
- Third Party Access complies with Policies
- User IDs Populated Appropriately
- Consistent Security Naming Conventions

- Identification and Suspension of little used User ID's
- Users who terminate, transfer are immediately identified and their accesses canceled
- Documentation and Authorization of Change Requests for all security changes
- Functional Access changes approved by Owners before being activated in System

- Strategy, Planning, Identify Dependencies
- Data Cleansing of Predecessor Systems
- Data Reconciliation and Validation Procedures
- Parallel Maintenance of Master Files
- Ownership and Sign-Off of Converted Files
- Internal Staff have Primary Responsibility -  
Contract Staff work subject to additional validation
- Special Controls for Automated and Manual  
Conversions