

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Basic Theory**

##### **2.1.1 Definition of System**

Based on Satzinger *et al* (2010, p6), A system is a collection of interrelated components that function together to achieve some outcome.

Based on Stair and Reynolds (2010, p8), System is a set of elements or components which consist of input, processing, output, and feedback that interact to accomplish goals.

From the definition above we could assume that a System is a group of interrelated component which consist of input, processing, output, and feedback that is integrated and working together to achieve some goals or outcome.

##### **2.1.2 Definition of Information**

Based on Stair and Reynolds (2010, p5), Information is a collection of facts organized so that they have additional value beyond the value of the individual facts.

Based on O'Brien and Marakas (2008, p24), Information is data that is replaced in a meaningful context and useful for end user.

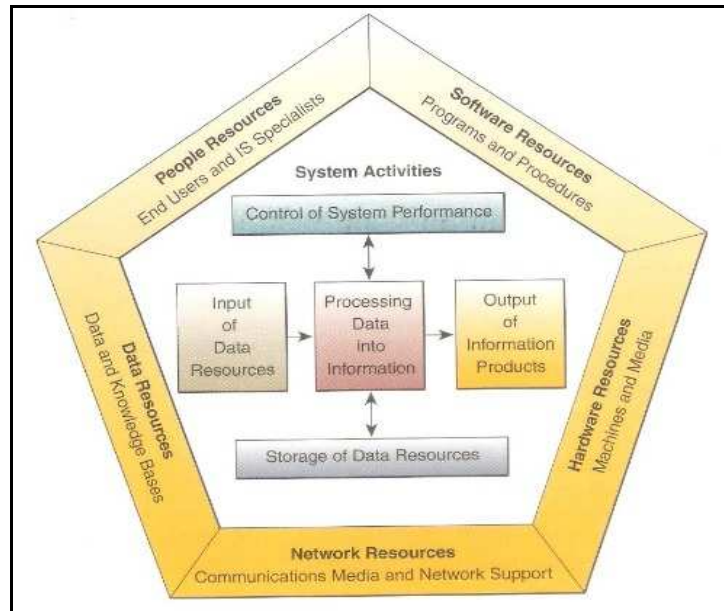
From the definition above we could assume that Information is combination of facts or organized data that have additional value and meaningful context and also useful for the end user.

##### **2.1.3 Definition of Information System**

Based on Satzinger *et al* (2010, p7), Information System is a connection of interrelated components that collect, process, store, and provide as output the information needed to complete business task.

Based on Stair and Reynolds (2010, p4), Information System is a set of interrelated components that collect, manipulate, store, and disseminate data and information and provide a feedback mechanism to meet an objective.

From the definition above we could assume that Information System is an organized combination of interrelated components such as hardware, software, communications networks, and data resources that collect, process, store and disseminate data and information and also provide feedback mechanism as the output of information needed to complete business task.



Picture 2.1 The components of an Information System

Source: O'Brien and Marakas, (2009, p29), Management Information Systems

## 2.1.4 Enterprise Resource Planning (ERP)

### 2.1.4.1 Definition of Enterprise Resource Planning (ERP)

Based on Sumner (2005, p1), ERP Systems is the software tools used to manage enterprise data and help organizations deal with the supply chain, receiving inventory management, customer order management, production planning, shipping, accounting, human resource management, and other business functions and according to Deloitte Consulting, ERP Systems is a packaged business software systems that allows a company to “automate and integrate the majority of its business processes; share common data and practices across the enterprise; and produce and access information in a real-time environment.” The ERP systems use to integrate enterprise-wide information supporting financial, human resources, manufacturing, logistics, and sales and marketing functions and also provide an

enterprise database where all business transactions are entered, processed, monitored, and reported.

Based on O'Brien and Marakas (2009, p309), Enterprise Resource Planning is a cross-functional enterprise system driven by an integrated suite of software modules that supports the basic internal business processes of a company. ERP gives company an integrated real-time view of its core business processes, such as production, order processing, and inventory management, tied together by the ERP application software and a common database maintained by a database management system.

From the experts' views above, we could conclude that Enterprise Resource Planning is cross-functional software tools used to manage enterprise data and help organizations to deal with all basic internal business processes by giving an integrated real-time view of its core business processes.

#### 2.1.4.2 History of Enterprise Resource Planning (ERP)

According to Sumner (2005, p2-3), the evolution of ERP divided into the following types:

Historical Evolution of ERP Systems			
<i>Types of Systems</i>	<i>Time</i>	<i>Purpose</i>	<i>Systems</i>
Reorder point systems	1960s	Used historical data to forecast future inventory demand; when an item falls below a predetermined level, additional inventory is ordered	Designed to manage high-volume production of a few products, with constant demand; focus on cost
Materials requirement planning (MRP) systems	1970s	Offered a demand-based approach for planning manufacture of products and ordering inventory	Focus on marketing; emphasis on greater production integration and planning
Manufacturing resource planning (MRP-II) systems	1980s	Added capacity planning; could schedule and monitor the execution of production plans	Focus on quality; manufacturing strategy focused on process control, reduced overhead costs, and detailed cost reporting
MRP-II with manufacturing execution (MES) systems	1990s	Provide ability to adapt production schedules to meet customer needs; provide additional feedback with respect to shop floor activities	Focus on the ability to create and adapt new products and services on a timely basis to meet customers' specific needs
ERP (enterprise resource planning) systems	Late 1990s and onward	Integrate manufacturing with supply chain processes across the firm; designed to integrate the firm's business processes to create a seamless information flow from suppliers, through manufacturing, to distribution to the customer	Integrates supplier, manufacturing, and customer data throughout the supply chain

Picture 2.2 Historical Evolution of ERP Systems

Source: Sumner (2005, p3), Enterprise Resource Planning

In the 1960s, most software packages included inventory control capability. Material Requirements Planning (MRP) systems, which were introduced in the 1970s, used a master production schedule and a bill of materials file with the list of materials needed to produce each item (see Picture 2.2). Later on, MRP systems were enhanced by adding tools for sales planning, customer order processing, and rough-cut capacity planning-which provided input into production scheduling, known as closed-loop MRP. In the 1980s, MRPII systems incorporated the financial accounting system along with manufacturing and materials management systems.

