Characteristics of Top 10 ERP Products.

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Abstract:
This white paper contains introduction to functional approach of the general ERP system
purpose is that user can categorize requirements into functional area and easily identify
scope in the ERP system.
Also white paper includes basic characteristics of Top 10 ERP products. Characteristics of
ERP product are defined on the base of system architecture, software architecture, scope
identification and limitation. It will be helpful for Company to identify which ERP system is
capable to fulfill its needs on the base of requirements.

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Summary

- This article contains introduction to Functional approach of the ERP system.
- Which includes following information.
  - Introduction.
  - System architecture.
  - Software architecture.
  - Scope identification.
  - Strength.
  - Limitations.
- Basic characteristics in table format

Introduction to Functional area

ERP system manages company’s business objects and business process all together. These business objects are categorized into specific functional modules.

- **Financial Accounting and Controlling (FI/CO)**
  
  Every business revolves around finance. Every process within a business involves financial transactions. In the organization the need always exist to have tight control over finances and to haves ways and means to properly move funds between different sections of a business.

  Following are some sub components of FI/CO.

  General Ledger Accounting, Account Receivable, Account Payable, Asset Accounting, Funds Management, Cash Management, Cash budget Management, Overhead Cost Controlling, Product Cost Controlling, Profitability Analysis, Investment Management, Profit-Center Accounting and so on.

- **Sales and Distribution (SD)**
  
  This is one of the critical functional areas of the organization. Since every organization has some goods or services to sell.

  Following are some sub components and functionality of SD.

  Pricing Function, Material Substitution Function, Finished goods availability Function, Credit Management Function, Sales, Shipping, Transportation, Billing, Foreign Trade, Payment Card Processing and so on.

- **Material Management (MM)**
  
  If the organization deals with inventory management, planning and procurement of materials then these business processes.

  Following are some sub components and functionality of MM.

  Consumption Based Planning, Material Requirement Planning,
Purchasing and Invoice Verification, Inventory Management.

- **Plant Maintenance (PM) and Service Management (SM)**
  
  This is the excellent functionality of the organization to maintain in-house equipment and efficiently service the products that company sell to customers.

  Following are some functionality of **PM and SM**.

  Equipment and Technical Objects, Preventive Maintenance, Service Management for good reputation in the market.

- **Production Planning (PP)**
  
  If business involves some manufacturing process then it categorized into to Production Planning.

  Following are some sub components and functionality of **PP**.

  Production Routing and Scheduling, Capacity Planning, Material Requirement Planning, Repetitive Manufacturing, Assembly Processing.

- **Project System (PS)**
  
  If the organization manages and executes project for their customers then such business processes categorized into PS function module. Important functionality is to manage resources, activities and to monitor budget and cash flow situation for a particular project.

  Following are some sub components and functionality of **PS**.


- **Human Resources (HR)**
  
  It is a people who make or break the organization, means organization not only have to pay the salaries but also have to develop people to keep with the changing time and help them in career growth.

  Following are some sub components and functionality of **HR**.

  Personnel Management, Time management, Payroll accounting
Following Diagram shows how ERP system integrates the different function modules.
General description of Quality ERP Products

SAP R/3

Introduction

SAP AG is a frontline software company based in Walldorf, Germany. SAP AG founded by four former IBM employees in 1972. Their main product in enterprise resource planning has same name as the company and is acronym for Systems Applications and Products in Data Processing. This is inherently Y2K-compliant software is based on client server technology and is developed in ABAP/4 (Advance Business Application Programming), an SAP proprietary 4 GL (generation language). SAP R/3 implemented in 1992 here R stands for Real time and 3 stands for three tiers. SAP has two main products mainframe system R/2 and client server R/3. R/3 is the product that has really placed SAP AG as the leader in the industry.

System Architecture

The software uses the Client Server Technology (Three Tier).

- Operating System : Unix, Windows NT.
- Database : Oracle, Informix and Sybase.
- Front End Tool : SAP Graphical User Interface.

Software Architecture

- Client-Server Technology. Multi tier System. Means Database Server used to store data, Application Layer used to run the application and Presentation Layer nothing but GUI i.e. client system.

- High-level security.

- In built Database system

- Basically it divides into Functional are and Technical area. Functional area where configuration and settings of business process and business objects. Technical area responsibility as like system administration, data transformation, development of objects.

- SAP R/3 is modular software. Different business process is divided into different functional modules, and these functional modules are integrates.
Characteristics of Top 10 ERP Products

✓ Centralized database system.
✓ System runs in real time, having also Internet based applications.
✓ Electronic Data Transfer Technology
✓ Flexible. Third party tool can be attached.
✓ Support remote functions and having powerful interface technology.
✓ Support multi language and multi currencies.

