

Use of ERP in Education and Role of Oracle E-Business Suite

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Certificate

This is to certify that the seminar entitled **Use of ERP in Education and Role of Oracle E-Business Suite** submitted by **Ohm Trivedi (12BCE054)** towards the partial fulfillment of the requirements for the degree of Bachelor of Technology in Computer Science and Engineering of Nirma University, Ahmedabad is the record of work carried out by him under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this seminar, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

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Abstract

ERP stands for Enterprise Resource Planning. ERP is an enterprise-wide information system that facilitates the flow of information and coordinates all resources and activities within the business organization. Functions typically supported by the system include manufacturing, inventory, shipping, logistics, distribution, invoicing, and accounting. This paper gives an introduction to what is ERP, why ERP and how ERP can benefit today's globally-spread enterprises in the highly-competitive market.

The paper focuses on Oracle's ERP solution - Oracle E-Business Suite (EBS). It is an integrated suite of enterprise software modules for financial management, supply chain management, manufacturing, project management, human capital management, and customer relationship management. In particular, the Financials and Supply Chain Modules have been discussed thoroughly.

Lastly, the issue of bringing ERP into Education field is discussed. The article presents research conclusions about the field of ERP frameworks and their utilization in advanced education organizations (colleges, resources and autonomous advanced education foundations).

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Chapter 1

Introduction

1.1 What is ERP?

Enterprise Resource Planning (ERP) is an integrated software system that manages the mainstream operations of an organization. ERP is often defined as standardized packaged software designed to integrate the entire value chain in the organization. What is different about ERP systems, is that they integrate across functions to create a single, unified system rather than a group of separate, insular applications.

1.2 What does ERP consists of?

Since the first ERP system was designed and built over 25 years ago, ERP software solutions have evolved to where most business activities can be captured in a single system. The primary activities and their functions are:

- Accounting and Finance
 - General Ledger
 - Accounts Payable
 - Accounts Receivable
 - General Journals
 - Trial Balance and Financial Reporting
 - Bank Reconciliation
 - Cash Management and Forecasting
 - Budgeting
- Distribution
 - Purchasing, Tracking & Sales Shipments of Inventory Items

- Track by Lot and/or Serial numbers
 - Track Quality Tests
 - Warehouse Management functions
- Manufacturing
 - Track the conversion of raw materials into finished goods
 - Track Labour, Overhead and Other manufacturing costs
 - Provide the total cost of production
- Service Management
 - Track and monitor post sales service to products in the field
 - Warranties
 - Service Contracts
 - Product Lifetime Costing - has become a standard functionality in current ERP solutions
- Human Resource Management
 - Payroll
 - Time and attendance
 - Performance record & appraisal
 - Benefits administration
 - HR MIS
 - Recruiting/Learning management
- Customer Relationship Management ¹
 - Sales and marketing
 - Commissions
 - Service
 - Customer contact
 - Call centre support

¹CRM systems are not always considered part of ERP systems but rather Business Support systems (BSS).

1.3 Why should an organization opt for an ERP system?

The consolidation of data resulting from ERP use creates many organizational benefits:

- No need to synchronize changes between systems.
- Consolidates applications and brings more control to cross-functional processes for manufacturing, finance, human resources, marketing, and sales.
- Ability to track and provide Average Costing in production, thus allowing firms to move away from the inefficient and inaccurate 'Standard Cost' method of production costing.
- Provides a real-time, enterprise-wide view of the business for faster and more effective decision-making.
- Shortens production lead times and delivery times.
- Helps build a common vision throughout the enterprise.
- Consolidates multiple permissions and security procedures into a single framework, which reduces the risk of losing or exposing sensitive data.

1.4 How can one choose an ERP system?

We can use the following 'selection' criterion's while choosing an ERP system:

1. Ease or Speed of Implementation
2. Price
3. Vendor Support
4. Reliability
5. Ease of Use
6. Customization/Parametrization
7. Integration
8. Organizational Fit
9. Functionality

10. Vendor Reputation
11. Flexibility
12. Training
13. Information Needs
14. Latest Technologies
15. Scalability
16. Upgrades
17. Modularity

1.5 Comparison of Proprietary ERP systems

According to a survey report [1], the following summarizes the distinguishing factors between the three ERP Kings in today's market, namely SAP, Oracle and Microsoft Dynamics.

1.5.1 SAP

- Largest share of market
- Highest short-listing rate
- Highest selection rate when short-listed
- Least delta between planned and actual implementation duration
- Highest rate of operational disruption at go-live
- Highest failure rate
- Lowest success rate

1.5.2 Oracle

- Highest Success Rate
- Shortest Payback Period
- Least delta between projected and actual project cost

- Lowest rate of operational disruption at go-live
- Largest delta between planned and actual implementation duration

1.5.3 Microsoft Dynamics

- Shortest length of operational disruption
- Shortest implementation duration
- Highest percentage of respondents achieving greater than 40% functionality
- Smallest share of market
- Lowest short-listing rate
- Longest payback period
- Largest delta between planned and actual implementation project cost

1.6 Comparison of Open ERP systems

There is no thin line difference between the various options available in today's market. However, they are very much beneficial with respect to the proprietary ERPs as just like any other open source software they provide benefits like [2]:

- Open source code considers advancement of the usefulness to satisfy your needs and raise the productivity of your organization
- No license charge
- Scalability
- Dynamic improvement – your product will dependably take after the present business inclines because of free access to the most recent redesign

1.6.1 Openbravo

Openbravo, the spry ERP, is a secluded, prepared to utilize, 100% electronic open source and free business administration framework written in Java, that mechanizes the greater part of the center business forms for little and medium sized organizations. There are a few focal points of utilizing Openbravo on your undertaking's database like it incorporates essential usefulness for complex retail administration

process, it takes into account mix with Point of Sale hardware (scanner tag framework, touch screens, monetary printers, card perusers and so forth.) which enhances deal methodology, straightforward, natural and tasteful realistic interface and similarity with Windows and free operation framework Linux.

However, there are a few disadvantages like inadequate support system and documentation, frequent system crashes and no admin privileges.

1.6.2 Opentaps

Opentaps Open Source ERP + CRM is a completely coordinated application suite that unites top-level open source ventures to help you deal with your business all the more successfully. Today, Opentaps bolsters e-trade, Customer Relationship Management, Warehouse and Inventory Management, Supply Chain Management, and Financial Management to Business Intelligence and versatility reconciliation out-of-the-case. Opentaps have a powerful and straightforward structural engineering. There are a few favorable circumstances of utilizing Opentaps like high similarity and prebuilt capacities.

1.6.3 OpenERP

Open ERP is a complete and measured framework with around 700 modules. This is a complete open source ERP programming, which is intended to address the needs of the organization and the procedure. However proficient help is required and just institutionalized highlights are accessible which makes scalability and customization troublesome.

1.6.4 ERP5

ERP5 recognize from other ERP frameworks (open and shut source) with its coherency from most reduced – hypothetical – level. It is in light of very much created hypothetical model and to comprehend key ideas of ERP5 it is expected to see quickly that model. It is an extremely late and current ERP arrangement and has a creative outl

Chapter 2

Oracle E-Business Suite

Oracle E-Business Suite (EBS) is an incorporated suite of business applications that unites and computerizes the whole stream of business methodologies crosswise over both front and back office operations, and addresses the needs of a worldwide enterprise [3]. Since Oracle E-Business Suite items are designed to cooperate, clients can streamline the setup process by imparting basic setup information crosswise over applications.

The Oracle E-Business Suite is a complete set of business applications that empowers partnerships to proficiently track definite business exchange information and transform it into choice making data utilizing a framework based on a bound together data building design.

2.1 Architecture

The Oracle E-Business Suite Architecture [4] is a framework for multi-tiered, distributed computing that supports Oracle E-Business Suite products. In this model, as shown in Figure 2.1, various servers or services are distributed among three levels, or tiers.

A *server* (or *services*) is a process or group of processes that runs on a single machine and provides a particular functionality. For example, **Web services** process HTTP requests, and **Forms services** process requests for activities related to Oracle Forms. The **Concurrent Processing server** supports data-intensive programs that run in the background.

A *tier* is a logical grouping of services, potentially spread across more than one physical machine. The three-tier architecture that comprises an Oracle E-Business Suite installation is made up of:

- **Database Tier** - which supports and manages the Oracle database.

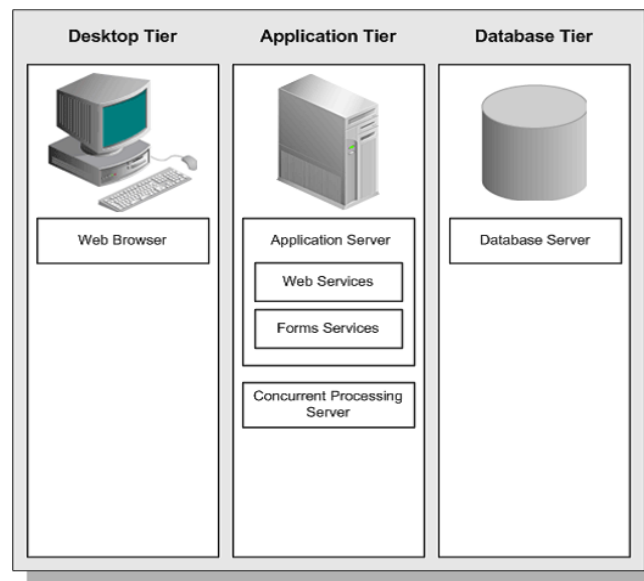


Figure 2.1: Oracle EBS Architecture [4]

- **Application Tier** - which supports and manages the various Oracle E-Business Suite components, and is sometimes known as **the Middle Tier**.
- **Desktop Tier** - which provides the user interface via an add-on component (JRE) to a standard web browser.

2.2 Oracle EBS Financials

Oracle Financials are a subset of the E-Business Suite and are a family of products designed to capture and analyze your financial data [3]. Oracle Financials applications help to meet your obligations in key areas such as:

- Compliance
- Financial control
- Regulatory reporting
- Cost containment
- Risk management

As shown in Figure 2.2, the two main business process flows associated with Oracle E-Business Suite financial modules are:

- **Order to Cash (O2C)** process is the revenue generating business process in a firm and it uses the following modules: *Oracle General Ledger, Oracle Receivables, Oracle Inventory, Oracle Order Management* and *Oracle Cash Management*.