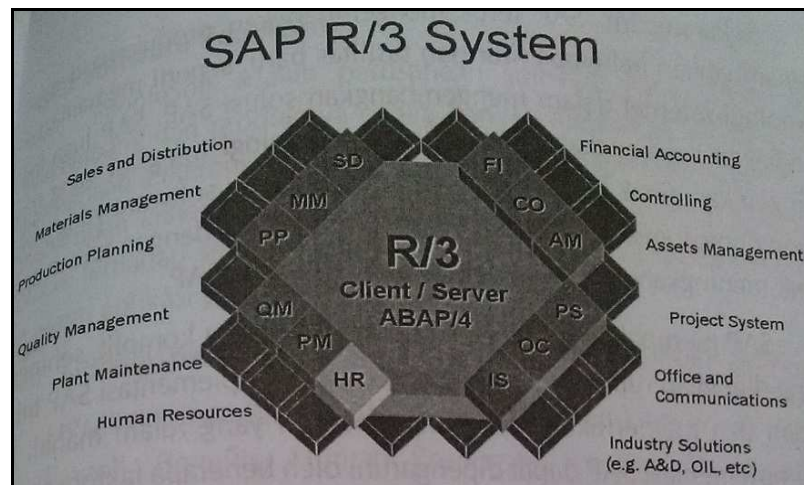
MRPII led the way toward an integrated business system that developed the material and capacity requirements for production and translated these requirements into financial information. By the 1990s, ERP systems provided seamless integration of all information flows in the company-financial accounting, human resource, supply chain management, and customer information. An ERP system overcomes the inefficiencies of independent systems and non-integrated data by providing integrated data to support multiple business functions.

## **2.1.5 System Applications and Products in Data Processing (SAP)**

### **2.1.5.1 Definition of SAP**

Based on Hernandez (1997, p3), SAP is the company name stands for Systems, Applications, and Products in Data Processing. SAP R/3 has been introduced in 1992 and SAP became world's leading vendor of standard application software. One of the reasons for SAP's success is that since it is a standard package, it can be configured in multiple areas and adapted to the specific needs of a company. To support the needs, SAP includes a large number of business functions, leaving room for further functionality and enhancements or adaptability to business practice changes. More and more, corporations are deciding to use standard software systems that are highly flexible and configurable and able to support most of their business practices and information needs.

Based on Santo F. Wijaya dan Suparto Darudiato (2009, p150), SAP Software is one of the popular ERP systems in Indonesia. SAP was founded around 1975 in Germany by five former IBM employees. SAP actually stands for the German language, which *Systeme Anwendungen Produkte in der Datenverarbeitung* or in English SAP stands for *Systems Applications Products in Data Processing*. SAP consists of several integrated modules, covering SAP ERP Enterprise Core, which is an ERP application solution, and SAP Business Suite, which is a package of e-business applications such as SAP Customer Relationship Management, SAP Supply Chain Management, SAP Supplier Relationship Management, SAP Product Lifecycle Management. In general, users of ERP systems application are from mid-sized companies. SAP is the worldwide market leader with a market share reached 65%. Nowadays, SAP provides packages of ERP solutions for small to medium companies, such as SAP Business One and SAP All In One.



Picture 2.3 SAP System Products

Source: Santo F. Wijaya and Suparto Darudiato (2009, p151), ERP (Enterprise Resource Planning) & Solusi Bisnis

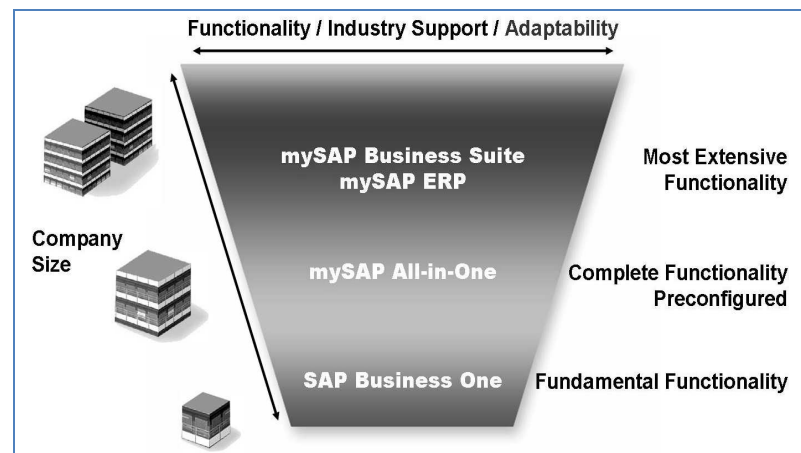
In the implementation of SAP, it is all talk about generic process. So when a company has a unique business process, then they need to do slight modifications, they can do with the enhancement develop multiple applications using ABAP programming. ABAP is a

programming language that is used in SAP software. ABAP is used usually have little differences in several modules, such as between HR and FI module. In the HR module, we can find infotype but in the FI module we can't find it.

For companies that do not make modifications, SAP provides enough flexibility with many configurations. The configuration is rather difficult to learn. The best way to learn is directly plunge into the SAP implementation project. The person who does the configuration is a functional consultant. Today, SAP keep continues to improve their products by adding some new features and facilities, such as using the technology of internet in developing SAP solutions. And the collaboration between SAP and several providers of associated software also ensures that SAP's business solutions and other application systems can communicate smoothly.

### 2.1.5.2 SAP Products

SAP offers a large palette of products for companies of all sizes. SAP provides scalable products that can be adjusted to the size and constantly changing processes of a company. These are the SAP Products:



Picture 2.4 Different Sizes – Different Products

Source: Anonymous 1. (2006, p17), SAP01 Fundamental

1. **mySAP Business Suite:** offers a flexible software solution for larger companies that have a large number of users and processes that are constantly changing.
2. **mySAP All in One:** is suitable for vertical (industry-specific or country-specific) solutions and the complete function of module can be preconfigured.
3. **SAP Business One:** is suitable for small company and the application only have basic module just like an interface that is similar to Microsoft Windows. ([Anonymous 1])

### 2.1.5.3 SAP Modules

In SAP, each system also consists of many modules. For example, The popular SAP R/3 has been already used in almost half major worldwide companies to support the daily business processes activities.

According to Santo F. Wijaya and Suparto Darudiato (2009, p29), modules that provided by SAP R/3 are:

#### 1. Financials

- Financial Accounting (FI)
- Controlling (CO)
- Fixed Assests Management (AM)
- Project System (PS)
- Enterprise Controlling (EC)
- Real Estate Management

#### 2. Logistics

- Sales and Distribution (SD)
- Material Management (MM)
- Plant Maintenance (PM)
- Customer Service (CS)
- Production Planning and Control (PP)
- SAP Retail

### 3. Human Resources

- Personnel Management (PA)
- Personnel Time Management (PM)
- Payroll (PY)
- Training and Event Management (PE)

Generally, various modules of SAP can support business process in company (manufacturing, retail, oil and gas, electricity, health care, pharmaceutical, banking, insurance, telecommunications, transport, automotive, chemical, and many more). The various modules do not have to be implemented whole, but consider with the requirements of the business processes in the company. In addition, modules and settings implemented will be different between one and the other companies, because the company's business processes can be unique, although it engaged in similar line of business.

