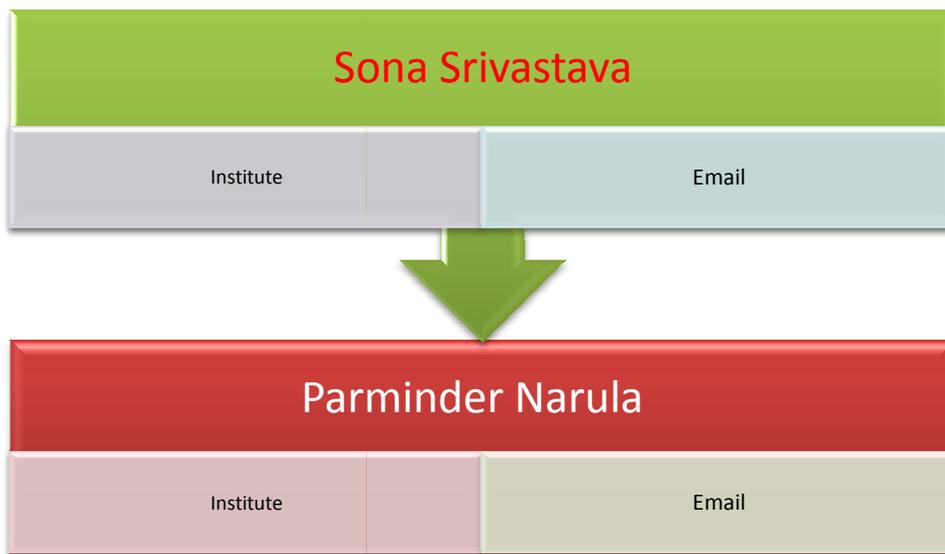




**Effective ERP deployment
in Public Sector Unit with
reference to Bharat
Heavy Electrical Ltd**



ABSTRACT

• Globalization presents both business and technology challenges. Companies find there is no silver bullet when responding to the increased complexity of the key performance resulting from globalization. In order to keep pace with the globalization public sector enterprises also adopted ERP which led to the implementation of SAP in PSUs. Enterprise Resource Planning (ERP) is a mission-critical component of any globalization strategy. The information made available through ERP is key to providing visibility to Key Performance. Enterprise Resource Planning systems are the new solution to business systems. These systems provide comprehensive business functionality in an integrated fashion using a state-of-the-art IT architecture. This trend towards enterprise systems in large and mid-sized organizations has a significant impact on IS careers paths. Enterprise systems essentially change fundamental business work processes thus implying that the system that supports these processes, design and development of these systems, also change, which resulted in numerous systems. The ERP system was hence installed in PSU like BHEL. This paper identifies opportunities for incorporating the ERP body of knowledge into an IS program in BHEL. . This is an exploratory research paper that tries to identify the effectiveness of ERP deployment in PSU with special reference to BHEL. We therefore conclude that profitable growth is the key consideration in corporate globalization efforts.

KEYWORDS

- CRM
- Supply Chain
- Back office systems
- Core system
- Customization
- Configuration
- BHEL
- PSU

Introduction:

ERP is a one-point source of information that can be used within an enterprise for various business functions like manufacturing, **supply chain management**, financials, projects, human resources and customer relationship management.

Enterprise resource planning (ERP) is a company-wide computer software system used to manage and coordinate all the resources, information, and functions of a business from shared [data stores](#). An ERP system has a [service-oriented architecture](#) with modular hardware and software units or "services" that communicate on a [local area network](#). The modular design allows a business to add or reconfigure modules (perhaps from different vendors) while preserving [data integrity](#) in one shared database that may be centralized or distributed. Companies that automate and streamline workflows across multiple sites (including suppliers, partners, and manufacturing sites) produced 66% more improvement in reducing total time from order to delivery, according to Aberdeen's 2007 study of the role of ERP in globalization. Those companies that coordinate and collaborate between multiple sites, operating as a vertically integrated organization, have achieved more than a 10% gain in global market share. The majority of companies studied (79%) view global markets as a growth opportunity, but of those companies, half are also feeling pressures to reduce costs. Of those seeking to reduce costs either directly or by providing the necessary flexibility to ship from more cost effective locations, 74% are also seeking growth opportunities.