- Procure to Pay (P2P)** process is the procurement and related activity in a firm. It is an incorporated arrangement that links purchasing and payables to expand return on invested capital. With Oracle Procure-to-Pay organizations can lessen expense to enhance edge, streamline acquire to-pay techniques to enhance working capital, and drive agreeability to improve resource utilization. It uses the following modules: *Oracle General Ledger*, *Oracle Cash Management*, *Oracle Payables*, *Oracle Inventory* and *Oracle Purchasing*.

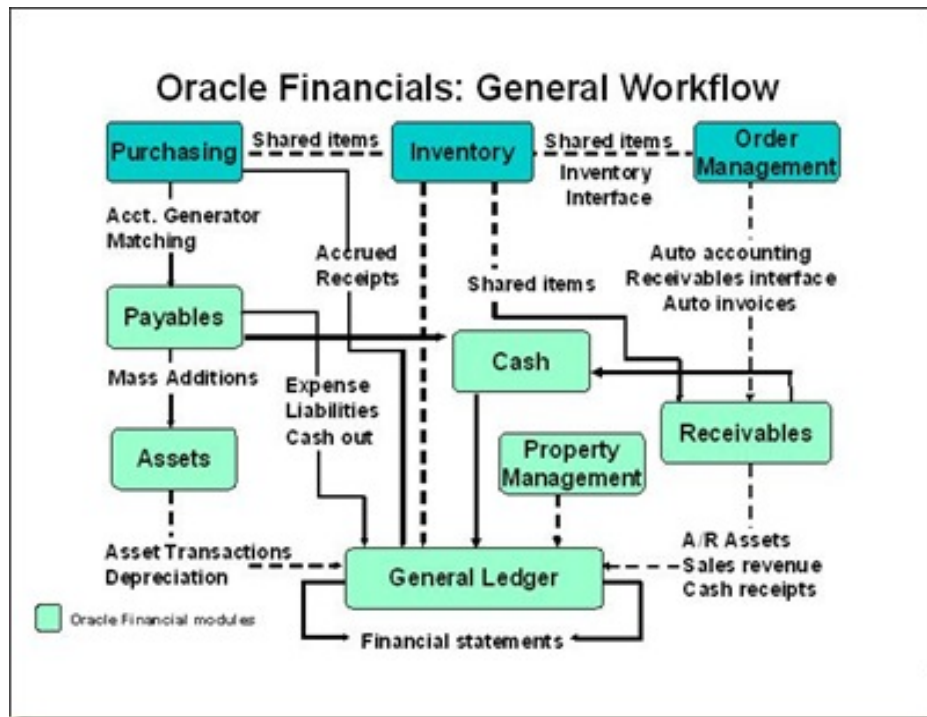


Figure 2.2: O2C and P2P workflows of Financials Modules [5]

2.2.1 Oracle General Ledger

The General Ledger (GL) is the collector of all data — financial and accounting — that is eventually used to produce financial reports for the enterprise. Transactions are transferred from the subledgers (AP, AR, PO, Inventory, and so on) to the General Ledger typically at month-end or at periodic intervals [3].

It serves to amplify bookkeeping procedure productivity in the organizations. The organizations can attain to abnormal state of data and security as far as records administration utilizing General Ledger.

Figure 2.3 shows functions of General Ledger and how it integrates with other financials modules to carry out various business functions.