## 2.2 Specific Theory

### 2.2.1 mySAP Human Capital Management

To compete effectively, you need to align all corporate resources including employees with business objectives. You need to transform traditional human resources (HR) functions into a comprehensive program for human capital management (HCM). With mySAP ERP Human Capital Management (mySAP ERP HCM), you can maximize the value of your employees and align employee skills, activities, and incentives with business objectives and strategies. mySAP ERP HCM also provides the tools to manage, measure, and reward individual and team contributions. ([Anonymous 1])



Picture 2.5 mySAP ERP Human Capital Management

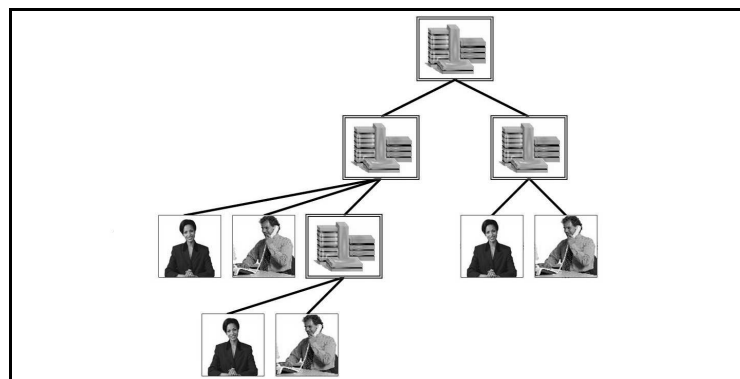
Source: Anonymous 1. (2006, p327), SAP01 Fundamental

### 2.2.1.1 Organizational Management

Organizational Management use to quickly and effectively map the organizational structure and reporting process with the relevant organizational objects. The organizational management consists of:

#### 1. Organizational Plan

An organizational plan provides a model of structural and personnel environment at the enterprise. The organizational plan can be create using several types of objects and relationships.

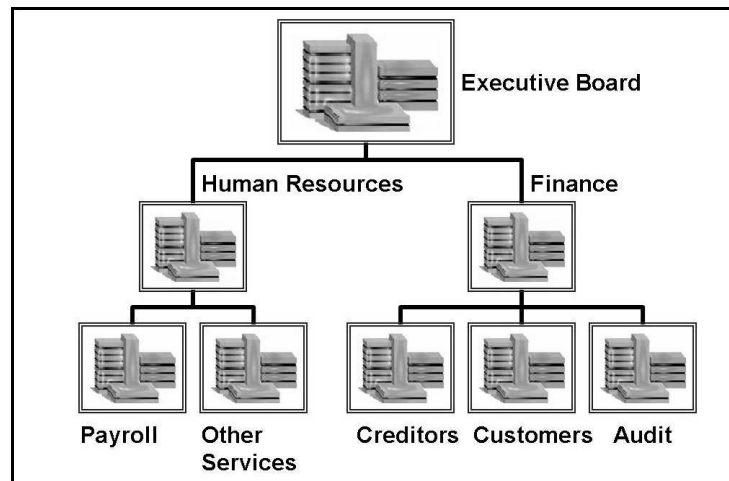


Picture 2.6 Organizational Plan

Source: Anonymous 2. (2006, p35), HR050 Business Processes in Human Capital Management.

### a. Organizational Units

Organizational units describe the various business units in your organization. Several organizational units, along with their relationships, make up the organizational structure. Organizational units can be divided according to functional or regional criteria, for example.

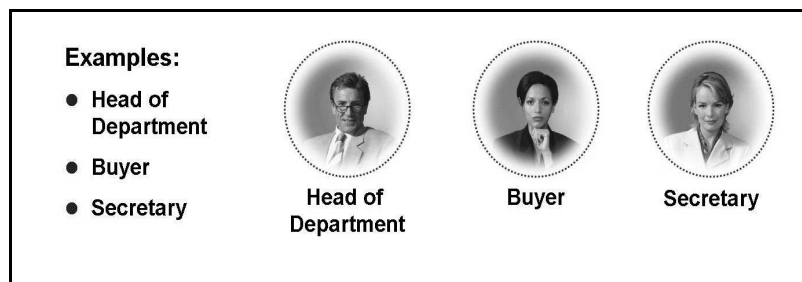


Picture 2.7 Object Types: Organizational Units

Source: Anonymous 2. (2006, p36), HR050 Business Processes in Human Capital Management

### b. Jobs

Jobs are general descriptions or templates that apply to several positions with comparable requirements, tasks, and characteristics.



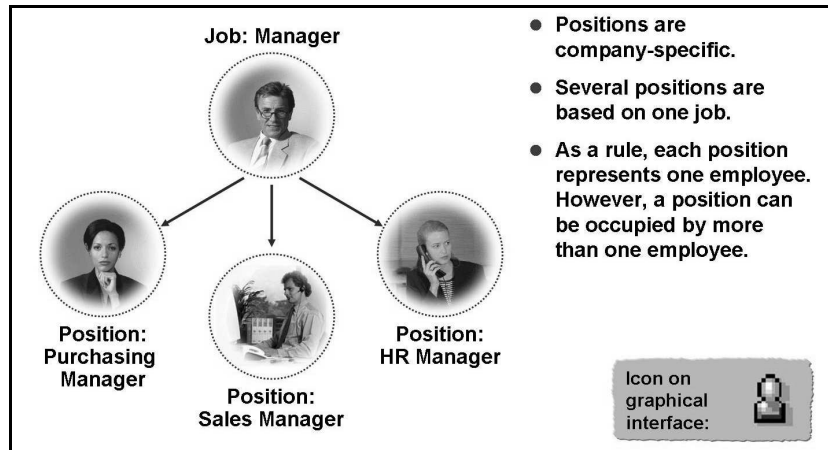
Picture 2.8 Object Types: Jobs

Source: Anonymous 2. (2006, p37), HR050 Business Processes in Human Capital Management

Each job represents a unique classification of responsibilities in your organization. When you create jobs, you should consider what specific tasks and requirements are associated with the individual jobs.