Scope Identification (Strength)

✓ Targeted to most of the industries, Manufacturing, Retail, Oil and Gas, Pharmaceutical, Banking, Insurance, Telecommunication, Health care, Transport, Chemical and so on.
✓ Can be configured all functional area specific to the industry.
✓ Support Customer Relationship Management (CRM) activities efficiently.
✓ User enhancement capability

Limitations

✓ Research level industry configuration needs more development work.

ORACLE APPLICATION

Introduction

Twenty-six years ago, Larry Ellison saw an opportunity other companies missed when he came across a description of a working prototype for a relational database and discovered that no company had committed to commercializing the technology. Ellison and his co-founders, Bob Miner and Ed Oates, realized there was tremendous business potential in the relational database model--but they may not have realized that they would change the face of business computing forever.

Today Oracle (Nasdaq: ORCL) is still at the head of the pack. Oracle technology can be found in nearly every industry around the world and in the offices of 98 of the Fortune 100 companies. Oracle is the first software company to develop and deploy 100 percent internet-enabled enterprise software across its entire product line: database, business applications, and application development and decision support tools. Oracle is the world's leading supplier of software for information management, and the world's second largest independent software company.
Oracle Application 11i is a completely Internet enabled and can be centrally managed by a single site.

**System Architecture**

The software uses the Client Server Technology (Three Tier).

- Operating System : Unix, Windows NT.
- Database : Oracle
- Front End Tool : Oracle Forms
- Latest Version : 11i
- Language : PL/SQL, Java

**Software Architecture**

- Client-Server Technology. Multi tier System. Means Database Server used to store data, Application Layer used to run the application (Form Server, Reports Server, WebDB listener, Discoverer Server) and Presentation Layer nothing but GUI i.e. client system.
- Centralized database system.
- Basically it divides into ERP product and CRM product.
- Internet Computing Architecture
- Additional Enhancement
- Internationalization support
- Simplified file system
- Electronic Data Transfer Technology
- Business Intelligence Support product for decision-making.
- Support remote functions and having powerful interface technology.
- Support multi language and multi currencies.
Scope Identification (Strength)

- Targeted to most of the industries, Manufacturing, Retail, Oil and Gas, Pharmaceutical, Banking, Insurance, Telecommunication, Health care, Transport, Chemical and so on.
- Can be configured all functional area specific to the industry.
- Support Customer Relationship Management (CRM) activities efficiently.

Limitations

- Set of available language is limited.

Baan ERP

Introduction

The Baan Company started offering enterprise business management software in 1978. The company’s impact reflects its commitment to improving business processes, flexibility, aggressive global competitiveness, and leadership in the Open systems and client/server computing environment. Baan operates from its current dual headquarters in Putten, The Netherlands and Reston, Virginia (USA).

System Architecture

The software uses the Client Server Technology (Three tier) for AS/400 system.

- Operating System : OS/400, Platform independent.
- Database : DB2
- Front End Tool : Baan Windows Client (BW), Baan Internet Client (BI)
- Latest Version : BaanERP 5.0 C
- Language : Baan 4 GL.

Software Architecture

- Client-Server Technology. Three Tier Architecture.
- The BaanERP software environment is divided into packages, modules, and Software components.
A BaanERP package represents a business application group comprised of a series of related modules. A module is a set of related software components. Examples of software components are menus, sessions, table definitions, forms and reports.

Centralized database system.

Internationalization support

Electronic Data Transfer Technology

Support remote functions and having powerful interface technology.

Support multi language and multi currencies.

Scope Identification (Strength)

Focusing on the manufacturing market, Baan has functional applications in many market segments. Within the manufacturing market, the following five specific Industries are the focus of Baan’s attention:

• Automotive
• Electronics
• Process
• Aerospace and defense
• Hybrid manufacturing

The company’s choice of these industries reflects an emphasis in three areas: Well-defined supply and demand chains, a focus on industry best practices, and Continuous re-assessment of business processes and underlying information Technology infrastructure. In addition to this, Baan’s continual expansion is Producing increasing expertise for the company in other vertical industries such As health care, utilities, and financial services.

Limitations

Flexible for specific industry, Expansion is in process for other industry solutions.
PeopleSoft

Introduction

PeopleSoft founded in 1987. PeopleSoft’s pure internet Customer Relationship Management, Supply Chain Management, and Enterprise Management solutions provide the industry’s most open and flexible e-commerce platform.

System Architecture

The software uses the Client Server Technology (Three tier).