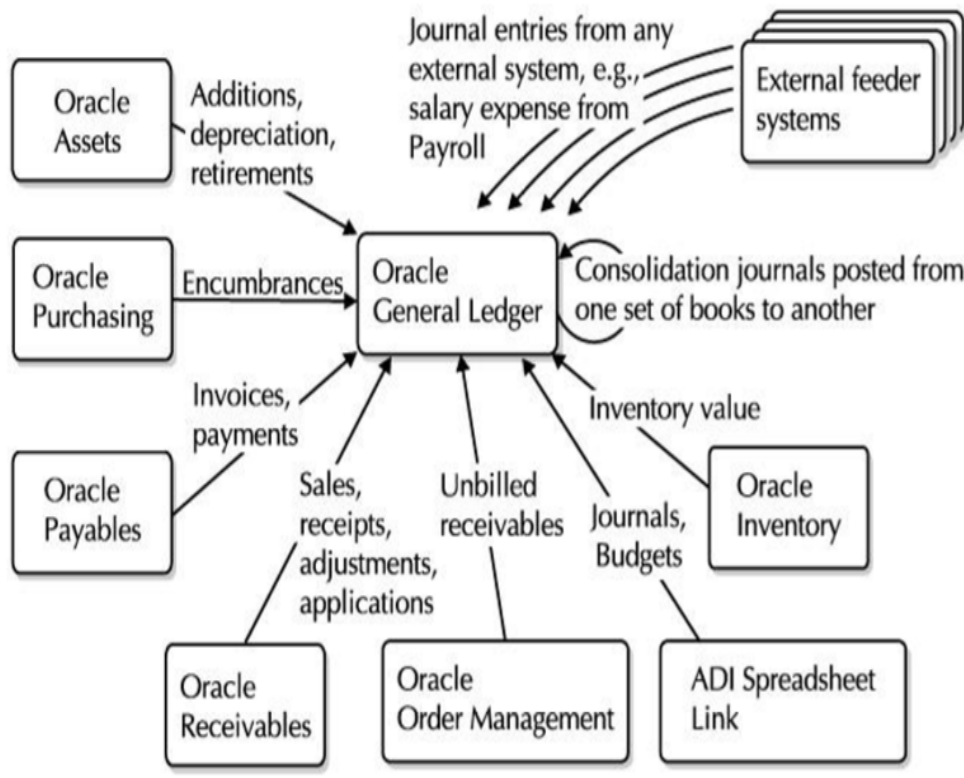


Figure 2.3: Functions and Integration of GL with other Financials Modules

2.2.2 Oracle Receivables

Oracle Receivables allows you to manage all your receivable transactions based on orders and service contracts that may have been transacted in other modules. Most invoicing (and credit) transactions are sourced from Order Management, Service Contracts, and Oracle Projects. Hence it is best suitable for project managers or project handling team members [3].

Oracle Receivables provides many workbenches to perform all the receivable operations. They are *Receipts Workbench*, *Transaction Workbench*, and *Collections Workbench*. **Receipts Workbench** is utilized for performing receipt-related works. **Transaction Workbench** can be used to process invoices, debit and credit statements. **Collection Workbench** is used to audit client accounts and perform accumulation related exercises like recording client calls.

As shown in Figure 2.4, Receivables shares customer data with Order Management, Projects, and Services. The same customers are available in all modules, and they can be maintained from any modules. Updates made in one are immediately available in Receivables.

- **Integration with Order Management** - The shipping process in Order Management records products shipped to customers and updates the inventory. Ship-

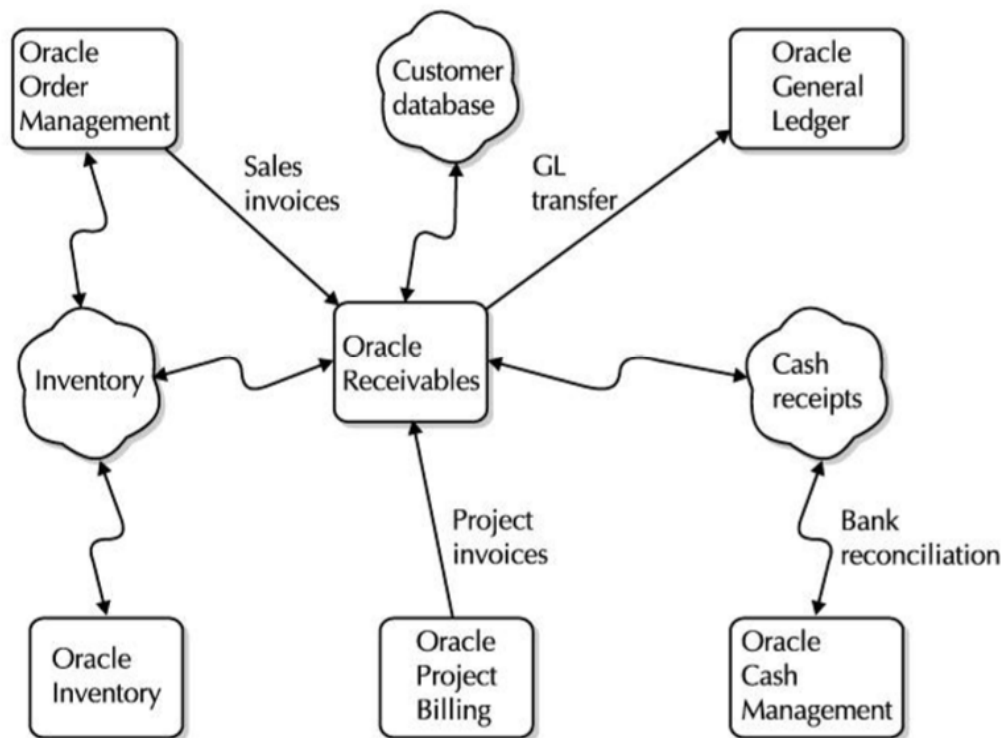


Figure 6-8: An overview of Oracle Receivables' integration with other modules

Figure 2.4: Functions and Integration of Receivables with other Financials Modules

ment information such as quantities, selling prices, payment terms, and transaction dates are transferred into Receivables. And then invoices for the sale and accounts for the sales revenue are created.

- **Integration with Projects** - Project invoices are imported into Receivables. All the data needed is supplied by Oracle Project Billing and is then processed to create invoices in Receivables. Another process runs to verify the invoices in Receivables to the original invoice in Project Billing. For successfully transferred invoices into Oracle Receivables, the process updates the project accounting data to reconcile invoices in Oracle Projects to Oracle Receivables. Rejected invoices remaining in the Oracle Receivables are updated so they can be corrected and transferred again to Oracle Receivables.
- **Integration with Inventory** - Inventory items are necessary in Order Management to identify what has been sold. The sales invoices imported from Order Management into Receivables share this inventory information.
- **Integration with General Ledger** - The GL transfer process reviews all new transactions in Receivables and creates the appropriate journal entries in Oracle General Ledger.