#### c. Positions

Positions are the smallest organizational units of the organizational structure. They represent the distribution of tasks amongst individual employees in the organization. Positions are occupied by persons. A position inherits the tasks and requirements of the job from which it was defined.

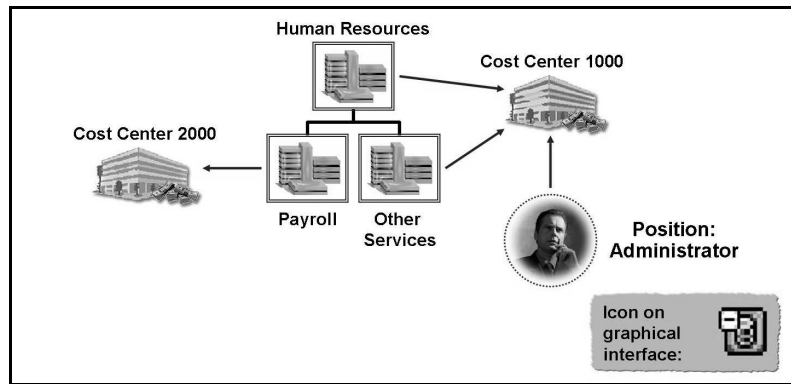


Picture 2.9 Object Types: Positions

Source: Anonymous 2. (2006, p38), HR050 Business Processes in Human Capital Management

#### d. Cost Centers

Cost Centers are maintained in Controlling and can be linked to either organizational units or positions. Cost center assignments are inherited along the organizational unit structure.

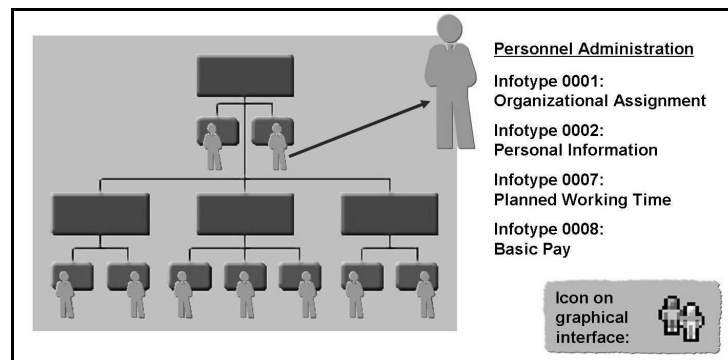


Picture 2.10 Object Types: Cost Centers

Source: Anonymous 2. (2006, p39), HR050 Business Processes in Human Capital Management

e. Persons

Persons occupy positions within the organizational structure which is governed by Organizational Management. They represent the employees in your organization. The employee data itself is maintained in Personnel Management. By assigning occupants to positions, you specify which employees occupy which positions. ([Anonymous 1])

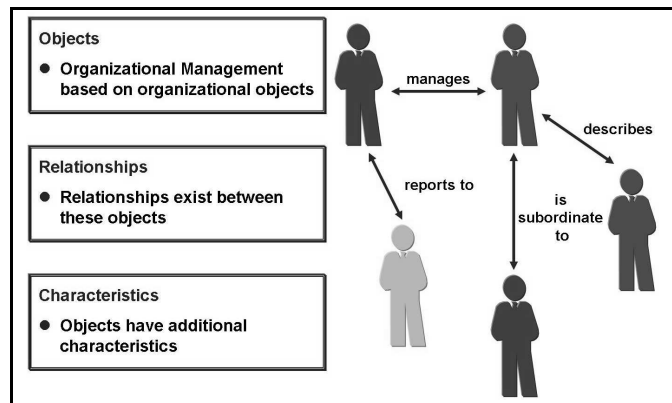


Picture 2.11 Object Types: Persons

Source: Anonymous 2. (2006, p39), HR050 Business Processes in Human Capital Management

Organizational Management is based on the concept that every element of the organization constitutes a unique object with individual attributes. Organizational Management can create and maintain each object individually. It can create relationships between the various objects

to form a framework for the organizational plan. This condition can give a flexible basis for personnel planning, previewing, and reporting.



Picture 2.12 Methodology – Object

Source: Anonymous 2. (2006, p40), HR050 Business Processes in Human Capital Management

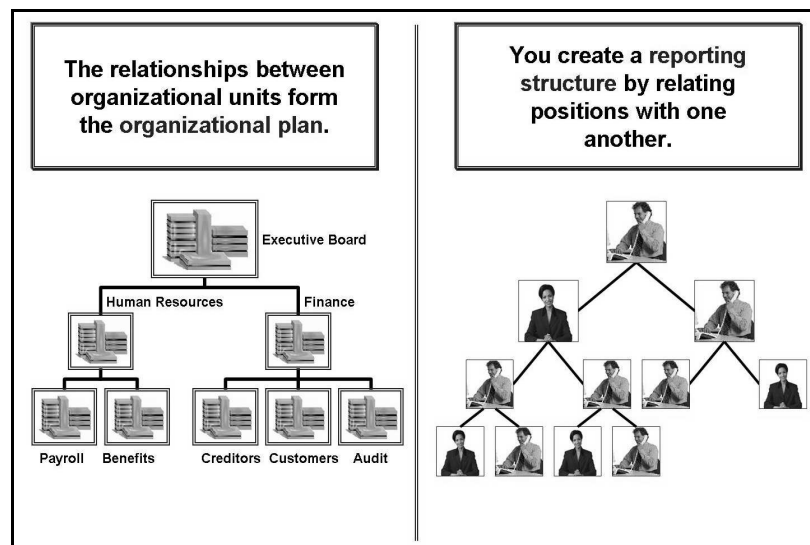
Organizational Management provides a comprehensive view of your enterprise in the past, present, and future. The information can give a sound basis on which plan and react to future personnel changes and requirements.

## 2. Organization and Staffing

Organizational Plans are defined in Organizational Management. That can be done in Organization and Staffing. The function of Organization and Staffing is create organizational units, positions, jobs, and tasks quickly and easily. Organization and Staffing creates the relationships automatically. By seeing the Organizational and Staffing, Organizational Management can provide evaluation paths and reporting.

- Evaluations in Organizational Management always need a start object and an evaluation path. The evaluation path determines which relationships the system should use to reach a different object such as: Person (P), Organizational Unit (O), Position (S), Cost Center (K), Job (J), Functional Area (FN), etc.