Overview of ERP Solutions

Some organizations — typically those with sufficient in-house IT skills to integrate multiple software products — choose to implement only portions of an ERP system and develop an external interface to other ERP or stand-alone systems for their other application needs. For example, one may choose to use [human resource management system](#) from one vendor, and the financial systems from another, and perform the integration between the systems themselves.

This is common to retailers, where even a mid-sized retailer will have a discrete [Point-of-Sale](#) (POS) product and financials application, then a series of specialized applications to handle business requirements such as warehouse management, staff rostering, merchandising and logistics. Ideally, ERP delivers a single database that contains all data for the software modules, which would include:

- Manufacturing
- Supply chain management

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- Financials
- Project management
- Human resources
- Customer relationship management

ERP systems saw a large boost in sales in the 1990s as companies faced the Y2K problem in their legacy systems. Many companies took this opportunity to replace their legacy information systems with ERP systems. This rapid growth in sales was followed by a slump in 1999, at which time most companies had already implemented their [Y2K](#) solution.

ERPs are often incorrectly called **back office systems** indicating that customer and the general public are not directly involved. This is contrasted with front office systems like customer relationship management (**CRM**) systems that deal directly with the customers, or the e-business systems such as eCommerce, eGovernment, eTelecom, and eFinance, or supplier relationship management (SRM) systems.

ERPs are cross-functional and enterprise wide. All functional departments that are involved in operations or production are integrated in one system. In addition to manufacturing, warehousing, logistics, and information technology, this would include [accounting](#), [human resources](#), [marketing](#) and [strategic management](#).

ERP II means open ERP architecture of components. The older, monolithic ERP systems became component oriented EAS — Enterprise Application Suite is a new name for formerly developed ERP systems which include (almost) all segments of business, using ordinary Internet browsers

as thin clients. [Best practices](#) are incorporated into most ERP vendor's software packages. When implementing an ERP system, organizations can choose between customizing the software or modifying their business processes to the "best practice" function delivered in the "out-of-the-box" version of the software.

Prior to ERP, software was developed to fit the processes of an individual business. Due to the complexities of most ERP systems and the negative consequences of a failed ERP implementation, most vendors have included "Best Practices" into their software. These "Best Practices" are what the Vendor deems as the most efficient way to carry out a particular business process in an Integrated Enterprise-Wide system. A study conducted by Lugwigshafen University of Applied Science surveyed 192 companies and concluded that companies which implemented industry [best practices](#) decreased mission-critical project tasks such as configuration, documentation, testing and training. In addition, the use of best practices reduced over risk by 71% when compared to other software implementations.

The use of best practices can make complying with requirements such as [IFRS](#), [Sarbanes-Oxley](#) or [Basel II](#) easier. They can also help where the process is a [commodity](#) such as

[electronic funds transfer](#). This is because the procedure of capturing and reporting legislative or commodity content can be readily codified within the ERP software, and then replicated with confidence across multiple businesses that have the same business requirement.

Businesses have a wide scope of applications and processes throughout their functional units; producing ERP software [systems](#) that are typically complex and usually impose significant changes on staff work practices. Implementing ERP software is typically too complex for "in-house" skill, so it is desirable and highly advised to hire outside consultants who are professionally trained to implement these systems. This is typically the most cost effective way. There are three types of services that may be employed for - Consulting, Customization, Support. The length of time to implement an ERP system depends on the size of the business, the number of modules, the extent of customization, the scope of the change and the willingness of the customer to take ownership for the project. ERP systems are modular, so they don't all need be implemented at once. It can be divided into various stages, or phase-ins. The typical project is about 14 months and requires around 150 consultants. A small project (e.g., a company of less than 100 staff) may be planned and delivered within 3-9 months; however, a large, multi-site or multi-country implementation may take years. The length of the implementations is closely tied to the amount of customization desired.

To implement ERP systems, companies often seek the help of an ERP vendor or of third-party [consulting](#) companies. These firms typically provide three areas of professional services: consulting, customization and support. The client organisation may also employ independent [program management](#), [business analysis](#), [change management](#) and [UAT](#) specialists to ensure their business requirements remain a priority during implementation.