2.2.3 Oracle Payables

The Payables module is the last in the Procure to Pay process flow. It manages invoicing (creating the liability) and payment (clearing the liability) [3]. It is used:

- To oversee suppliers, process distinctive receipts and sanction them for installments
- To create key payable reports
- To enhance the installment strategies for viably preparing, ceasing and clearing them

Accounts Payable is a subledger where the system records what it owes its suppliers (creditors) for goods and services that have been provided. Due to the fact that there is, in most cases, a lag between the time the goods or services are delivered and the time the invoice is received, as well as a period before which the payment is made, this is recorded as a debt (or liability) for the enterprise.

Generally Oracle Payables include two workbenches: the *Invoice Workbench* and *Payment Workbench*. The exchanges can be made utilizing both of these workbenches. As the names propose, client can perform all the elements of receipts in **Invoice Workbench** and capacities identified with installments in the **Payment Workbench**.

Payables integrates with the following modules:

- **With Oracle Purchasing and Oracle Cash Management** - Oracle Payables is tightly integrated with Oracle Purchasing and Oracle Cash Management. The close integration is dictated by workflow: *Purchase orders in Purchasing give rise to invoices in Payables, Invoices give rise to payments, which will show as bank statement entries in Cash Management.*

Suppliers send you an invoice for the goods you have received. These invoices will be processed by your accounts payable department, which ensures that the supplier is known and that the price, quantity, and payment terms match those on the original purchase order. If supplier not in system, then a new supplier record must be created in Oracle Payables. Once entered and approved, the invoice is available for payment, which can take place in many different ways. From the payables point of view, the invoice is considered paid and you have reached the end of the payables cycle. The payment eventually will appear on the company's bank statement, at which stage it should be reconciled within Oracle Cash Management. Reconciling the payment removes it from the list of

payments issued but not yet cleared.

Payables shares supplier information with Oracle Purchasing. You can enter a supplier in either application and use that information to create purchase orders in Purchasing and invoices in Payables. There is no duplication of data, any changes made to the supplier details in one module are immediately available for use in the other module. Once you have created and approved purchase orders in Purchasing, you can match Payables invoices to one or more PO shipments or PO distributions.

- **With Oracle Assets** - Assets can be created and tracked using the Invoice Workbench in Payables. The asset value and procured date are derived from the invoice information. The number of units comes from the purchase order.
- **Oracle Receivables** - Trading partners who have a reciprocal relationship with you (meaning that along with selling you goods or services, they also purchase goods or services from you) are considered both suppliers and customers. In the Oracle Applications these are treated as two completely separate entities. The customer entity is managed through Oracle Receivables and has almost no exposure to the supplier entity.

2.2.4 Oracle Fixed Assets

Oracle Fixed Assets is a responsive graphical client interface that lets clients to work the product for dealing with the benefits of the organization. Resource administration lets clients discover data effortlessly, and in any alluring arrangement. Client can discover resources in view of any substance like discovering a benefit taking into account receipt, source points of interest or task data [3].

2.2.5 Oracle Cash Management

Oracle Cash Management is an endeavor money administration arrangement that helps you adequately oversee and control your money cycle. It gives exhaustive bank compromise and adaptable money anticipating. It helps in managing and controlling the exchange lifecycle in for icy hard money any business process. It organizes with payables and receivables by engaging you to suit portions and receipts customer made against the bank clarifications. Cash evaluating can moreover be done reasonably using cash organization modules and the thoughts. It allows to therefore speak to any deferment that happens when a bank is clearing portions or if there is any complexity between whole cleared and total paid. [3].

2.3 Oracle EBS Supply Chain

With Oracle SCM [6], organizations can manufacture and work with world class quality chains for productive development. The Oracle E-Business Suite Supply Chain Management group of utilizations coordinates and mechanizes all key store network forms, from configuration, arranging and obtainment to assembling and satisfaction, giving a complete arrangement set to empower organizations to power data driven worth chains. Organizations can expect market necessities and dangers, adjust and develop to react to unstable economic situations, and adjust operations crosswise over worldwide systems. A brought together information model gives a solitary, precise perspective of your whole inventory network. Organizations can execute lean, interest driven standards and deal with their inexorably unpredictable, worldwide supply chains. Furthermore, when Oracle Supply Chain Management runs on Oracle innovation, you speed usage, improve execution, streamline support—and amplify ROI (Return-On-Investments).