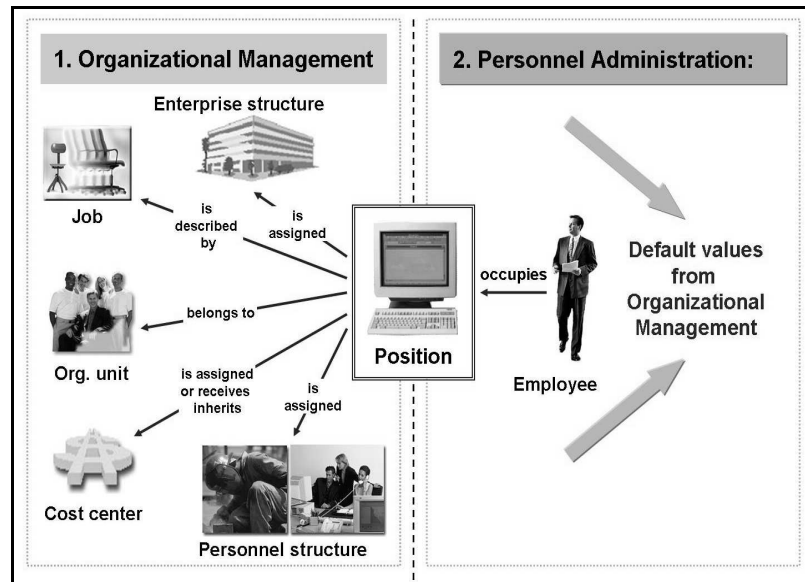
- Reporting structures represent only a fraction of the reporting functionality that is available in Organizational Management. Various reporting can be find under the Information System menu in Organizational Management. The Information System menu organized according to different object types. The organizational plan can be find in the object type organizational unit. The reporting structure can be access from the object type position. Then, the staff assignments and the position description can be also find.



Picture 2.13 Reporting

Source: Anonymous 2. (2006, p52), HR050 Business Processes in Human Capital Management

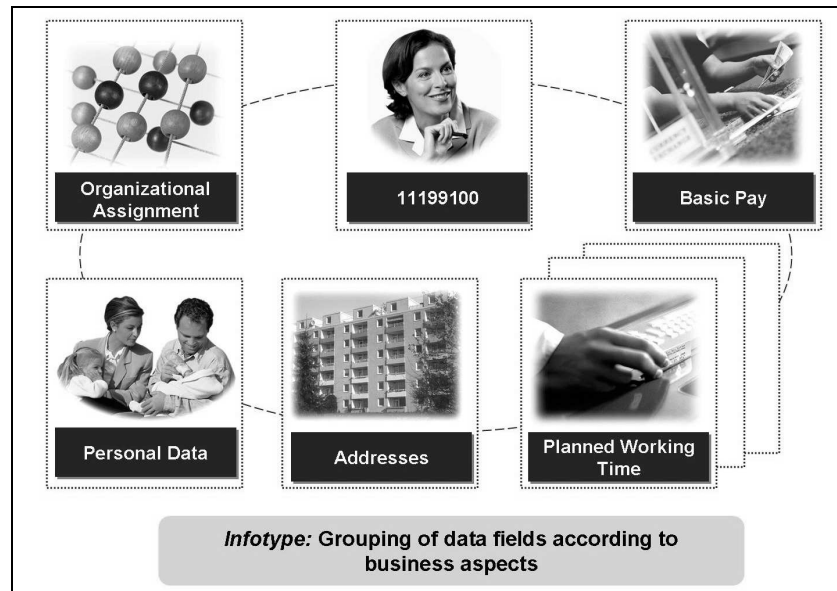
If Personnel Administration and Organization Management are integrated, the position can be enter in the Actions infotype (0000). The actions infotype must be maintained first. The fields job, organizational unit, or cost center. It specifies the relationship to the position. The default value in the organizational management can be supplied for the personnel area, personnel subarea, business area, employee group, and employee subgroup fields. ([Anonymous 2])



Picture 2.14 Integration of Personnel Administration and Planning  
 Source: Anonymous 2. (2006, p52), HR050 Business Processes in  
 Human Capital Management

### 2.2.1.2 Personnel Management

Integration between Recruitment and Personnel Administration enables the applicant data to be transferred as employee data. Employee data is stored in mySAP ERP HCM as infotype records. The infotype means information types. The infotype consists of data fields that are grouped into data groups or information units according to their content. The infotype data can be displayed, copied, corrected, and deleted. HCM administrators can select the infotype they want to view or edit from the user-specific infotype menu. Infotypes also have names and four-digit keys. One infotype is of central importance for employee data.



Picture 2.15 Infotypes

Source: Anonymous 1. (2006, p329), SAP01 Fundamental

From a technical point of view, infotypes and their data structure reflect a set of related data records. Infotypes can be maintained in various ways:

- Single-screen maintenance (one infotype for one person)
- Personnel actions (sequence of infotypes for one person)
- Fast entry (one infotype for multiple persons)

The employee data is assigned to three important structures: the enterprise structure, the personnel structure, and the organizational plan. ([Anonymous 1]).

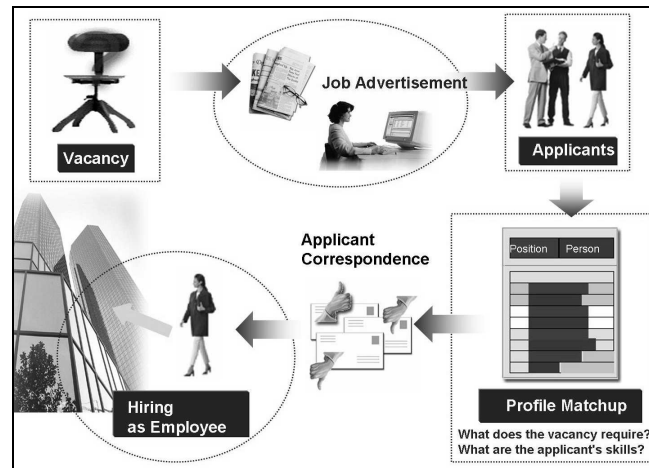
The enterprise structure for personnel administration is determined by the following elements:

- Client
  - A client can either be valid for a company code at the smallest level or for the entire corporate group.
- Company code
  - The company code is defined in accounting. Legally required financial statements such as balance sheets and profit and loss statements.

- **Personnel Area**  
A personnel area is an organizational unit in Personnel Administration. Each personnel area must be assigned to a company code.
- **Personnel Subarea**  
The personnel subarea is subdivisions of personnel areas. The principal organizational aspects of human resources are controlled at this level, namely the pay scale and wage type structures, and the planning of work schedule.