Data migration is one of the most important activities in determining the success of an ERP implementation. Since many decisions must be made before migration, a significant amount of planning must occur. Unfortunately, data migration is the last activity before the production phase of an ERP implementation, and therefore receives minimal attention due to time constraints. The following are steps of a data migration strategy that can help with the success of an ERP implementation:

- Identifying the data to be migrated
- Determining the timing of data migration
- Generating the data templates
- Freezing the tools for data migration
- Deciding on migration related setups
- Deciding on data archiving

Process preparation

ERP vendors have designed their systems around standard business processes, based upon best business practices. Different vendor(s) have different types of processes but

they are all of a standard, modular nature. Firms that want to implement ERP systems are consequently forced to adapt their organizations to standardized processes as opposed to adapting the ERP package to the existing processes. Neglecting to map current business processes prior to starting ERP implementation is a main reason for failure of ERP projects. It is therefore crucial that organizations perform a thorough business process analysis before selecting an ERP vendor and setting off on the implementation track. This analysis should map out all present operational processes, enabling selection of an ERP vendor whose standard modules are most closely aligned with the established organization. Redesign can then be implemented to achieve further process congruence. Research indicates that the risk of business process mismatch is decreased by:

- linking each current organizational process to the organization's strategy;
- analyzing the effectiveness of each process in light of its current related business capability;
- Understanding the automated solutions currently implemented.

ERP implementation is considerably more difficult (and politically charged) in organizations structured into nearly independent business units, each responsible for their own profit and loss, because they will each have different processes, business rules, data semantics, authorization hierarchies and decision centers. Solutions include requirements coordination negotiated by local [change management](#) professionals or, if this is not possible, federated implementation using loosely integrated instances (e.g. linked via [Master Data Management](#)) specifically configured and/or customized to meet local needs.

A disadvantage usually attributed to ERP is that business process redesign to fit the standardized ERP modules can lead to a loss of competitive advantage. While documented cases exist where this has indeed materialized, other cases show that following thorough process preparation ERP systems can actually increase sustainable competitive advantage.

Configuration

Configuring an ERP system is largely a matter of balancing the way you want the system to work with the way the system lets you work. Begin by deciding which modules to install, then adjust the system using configuration tables to achieve the best possible fit in working with your company's processes.

Modules — Most systems are modular simply for the flexibility of implementing some functions but not others. Some common modules, such as finance and accounting are adopted by nearly all companies implementing enterprise systems; others however such as human resource management are not needed by some companies and therefore not adopted. A service company for example will not likely need a module for manufacturing. Other times companies will not adopt a module because they already have their own proprietary system they believe to be superior. Generally speaking the greater number of modules selected, the greater the integration benefits, but also the increase in costs, risks and changes involved.

Configuration Tables – A configuration table enables a company to tailor a particular aspect of the system to the way it chooses to do business. For example, an organization can select the type of inventory accounting – [FIFO](#) or [LIFO](#) – it will employ or whether it wants to recognize revenue by geographical unit, product line, or distribution channel.

So what happens when the options the system allows just aren't good enough? At this point a company has two choices, both of which are not ideal. It can re-write some of the enterprise system's code, or it can continue to use an existing system and build interfaces between it and the new enterprise system. Both options will add time and cost to the implementation process. Additionally they can dilute the system's integration benefits. The more customized the system becomes the less possible seamless communication becomes between suppliers and customers.

Consulting services

Many organizations did not have sufficient internal skills to implement an ERP project. This resulted in many organizations offering consulting services for ERP implementation. Typically, a consulting team was responsible for the entire ERP implementation including planning, training, testing, implementation, and delivery of any customized modules. Examples of customization includes additional product training; creation of process triggers and workflow; specialist advice to improve how the ERP is used in the business; system optimization; and assistance writing reports, complex data extracts or implementing Business Intelligence.