The benefits provided are as follows:

- **Get Better Information. Make Smarter Decisions. Deliver Best Results.** Oracle Supply Chain Management empowers you to drive inventory network procedures taking into account continuous interest data, and thus give clients exact data on evaluating and accessibility. The outcomes – you expand esteem in your store network while expanding incomes and consumer loyalty level.
- **Gain Key, Industry-Specific Capabilities.** From consistence issues to sourcing methods, every industry has an exceptional arrangement of store network challenges. Oracle Supply Chain Management gives extensive answers for the accompanying businesses: Airlines, Automotive, Communications, Consumer Goods, High Technology, Industrial Manufacturing, Life Sciences, and the Public Sector.
- **Support Global Networks and Outsourcing** Supply Chain operations are progressively worldwide, with outsourcing assuming a key part. Oracle Supply Chain Management empowers you to work together with accomplices crosswise over worldwide locales, oversee complex supplier's systems with constant data, and adjust rapidly to worldwide imperatives and interest.

2.3.1 Oracle Purchasing

Oracle Purchasing [6] is the application for expert purchasers that streamlines buy request handling while fortifying approach consistence. As per free specialists the way to attaining to world class acquirement execution lies in utilizing innovation to computerize routine errands. This liberates acquirement experts to take a shot at more key assignments identified with sourcing and supplier administration. Oracle Purchasing does simply that. It mechanizes acquiring to make purchasers more profitable, enhances administration of your supply base, and adjusts to basically any obtainment process.

The benefits provided are as follows:

- It helps acquiring experts in lessening organization costs.
- It procedure demands, buy requests, demands for citation, and receipts rapidly and productively.
- It replaces paper preparing with online order era, buy request creation, and report approbation.
- It controls record access, controls adjustment movement and support, and is in light of hierarchical mark and security arrangements.
- It minimizes information section time with thing sparing layouts.
- It controls obtaining action and empowers exact, programmed evaluating utilizing sanction suppliers and supplier records.
- It unites buy prerequisites from various stockrooms, plants or areas.
- It empowers arranging from a position of quality taking into account simple access to buy volume insights and supplier execution reports. (Dealing by requesting a thing all in all or in mass from all corners the world over)
- It encourages correspondence between requesters, purchasers, accepting staff, and records payable staff utilizing online inquiries, connections and notes.
- It gives related capacities, for example, promoting, money, expert booking, stock administration, generation, expense bookkeeping, and client request passage with access to buying data.
- It oversees purchasing records.

Purchasing integrates with the following modules:

- **With Oracle Projects** - Purchases in a tasks oriented business can be coded to a venture, undertaking, and consumption type. These points of interest are then helped through the framework to guarantee that first the dedication (on the buy request) and afterward the genuine expense (from the receipt) is connected with the task. To the extent an undertaking is concerned, cash is tantamount to spent once a demand goes to Purchasing—it can't be spent twice.

The Purchasing framework gives Projects the data it needs to confer subsidizes inside the task spending plan. It furnishes Projects with up-to-date status and expense information as a buy progresses through the order, buy, and receipt stages. Payables concludes the expense when the receipt makes it through. Note that a collection diary for products got yet not invoiced is assembled in obtaining and went to the General Ledger, yet this gathering does not go to Oracle Projects so is not obvious against individual tasks. In the event that month end accumulations are utilized the customization needed to place this into Projects also is not restrictively troublesome. Venture Manufacturing brings venture ID through stock and assembling. Buy Order line output incorporate venture and undertaking information paying little heed to the destination: cost, stock, or shop floor.

- **With Oracle Order Management** - Client demands for inward stock things never go to suppliers. These demands are directed to Order Management through the Order Import Open Interface, as inner requests to be fulfilled from stock once the order has been sanction. Inward Orders will then continue through the request cycle—Pick Release, Ship Confirm, and Inventory Interface in a way like that of an outer client request. Generally concerning orders that are fulfilled through POs, Purchasing shuts the demand when the receipt is transformed and the thing is conveyed to the requisitioner.
- **With Oracle Inventory** - Numerous things took care of by Purchasing must be distinguished by item numbers in light of the fact that the numbers are needed for assembling, offering, and stocking things. On the other hand, Oracle Purchasing can deal with requests for anything, paying little mind to whether it has a thing number (and along these lines whether it shows up in Oracle Inventory). Utilizing thing numbers as a part of circumstances in which they are discretionary offers various preferences like perspectives, consistency, recording utilization and streamlining of bookkeeping methodologies.

2.3.2 Oracle Inventory

With Oracle Inventory Management [6] you can enhance stock perceivability (one thing is display in what amount at which stores), diminish stock levels (buy materials just when needed, thus materials are not kept unused) and control stock operations. The greater part of your material in every line of business and phase of the stock lifecycle can be followed in a solitary framework. Expanded straightforwardness will decrease the requirement for neighborhood support stocks, and stock will be found where it beforehand wasn't known to exist.

The benefits provided are as follows:

- **Improve Inventory Visibility** - Oracle Inventory Management permits you to merge your unique stock following and control frameworks into a solitary, worldwide stock administration answer for material in every phase of the item or creation lifecycle and also for your distinctive business sorts. For producers and wholesalers, this perceivability is not constrained to present state adjusts but rather additionally incorporates worldwide track and follow data including stock source and where-utilized investigation.
- **Reduce Inventory Levels** - Oracle Inventory Management issues you an assortment of apparatuses to diminish your stock levels. The more exact your stock levels and proficient your recharging, the less security stock you have to hold. The more proactive your exemption administration, the all the more promptly you can react to deficiencies, quality issues and delay purchases (You have client request, yet no crude material, so you couldn't convey item) before exorbitant speeding up is needed.
- **Control Multi-Mode Inventory Operations** - Whether you are running assembling focuses, appropriation focuses, administration warehouses, extra parts stockrooms or different sorts of parts storage spaces, Oracle Inventory Management gives the multi-mode stock capacity that helps you control all your stock operations. Thorough material and exchange characteristics catch gives stock directors and administrators adaptable perceivability into material maturing, subjective qualities, material status, and material entrusted from suppliers.