#### **2.2.1.2.1 Recruitment**

Recruitment component is use to carry out the entire recruitment process from entering applicant data to staffing a position. This applies both to external applicants, that is, new hires, and to internal employees changing position. The staffing requirements are represented by vacancies. Vacancies are positions that need to be filled, so that means that vacant positions are the trigger for the recruitment process. mySAP ERP HCM supports in representing staffing requirements, advertising, managing and selecting applicants, and applicant correspondence.



Picture 2.16 From Vacancy to Hiring

Source: Anonymous 1. (2006, p329), SAP01

#### Fundamental

As we can see on the picture above, process in Recruitment may involve the following step:

- The vacant positions are published in job advertisements.
- The applicants' data is entered in the system (name, address, qualifications, etc).
- A complex selection process takes place, culminating in a decision being made.
- The employment contracts are generated for the applicants who are to be hired.
- The applicant data is transferred to HCM master data.([Anonymous 1])

#### 2.2.1.2.2 Organizational Assignment

According to Anonymous 1 (2006, p27-28), Organizational Assignment components are used to assign the employee into the enterprise, personnel, and organizational structures. The information in this component is very important to authorization checking, input additional data, and for time management and payroll. In time of filling the organizational assignment, the employees will be

assigned to one Company Code, one personnel area, and one payroll area. The result of filling the organizational assignment is become the formation of an organizational unit, a job, and a cost center. The component is also record the changes of status or employee's position in personnel structure and organizational structure.

The changes of employee status are covered:

- Promotion is when an employee is moved from one job to another job with the higher responsibility, higher hierarchical level, and also greater salary. Promotions are based on job performance using the best results of work in current position or job. Promotions are based on job performance using the results of the work of the very well in the promotion or position now. There is no full guarantee that people are promoted really meets the expectations of the organization. That's why the mature analysis should be done.
- Mutation or duty transfer consists of two types, the first form is the placement of a person on a new task and new responsibility, but the hierarchy position and the salary is still same with the old status. And the other form is a worker doing the same or similar job, the salary and the responsibility is relatively same, only the physical location of employment is different.
- Demotion  
Demotion is a person who because of various considerations decreasing grade or position and the salary as well, also will receive smaller responsibilities. In general, demotion associated with the disciplinary sanctions in various reasons, such as:

- a. Negative evaluation by superiors because performance is not / less satisfied.
- b. Dysfunctional employee behavior, such as high absenteeism.

Another situation that can make the employee go into demotion are organizational activity decreased, either from internal or external factors, however it doesn't come to termination of employment. Other things that cause demotion to occur are request of the employee himself. An employee who fulfilled requirements is freed from termination because the organization does not longer need his service. Termination can be temporary because company is adapting with variation in market demand by the product.

The termination can also be permanent because company is closing business or moving to farther location. Company can also dismiss its employees because of senescence. Termination of work that comes from employee's side, in general for the company who involved won't get the obligation expenses. In contrary, the termination of work that comes from company, in general will create the obligation expenses for involved company in form of severance pay, hospital treatment, pension and etc. Nonetheless, if the termination is caused by employees' mistakes, for example: attempt of thievery therefore in general the company won't be given the obligation expenses.

### 2.2.2 Definition of SAP Methodology

According to Hernandez (2006, p540), ASAP has been the traditional framework for SAP's implementation of R/3 projects and it was extended to cover not only R/3, but other SAP solutions, such as CRM (Customer - Relationship Management), APO, e-procurement (SRM), and even a specific ASAP Roadmap for upgrade projects. Within the context of the SAP solution life cycle management, ASAP was the basic and more important methodology for the implementation of complex projects. However, ASAP goes beyond just a methodology and provides a large number of its own tools and utilities for simplifying the implementation process. ASAP can be traditionally complemented with SAP and SAP partners' implementation services, such as training, support, consulting, and so on.

Although there are different ASAPs for the mySAP solutions, the general phases are quite common to all of them, the main difference being the activities and tasks for building the business process maps and the configuration options. The path proposed by SAP to reach the goal of getting a fast return on investment and also accomplishing a fast and cost-effective implementation, which is based on the idea of facilitating a quick implementation of SAP applications and guaranteeing the quality. In the line with SAP strategy, the ASAP method of implementation is positioned according to the following objectives and strategies:

- ASAP is the SAP implementation solution directly developed and supported by SAP and its partners.
- ASAP offers a preliminary planning of the resource need – time, costs, people – based on the initial customer information and requirements.
- ASAP provides an optimal environment for many different SAP Solution projects, even upgrade projects.
- ASAP is aimed at end especially suited for those implementation projects where the number of changes to standard SAP applications is reduced to a minimum.

Based on SAP AG (2008, p6), The ASAP Roadmap is the project plan of the methodology. It's a well-defined and clear process-oriented project plan, providing a step-by-step guide during the life of the implementation project. The Roadmap is made up of five major phases, each one describing the main work packages, activities, and tasks to achieve the expected results. Together with the activities and tasks, ASAP provides all the process descriptions, tools, training, services, and documentation that will be useful for carrying out these activities.



Picture 2.17 ASAP Roadmap

Source: SAP AG. (2008, p4), ASAP: Proven Methodology for Fast, Successful Implementation

These are each definitions of Roadmap Phases:

1. Phase 1: Project Preparation

At the first phase, project preparation, the project mission and scope are defined some key issues of this phase are as follows:

- Define clear project objectives
- Reach total agreement on project issues among involved parties
- Establish an efficient process for making decisions and resolving conflicts
- Prepare the company for accepting cultural and process changes.

In this initial phase, the implementation project is planned and need to make all the preparatory steps, including setting the objectives for the project, determining the scope, defining the project plan, project team members and establishing the activities and sequence for the implementation activities. ASAP also pays particular attention to ensure the quality in the whole project process and decisions taken throughout the execution of this phase, because if there's any error or wrong decision can negatively affect the subsequent flow of the project and might produce delays, which means longer project time and higher costs.

## 2. Phase 2: Business Blueprint

In the second phase of the Roadmap, the project team undertakes a complete and comprehensive analysis of requirements and business process, while documenting and defining the SAP applications implementation in the company. Information gathered is critical and extremely useful for the project team, which can analyze and help to document the business processes and the future business requirements for the company. The purpose of this phase is to determine the project scope and create the Business Blueprint, the Business Blueprint documents, business process requirements and additional goals of the implementation.

## 3. Phase 3: Realization

With the Business Blueprint documentation generated as a result of the previous phase, the project team should be in good shape for starting the Realization phase, the main phase for translating business processes requirements into technical configuration settings, in other words, SAP customizing.