"Core system" Customization vs Configuration

Increasingly, ERP vendors have tried to reduce the need for customization by providing built-in "configuration" tools to address most customers' needs for changing how the out-of-the-box core system works. Key differences between customization and configuration include:

- Customization is always optional, whereas some degree of configuration (e.g. setting up cost/profit centre structures, organizational trees, purchase approval rules, etc.) may be needed before the software will work at all.
- Configuration is available to all customers, whereas customization allows individual customer to implement proprietary "market-beating" processes.
- Configuration changes tend to be recorded as entries in vendor-supplied data tables, whereas customization usually requires some element of programming and/or changes to table structures or views.
- The effect of configuration changes on the performance of the system is relatively predictable and is largely the responsibility of the ERP vendor. The effect of customization is

unpredictable and may require time-consuming [stress testing](#) by the implementation team.

- Configuration changes are almost always guaranteed to survive upgrades to new software versions. Some customizations (e.g. code that uses pre-defined "hooks" that are called before/after displaying data screens) will survive upgrades, though they will still need to be re-tested. More extensive customizations (e.g. those involving changes to fundamental data structures) will be overwritten during upgrades and must be re-implemented manually.

By this analysis, customizing an ERP package can be unexpectedly expensive and complicated, and tends to delay delivery of the obvious benefits of an integrated system. Nevertheless, customizing an ERP suite gives the scope to implement secret recipes for excellence in specific areas while ensuring that industry best practices are achieved in less sensitive areas.

Extension

In this context "Extension" refers to ways that the delivered ERP environment can be extended with third-party programs. It is technically easy to expose most ERP transactions to outside programs, e.g.

- Scenarios to do with archiving, reporting and republishing (these easiest to achieve, because they mainly address static data);
- Transactional data capture scenarios, e.g. using scanners, tills or RFIDs, are relatively easy (because they touch existing data);

...however because ERP applications typically contain sophisticated rules that control how master data can be created or changed, some scenarios are very difficult to implement.

Maintenance and support services

Maintenance and support services involve monitoring and managing an operational ERP system. This function is often provided in-house using members of the IT department, or may be provided by a specialist external consulting and services company.

Advantages

In the absence of an ERP system, a large manufacturer may find itself with many software applications that cannot communicate or interface effectively with one another. Tasks that need to interface with one another may involve:

- Integration among different functional areas to ensure proper communication, productivity and efficiency
- Design [engineering](#) (how to best make the product)
- Order tracking, from acceptance through fulfillment
- The revenue cycle, from [invoice](#) through cash receipt
- Managing inter-dependencies of complex processes [bill of materials](#)

- Tracking the three-way match between [purchase orders](#) (what was ordered), [inventory receipts](#) (what arrived), and [costing](#) (what the vendor invoiced)
- The [accounting](#) for all of these tasks: tracking the [revenue](#), [cost](#) and [profit](#) at a granular level.
- ERP Systems centralize the data in one place. This eliminates the problem of synchronizing changes and can reduce the risk of loss of sensitive data by consolidating multiple permissions and security models into a single structure.

Some [security](#) features are included within an ERP system to protect against both outsider crime, such as [industrial espionage](#), and insider crime, such as [embezzlement](#). A data-tampering scenario, for example, might involve a disgruntled employee intentionally modifying prices to below-the-breakeven point in order to attempt to interfere with the company's profit or other sabotage. ERP systems typically provide functionality for implementing [internal controls](#) to prevent actions of this kind. ERP vendors are also moving toward better integration with other kinds of information security tools.

Disadvantages

Problems with ERP systems are mainly due to inadequate investment in ongoing training for the involved IT personnel - including those implementing and testing changes - as well as a lack of corporate policy protecting the integrity of the data in the ERP systems and the ways in which it is used.

- Customization of the ERP software is limited.
- Re-engineering of business processes to fit the "industry standard" prescribed by the ERP system may lead to a loss of competitive advantage.
- ERP systems can be very expensive (This has led to a new category of "ERP light" solutions)
- ERPs are often seen as too rigid and too difficult to adapt to the specific [workflow](#) and business process of some companies—this is cited as one of the main causes of their failure.
- Many of the integrated links need high accuracy in other applications to work effectively. A company can achieve minimum standards, then over time "dirty data" will reduce the reliability of some applications.
- Once a system is established, switching costs are very high for any one of the partners (reducing flexibility and strategic control at the corporate level).
- The blurring of company boundaries can cause problems in accountability, lines of responsibility, and employee morale.
- Resistance in sharing sensitive internal information between departments can reduce the effectiveness of the software.