In the Oracle Applications plan, modules other than Inventory are in charge of getting materials into and out of Oracle Inventory's guardianship. Buying and Work in Process are the essential wellsprings of materials, which are either purchased or made. Request Management and Work in Process are the essential consumers - Material is sold, utilized inside, or put into items. These modules allude to Inventory

expert tables as they produce exchanges that influence Inventory, strikingly receipts and issues. They perform their own particular work and afterward furnish Oracle Inventory with the exchanges expected to overhaul equalization records sometime later. This is essential to conceptualize. Stock does not issue stock to be sold. Rather, Order Management takes the material (through the pick release procedure) and afterward informs Inventory that the material is no more. Stock does not get stock. Buying acquires it, and after that advises Inventory to addition its records as needs be.

Inner to the organization, these frameworks act as a troika. Regardless of the fact that a distribution center supervisor needs a seat from his own particular stock, the exchange needs to experience three frameworks to guarantee legitimate bookkeeping and renewal. He presents a Requisition to Purchasing, which sends an Internal Purchase Order to Order Management, which trims a Pick Slip, and after that ships the seat with a Pack Slip. Obtaining gets the thing with a Receipt, and after that conveys the seat to the requester in the distribution center. This procedure may appear to be complex, yet is vital with a specific end goal to hold control and record the best possible bookkeeping exchange.

2.3.3 Oracle Order Management

Oracle Order Management [6] drives the request satisfaction procedure of any business. The open, work process based building design backings custom-made, mechanized satisfaction forms without customization.

The benefits provided are as follows:

- **Improve Sales Visibility** - Sale operators have entry to precise and complete data through a solitary archive lodging every pertinent deal exchanges.
- **Increase Customer Satisfaction** - Clients are engaged through self-administration status following usefulness, available on the Internet.
- **Expedite Sales Cycles** - Blanket sales agreements partner client requests (discharges) with prenegotiated terms and volume duties.

2.3.4 Oracle Manufacturing

Oracle Manufacturing [6] helps firms better oversee creation operations to accomplish satisfaction incredibleness. Manufacturing plants of all sizes and in all businesses can advantage from enhancing the administration of data in the whole generation cycle, from R&D to outline through work-in-methodology to cost and quality

administration. Adaptable creation can be attained to with blended mode assembling, form to-request (ETO/CTO) and venture based and other complex assembling modalities.

The benefits provided are as follows:

- **Align Manufacturing with the Value Chain** with coordinated creation arranging, planning and interest driven execution.
- **Achieve Operational Excellence** by coordinating the most recent business applications straightforwardly to shop floor generation and hardware status, utilizing information catch advancements.
- **Improve Productivity** with best-in-class adaptable assembling to advance operations.
- **Increase Visibility** into generation with cutting edge examination and part based dashboards to track status and parcel/serial parentage.
- **Collaborate Critical Production Information** for better choices from the shop floor to the top floor.
- **Enforce Quality and Compliance** underway control by enhancing documentation of procedure deviations and conformance.
- **Streamline worldwide assembling** ability with perceivability to worldwide stock to augment adaptability and choices for best-cost generation and satisfaction.

Chapter 3

ERP for Educational Institutions

ERP frameworks for advanced education [7] grow toward backing for key managerial and scholastic administrations. The center of such a framework ordinarily underpins negligible understudy organization (enrolment methodology and understudy enrolment, money related backing for understudies, understudy information), human asset administration (observing of workers) and account (bookkeeping, installments, ventures, spending plan). It is conceivable to incorporate some other project additional items, e.g. resources administration (contracts, sponsorships, awards, and so forth.) or for observing understudy and formative administrations of establishments.

3.1 Advantages

The primary focal points of ERP for advanced education organizations [7] are:

- Improved data access for arranging and dealing with the establishment.
- Improved administrations for the personnel, understudies and workers.
- Lower business dangers.
- Increased salary and diminished costs because of enhanced proficiency.

3.2 Stumbling Blocks

Late moves by open area associations to ERP frameworks [8] have been tormented by execution issues. The unforeseen — and regularly avoidable — challenges of executing an ERP framework can wind up dominating the outcomes. For education organizations, cases of these hindrances include:

- **Generic Functionality** - Numerous ERP frameworks are "one size fits all" bundles intended for any business to execute with least customization. The issue, particularly for open segment associations, is that these bland frameworks are normally not planned with the extraordinary needs of the school or school as a main priority. Adaptable, obliging private substances can figure out how to capacity well with a nonexclusive ERP framework, however the bureaucratic and arrangement contemplations confronting schools and advanced education foundations make bland frameworks bulky. Dissimilar to numerous private organizations, open segment associations can't change their techniques to fit the limitations of a framework. At the point when a training establishment tries to execute an ERP framework with bland usefulness that can't be effortlessly arranged, the outcomes can be terrible.
- **Delays** - One of the greatest grievances from open division associations is that the ERP framework appropriation methodology takes a nonsensically long time.
- **Ease of use** - Generic frameworks frequently wind up being exceptionally troublesome for the association's workers to utilize. Adopters are regularly mistaken and frustrated for new frameworks. Some end up overlooking them totally, falling back on old working strategies.

