

## ***ERP (Enterprise Resource Planning) - partial text***

An ERP is a back office system that uses various software and hardware computer components in order to integrate in a single unified system all processes and data of a company. Due to these facts, an ERP system provides benefits in terms of standardization and lower maintenance costs and it doesn't need at all external interfaces between components.

Basically, all the components of an ERP system are using a single database used to store data and run queries for all the applications. In our days, the monolithic ERP systems from the beginning become oriented on components using different architectures.

The ERP systems are typically used to cover a wide range of activities, like manufacturing, production, inventory, invoicing, distribution, pricing, shipping, marketing, sales, delivery, accounting, human resources management and so on.

A common approach for companies creating ERPs is to in-house develop only parts of the system together with the external interfaces need to interact with other ERPs or standalone applications. In such a way a client can benefit from the best applications for specific needs even if these applications are part of different ERP systems. For example, the financial modules can be purchased from Oracle, the production and inventory part from SAP and the other modules can be part of a different ERP system.

The major benefits of implementing an ERP solution are coming from the following facts:

- *Integrated financial information* – all persons from a company are using the same view over the financial data and the same reporting system. In such a way they may share a common understanding of the financial situation of the company and of the contribution to the global revenue;
- *Integrated HR information* – for large companies using multiple locations, the ERPs allow an unified method of tracking and communicating with the employees;
- *Speedup manufacturing process* – by using an ERP system, a company will be sure that all the units (geographically distributed or not) will use the same methods for specific manufacturing steps. This standardization will produce effects in productivity, efficiency, time and money areas;
- *Benefits regarding customers, orders and inventory management* – the existing tracking mechanism (if any) will be more efficient and it will allow following the path of orders inside the organization. On the other hand, the company will have a single and integrated management system for customers, orders and inventory.

In almost all cases, the implementation of an ERP system is very expensive and it involves a lot of analysts and consultants. The implementation costs can be reduced by taking the advantage of a professional help offered by companies specialized in ERP implementation.

On the other hand, the implementation of an ERP system can involve a great amount of resources in terms of time and money. Regardless the system price, there are also some hidden costs that should be taken into account, like the following:

- *training* – basically it is very expensive because workers should learn not only how to use a new software, but also they need to accommodate with new procedures, documents, data flows and so on;
- *Testing* – any new implementation represents a customization of a standard product. All the modules should be tested in order to be sure they are working as expected;
- *Integration* – all the interfaces developed for the communication between the ERP and other systems should be carefully verified. The company who implements the system must be sure no data is lost., corrupted or incorrectly used;
- *Customization* – represents the adaptation of an ERP system to a particular type of business. The modules are linked together so the changes should be propagated in the whole system. Also it is possible the client to ask for specific add-on, modules, functions that must be paid;
- *data migration* – from the previous system(s) to the current ERP implementation; The data from the past will be migrated to the current system using dedicated procedures that should be developed especially for the current implementation;
- *consultants and analysts* – they can hardly improve the implementation time but they also increase the costs; To move on from critical situations, the fees for consultants and analysts are very high but the impact of their actions over the system is significant;
- *Post implementation depression* – very often, the ERP implementation initially generates at employees' level a drop in performance because everything looks different than they know and the things are not familiar anymore. In time, this depression disappears and the user will start accommodating with the new system and its functions. If the people from different department don't agree the new procedures, data flows and documents, sooner or later the ERP implementation will fail because the employees will consider the previous system better than the current one and they will resist using the old software. The only arguments offered are about the usability. Such situations create political fights inside the company. The top and middle management should inform employees about all the benefits coming from the use of the new system in terms of money and efficiency.

Some well known ERP systems are Oracle e-Business Suite from Oracle, PeopleSoft from Oracle, SAP R/3 from SAP, mySAP from SAP, Microsoft Dynamics, JD Edwards EnterpriseOne from Oracle, BPCS from SSA Global Technologies. Also there are some open source implementations of ERP systems, like GNU Enterprise, ERP5 and OFBiz.