The purpose of this phase is to configure and test the business processes defined in the Business Blueprint phase and create customer specific end-user documentation and training materials. The documentation can help the consultants and project team members to

have enough information to make a valid proposal covering most business processes, reports, and daily business transactions, trying to match those of the SAP standard. If the processes are found that do not seem to cover perfectly the company's business procedures, reports, or transactions, requirements will be a matter of a fine configuration and tuning.

#### 4. Phase 4: Final Preparation

In the final preparation, all implementation elements and configurations are tested to finish the preparation for going live, requires a close collaboration between the full project team and the end users. Main objectives from this phase can be summarized as : verification of implementation, end – user acceptance, end – user training, initial data loads and cutover, and help desk strategy.

The purpose of this phase is to prepare and conduct end – user training and perform a final test of the SAP system before going live. It also need to prepare and execute data conversion from legacy systems to the production system.

#### 5. Phase 5: Go Live and Support

This phase starts the productive operation. The initial period after going live is the real evaluation period for everything done and designed in previous project phases. In most cases, it is recommended to have a progressive productive start, so there is time to react to typical problems during the initial period. The purpose of this phase is to move the SAP system to a live production environment, establish a help desk support organization for end users, and optimize the system performance and technical environment as far as possible. In this phase can also plan follow-up training and define an upgrade strategy to continually improve the SAP system.

### **2.2.3 Definition of Business Process**

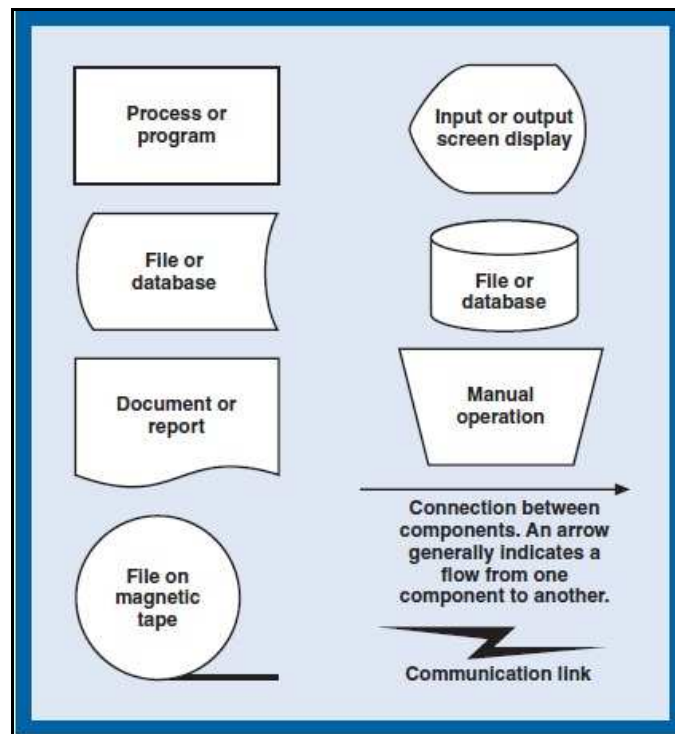
According to Hernandez *et al* (2006, p3), For SAP a business process is the complete functional chain involved in business practices. This means, specifically for SAP R/3 systems, that the process chain might run across different modules. The business processes and the integration chain can run across different services, which can be provided by SAP and non-SAP solutions.

### **2.2.4 Definition of Flowchart**

According to Marakas (2006, p125), the system flowchart is a diagram that specifies all programs, inputs, outputs, and data store accesses and retrievals and depicts the specific flow of control through an Information System. Flowchart is established a set of symbols that can be used to represent various system functions.

According to Satzinger *et al* (2010, p357), the system flowchart graphically describes the organization of the subsystems into automated and manual components, showing the flow of data and control among them. The system flowchart helps to document the application architecture, showing subsystems, inputs, outputs, and data storage.

From the definition above we could assume that, System flowchart is a diagram that describes the organization of the subsystems into automated and manual components by specifying all programs, inputs, outputs, and data store accesses and retrievals and depicts the specific flow of data and control through an Information System. These are the most common symbols that are used in system flowcharts:

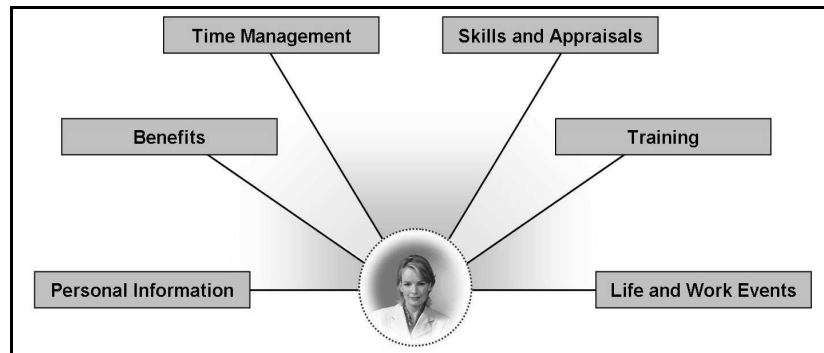


Picture 2.18 Common system flowchart symbols

Source: Satzinger et al, (2010, p358), Systems Analysis and Design in a Changing World

### 2.2.5 Definition of ESS

Using Employee Self-Service (ESS), employees maintain their own personal information and control many administrative transactions and other processes once handled by the HCM staff. The goal is to streamline approval processes and tasks like checking vacation time or choosing benefits. SAP ESS not only grants better access to personal data, it informs employees as they move through life and work changes, by combining applications with support information. The services can be incorporated in the user-friendly SAP Enterprise Portal. Employees can enter, display, and update their own data without being familiar with the HCM processes in the SAP system. ESS relieves the HCM department and time administrators of routine tasks.