3.3 Characteristics

- **Intuitive** - School/school/area staff and teachers are sufficiently occupied, particularly considering the scaling down of faculty because of late spending plan cuts. ERP frameworks ought to be anything but difficult to utilize and oblige at least unique preparing to work.
- **Optimized for Education** - Education institutions have novel needs and working techniques. They likewise by and large have little in the monetary allowance for IT bolster. At last, bureaucratic and strategy obstacles make it troublesome for them to adjust to fit the requirements of an one-size-fits-all framework. Thus, their ERP frameworks ought to be redone from the earliest starting point.
- **Flexible** - College and school area working methodology are liable to intermittent (or continuous) bureaucratic and strategy changes, and the pattern toward

change implies new activities can appear whenever. ERP frameworks for instruction must be effortlessly versatile to fit evolving approaches.

- **Cost- and time-effective** - Time after time, inadequacies in ERP frameworks urge open elements to just relinquish the befuddling frameworks and backtrack to their old method for doing things. A framework might be utilized — and utilized well — in the event that it is outlined because of the attributes of the client. At exactly that point will the advantages of utilizing the framework be justified regardless of the expense and time connected with introducing and learning it. Rate of return (ROI) must be obvious.
- **Cutting-edge, scalable** - Open instructors can't bear to update innovation often times. ERP frameworks for schools must be as new and versatile as could reasonably be expected. Who knows when the financing for an overhaul or substitution will show up, if at any time?

Various Business Activities which can be carried out through an ERP System are shown in Figure 3.1.

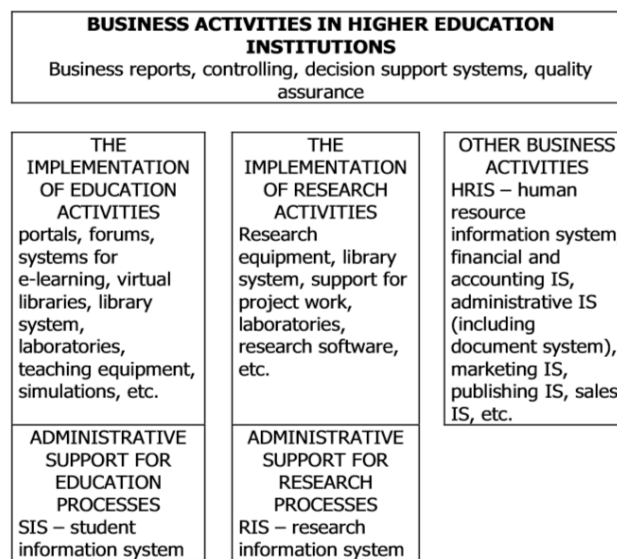


Figure 3.1: Business Activities in Higher Institutions [7]

3.4 Case Study - Financial Transaction Systems @ Stanford

Oracle Financials is the core of Stanford's Accounting System [9], allowing the University to conduct and manage its financial affairs.

Key functions of the Oracle Financials system include:

- Preparing exchanges (repayments/ cost reports, buys, installments, billings, receipts and diaries)
- Getting movement from the PeopleSoft framework identified with understudy records and finance, recording it in the correct records, and sending bookkeeping data back to the PeopleSoft and Time and Leave frameworks
- Getting bookkeeping passages from other "feeder" frameworks (Development, Inter-office billings, and so on.)
- Making and posting distributions, for example, enrichment payout
- Following movement in stores, taking into consideration answering to patrons and benefactors, and departmental administration of trusts and uses.

Modules used by them are as follows:

- Accounts Payable
- Accounts Receivable
- Cash Management
- Enterprise Asset Management
- eBusiness Tax
- eSourcing
- Fixed Assets
- General Ledger
- Purchasing

Chapter 4

Conclusion

In this seminar report, we started with an introduction to Enterprise Resource Planning (ERP) solutions and why is there a strong need for today's globally-spread enterprises to incorporate these solutions in order to survive the highly-competitive market. In order to help them choose, numerous decision-taking factors were also mentioned. Also, various proprietary and open source ERP solutions available in market were also discussed and compared.

Following that, the focus was shifted to Oracle's E-Business Suite, specifically on Financials and Supply Chain Applications. The functions and integrations of the modules in both applications was thoroughly discussed.

At last, the possibility of incorporating ERP in Educational institutes was discussed. With the computerisation of business exercises in advanced education establishments ERP sellers immediately saw another business sector opportunity. Improvements or unimportant adjustments of these arrangements, which originated from the involvement in business practice were not generally effective. By keeping few factors in mind, education organizations can reap the substantial financial and operational benefits of a properly tailored and installed ERP system.

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