- Operating System: Windows, Unix, SunSolaris, IBM Aix
- Database: Oracle, Microsoft SQL, IBM DB2, Sybase, Informix
- Front End Tool: PeopleSoft Client Tool
- Latest Version: 8
- Language: Web logic and WebSphere.

Software Architecture

- Client-Server Technology. Three Tier Architecture.
- Purely Internet based application.
- Centralized database system.
- Internationalization support
- Electronic Data Transfer Technology
- Support multi language and multi currencies.
- Real time system.

Scope Identification (Strength)

- Focusing on HR module, FI and CRM activities for most of the industry.

Limitations

- Efficiently manages only HR, FI, Supply Chain Management and CRM activities.

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One World J.D.Edwards

Introduction
Founded in 1977 by three partners from the accounting firm Alexander Grant (today known as Grant Thornton), J.D. Edwards (NASDAQ: JDEC) is a leading supplier of e-Business solutions to customers throughout the world. J. D. Edwards (JDE) products are designed to meet the full spectrum of enterprise software needs. Everything from CRM to Supply Chain to Advanced Planning to Fulfillment is covered under the JDE software family, appropriately called OneWorld. Recently J. D. Edwards redirected to peoplesoft.

System Architecture
- Operating System : AS/400, Windows
- Database : DB2, SQL, Oracle
- Latest Version : 5
- Language : RPG/400

Software Architecture
- Client-Server Technology. Three Tier Architecture.
- Centralized database system.
- Internationalization support
- Electronic Data Transfer Technology
- Support multi language and multi currencies.

Scope Identification (Strength)
Sales, Production, Finance, CRM and Market

Limitations
- In this system environment you cannot develop dependencies with other applications or trigger jobs based on external actions. Using third part add-ons can solve problem.
Lawson

Introduction

Founded in 1975, Lawson has always remained committed to the principles on which it was founded: to help clients maximize their software investments and position each client for the future. Throughout Lawson history, have been at the forefront of technology – offering packaged software solutions in the 1970s, embracing open systems technology in the 1980s, and introducing web-enabled business software in the 1990s. Today, Lawson continues to break new ground with a wide variety of software, services, and support opportunities to help clients save time and money.

System Architecture

The software uses the Client Server Technology.

- Database: DB2, SQL

Software Architecture

- Client-Server Technology. Three Tier Architecture.
- Centralized database system.
- Internationalization support
- Electronic Data Transfer Technology
- Open architecture.
- Support multi language and multi currencies.

Scope Identification (Strength)

- Large to mid-sized organizations in professional services, healthcare, financial services, retail, public sector and other strategic markets use it to automate/integrate their critical business processes and to facilitate collaboration among customers, partners, suppliers and employees.
Having following ERP functional area

- Financials
- Human Resources
- Procurement / Healthcare Supply Chain Management
- Distribution
- Software for Retailers
- Service Process Optimization

**Limitations**

- Jobs can be submitted through the Lawson interface, but the interface cannot handle complex scheduling tasks. For example, with Lawson alone, you cannot develop dependencies with other applications and trigger actions to Lawson based on external or multiple dependencies.

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**AXAPTA**

**Introduction**

This is the product of Microsoft business solutions. It has the solid foundation you need to collaborate successfully with customers, partners, employees and suppliers. The solution provides with the insight and flexibility to pursue new strategies, operate across borders, and expand capabilities as business grows.

**System Architecture**

- Operating System : Windows
- Database : SQL, Oracle
- Latest Version : 3

**Software Architecture**

- Client-Server Technology. Three Tier Architecture.
- Centralized database system.
- Internationalization support
- Electronic Data Transfer Technology
- Support multi language and multi currencies.
**Scope Identification (Strength)**

**Limitations**
- Having flexibility in specific industry solution and mid-sized industry.

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**Epicor**

**Introduction**

Founded in 1984, headquarters 18200 Von Karman Ave, Suite 1000, Irvine, CA, 92612. For 20 years, Epicor has been a recognized leader dedicated to providing integrated enterprise software solutions to midmarket companies around the world. With over 15,000 customers, Epicor delivers end-to-end, industry-specific solutions that enable companies to immediately improve business operations and build competitive advantage in today’s Internet economy.

Customer Relationship Management, Financials, Manufacturing, Supply Chain Management, Professional Services Automation and Collaborative Commerce provide the scalability and flexibility to support long-term growth. Epicor’s solutions are complemented by a full range of services, providing single point of accountability to promote rapid return on investment and low total cost of ownership, now and in the future.

**Vista, Avante, Vantage** these are ERP solutions of Epicor.

**System Architecture**

- Database : SQL

**Software Architecture**

- Client-Server Technology. Three Tier Architecture.
- Centralized database system.
- Internationalization support
- Electronic Data Transfer Technology
✓ Support multi language and multi currencies.