Picture 2.19 Employee Self-Service

Source: Anonymous 1. (2006, p342), SAP01 Fundamental

The following employee information is available using SAP ESS:

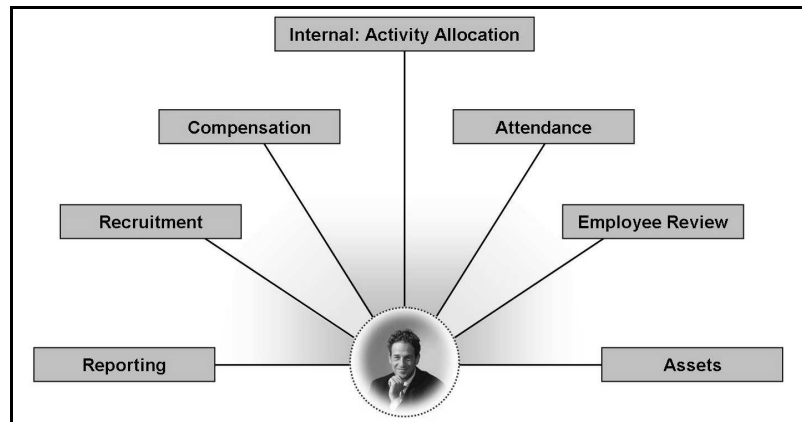
- Personal data (payroll, time management, travel expenses, qualifications, and so on)
- Public information (Who's Who, calendar, education and training offers, open internal vacancies, and so on)

Some benefits that are given from SAP ESS include:

- • Well-informed employee decisions
- • Reduced administrative costs and shorter cycle times
- • Accurate employee records
- • Time and resources saved for strategic HR initiatives

### 2.2.6 Definition of MSS

Manager Self-Service (MSS) is an intuitive, easy-to-use portal-based application that supports managers in their daily work. MSS comprises multiple intuitive Web applications that enable managers to display, create, and edit data in SAP systems using a browser. The tools automate paper-based processes, such as requests for master data changes or performance appraisals. It also leverages HR and financial back-end systems by making pertinent information available to managers throughout the enterprise.



Picture 2.20 Manager Self – Service

Source: Anonymous 1. (2006, p343), SAP01 Fundamental

SAP MSS covers the following subject areas:

- Employee reviews
- Employees' change requests
- Monitoring
- Reporting
- Recruitment
- Compensation planning
- Quota planning

The tool is also help the managers to accomplish the goals quickly and easily, which has a profound impact on the company. All managers will become more efficient, effective, and proactive. And these tools enable managers to run their departments in line with the enterprise's objectives. Central departments such as Controlling or Human Capital Management can make information available in the user's portal in a personalized way, so that managers will find the information in their portal, in the right place at the right time.

### **2.2.7 Definition of Legacy System Migration Workbench (LSMW)**

The LSMW (Legacy System Migration Workbench) is a tool based on SAP software that supports single or periodic data transfer from non-SAP to SAP systems (and with restriction from SAP to SAP system). Its core functions are:

- Importing legacy data from PC spreadsheet tables or sequential files
- Converting data from its original (legacy system) format to the target (SAP) format
- Importing the data using the standard interfaces of SAP (IDoc inbound processing, Batch Input, Direct Input)

The data that can be migrated using the LSMW are standard transfer program range of master data (such as: customer master, vendor master) and transaction data (such as: financial documents) or recording of transactions (if the transaction can be run in batch input mode). The migrate data is loaded via standard interfaces of the applications. This will include all checks that are run for online transactions so the invalid data will be rejected. ([http 2])

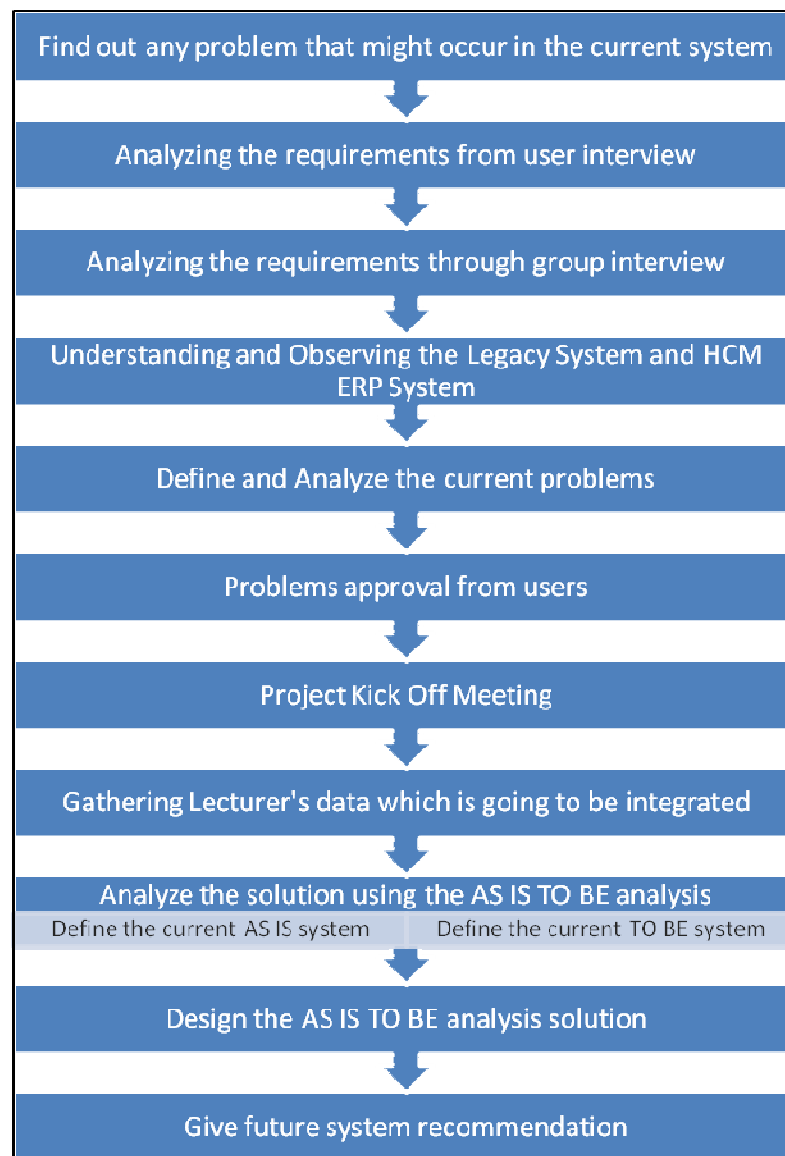
### **2.2.8 Definition of Sabbatical Leave**

Sabbatical leave is defined as a prolonged absence from work in the career of an academic employee granted for the purposes of approved scholarly or creative activity for professional development or research purposes. It provides a means for academic employees to increase their knowledge, further their research, stimulate intellectual interests and strengthen networks with the global community of scholars, thus enhancing their contribution to the University on their return. ([http 1])

### **2.2.9 Definition of Succession Planning**

According to Anonymous 2 (2006, p345), Succession Planning can be used to ensure a continuous supply of qualified personnel is available for jobs in the company. Succession planning is filled in based on jobs and involves selecting potential successors for the jobs and also preparing for the jobs. That means the succession planning functionality is to find suitable people (applicants) immediately for a specific object (job, positions, task).

### 2.2.10 Research Framework



Picture 2.21 Research Framework