**Scope Identification (Strength)**

✓ Financials, Manufacturing, Supply Chain Management, Professional Services Automation Customer Relationship Management, and Collaborative Commerce.

**Limitations**

✓ Different Functional modules are built in different software packages.

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**ACCPAC Advantage Series Enterprise Edition (Best Software)**

**Introduction**

ACCPAC Advantage Series helped streamline all of Quails’ Gate business operations, yielding tremendous time- and cost-savings. With this complete system integration, both management and the winemaker are able to make the most informed business decisions possible by accessing real-time information across the entire enterprise.

**System Architecture**

✓ Operating System : Windows, IBM series  
✓ Database : SQL, DB2, Visual Foxpro

**Software Architecture**

✓ Client-Server Technology. Three Tier Architecture.  
✓ Centralized database system.  
✓ Internationalization support  
✓ Electronic Data Transfer Technology  
✓ Support remote functions and having powerful interface technology.

**Scope Identification (Strength)**

Limitations

- Different Functional modules are built in different software packages.

MRP Plus

Introduction

Implemented by Horizon Software. Horizon Software offers virtual and/or on-site implementation assistance, training, on-going support and customization services to users of the MRP Plus manufacturing software suite. Horizon Software, Inc., has been providing ERP and accounting software solutions to small and medium size manufacturers for over 18 years. It's MRP Plus ERP software solution for supply chain and manufacturing, offers an enterprise-wide set of integrated manufacturing and accounting software for a nominal investment. Utilizing client/server technology through Microsoft Access, its flexible open architecture enables seamless integration with Microsoft Office and third party solutions.

System Architecture

- Operating System: Windows
- Database: Microsoft Access, Excel
- Front End Tool: Visual Basic
- Latest Version: Microsoft’s most recent versions of Access and Visual Basic.
- Language: Visual Basic.

Software Architecture

- Client-Server Technology. Two tier. Database Server used to store data (Microsoft Access, Visual Basic),
- Application Layer/Presentation used to run the application (Visual Basic)
- Using traditional client server based technology, all data is maintained in one central location for access by all. Additionally, Multiple locations can be supported in a thin client environment locally, and via Internet connection.
MRP Plus is feature rich. It is an integrated, on-line, real-time, closed-loop, net-change manufacturing, service, planning, control and analysis software package. It encompasses and integrates all the major functions of a manufacturing company today.

**Scope Identification (Strength)**

MM, Supply Chain Management, FI, CRM.

**Limitations**

- Supported only for small scale and mid sized manufacturer

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**Following Table shows basic criteria for ERP product.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Product Name</th>
<th>Multiple OS</th>
<th>Architecture</th>
<th>Multi Language</th>
<th>Multi currency</th>
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<tr>
<td>1</td>
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<td>T</td>
<td>3 Tier</td>
<td>T</td>
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<tr>
<td>2</td>
<td>Oracle Application</td>
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<td>3 Tier</td>
<td>Limited</td>
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<tr>
<td>3</td>
<td>Bann ERP</td>
<td>T for Client</td>
<td>3 Tier</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>4</td>
<td>People Soft</td>
<td>T</td>
<td>3 Tier</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>5</td>
<td>One World (J.D. Edwards)</td>
<td></td>
<td>3 Tier</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>6</td>
<td>LAWSON</td>
<td>T</td>
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<td>Changes Req</td>
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<tr>
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<td>T</td>
<td>3 Tier</td>
<td>Changes Req</td>
<td>Changes Req</td>
</tr>
<tr>
<td>8</td>
<td>EPICOR</td>
<td>T</td>
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<td>T</td>
<td>2 Tier</td>
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### Characteristics of Top 10 ERP Products

<table>
<thead>
<tr>
<th>No.</th>
<th>Product Name</th>
<th>Internet Based</th>
<th>Enhancement</th>
<th>Functional Area</th>
<th>CRM activities</th>
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<td>T</td>
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<td>T</td>
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<td>T</td>
</tr>
<tr>
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<td>T but not flexible</td>
<td>All</td>
<td>T</td>
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<tr>
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<td>Purely</td>
<td>T</td>
<td>HR, FI, Supply chain</td>
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<td>5</td>
<td>One World (J.D. Edwards)</td>
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<td>T</td>
<td>All</td>
<td>T</td>
</tr>
<tr>
<td>6</td>
<td>LAWSON</td>
<td>T</td>
<td>T but not flexible</td>
<td>Specific</td>
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<tr>
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<td>T but not flexible</td>
<td>Specific</td>
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<tr>
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<td>Specific</td>
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<tr>
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