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- Some large organizations may have multiple departments with separate, independent resources, missions, chains-of-command, etc, and consolidation into a single enterprise may yield limited benefits.
- The system may be too complex measured against the actual needs of the customers.
- ERP Systems centralize the data in one place. This can increase the risk of loss of sensitive information in the event of a security breach.

MRP vs. ERP — manufacturing management systems have evolved in stages over the past 30 years from a simple means of calculating materials requirements to the automation of an entire enterprise. Around 1980, over-frequent changes in sales forecasts, entailing continual readjustments in production, as well as inflexible fixed system parameters, led MRP (Material Requirement Planning) to evolve into a new concept: Manufacturing Resource Planning (or MRP3) and finally the generic concept Enterprise Resource Planning (ERP)

BHEL's IT prowess sets example for PSU sector

The company began its IT sojourn at a time when most other private players were still deliberating on whether to take the IT path or not and today boasts of an IT infrastructure that comprises of a Wide Area Network (WAN), usage of CAD/CAM tools in the designing process and a full fledged **ERP system** to be rolled out in the months to come.

BHEL with a product offering comprising of 180 products and offering systems and services catering to the needs of core sectors such as power, transmission, transportation including railways, defence, telecommunication, oil etc was established in Bhopal more than 40 years ago and is considered to be one of the first players in the electrical industry in the country. The company exports its products to more than 50 countries and registered a turnover of Rs 6347.8 crore in the fiscal year 2000-01.

The beginning of IT Soon after commencement of operations, BHEL realised the power of IT when in 1960 it underwent a massive technology transfer from countries such as USSR, USA and UK. Though the technology at this stage was still rudimentary, almost all units of BHEL underwent a complete makeover. This makeover covered practically every area of operations from design and documentation to manufacturing. As part of this transfer, the company also acquired all related computer programmes allowing it to rewrite codes to suit the India-specific working conditions.

IT in everyday operations.

Over the years, the IT tools in the company have been gradually upgraded in accordance with the requirements of the company and in tune with the technology scenario. Each of the company's manufacturing units have a strong

functional computerised system base supported by an appropriate IT infrastructure. The company, which was earlier using mainframe computers, has now replaced them with high-end servers and front-end PCs, which are used extensively across the organisation.

In addition to the above systems, being an engineering organisation, the company has been using PDMS, AutoCAD, CAM and other Computer Aided Engineering (CAE) tools. These tools, Jain points out, are acquired from Original Equipment Manufacturers (OEMs) only. The usage of these tools he says have helped in a faster rollout of products and have helped to ensure greater accuracy of the same.

In an effort to tackle the perennial problem of hacking and intrusion attempts, the company has well defined principles for the protection of its infrastructure and data. The company ensures that norms for computer security are defined and adhered to. All the Internet gateways are protected with firewalls, proxy server and intrusion detection systems. BHEL is presently using firewalls from Checkpoint. Anti-virus software provided on all nodes, desktops and servers are updated regularly. At present, the driving force for IT security in the company is the IT Act, e-commerce activities which encompass authentication, integrity, non-repudiation and confidentiality and lastly service availability.

Currently all manufacturing units of the company have a core team of IT professionals who are responsible for the IT infrastructure in their concerned unit. Each of the major operations in the units such as material management and finance also have their own systems professionals. At the corporate level, overall policy co-ordination is done by the Corporate Information Technology Group. At present, the company has over 1000 IT professionals working for them. In order to meet the business challenges of the future, some of the newer areas that are being considered for absorption into the IT infrastructure include the enterprise-wide computing systems, collaborative and concurrent engineering, simulation modelling and video conferencing.

BHEL unit launches ERP module Connectivity and BHEL on WAN With a huge set up comprising of 14 manufacturing units, 3 distinct business groups (catering to the power industry and international operations), 4 regional power centres, over 100 project sites, 8 service centres and 14 regional offices, one of the main problems faced by the company was connectivity. In an effort to tackle this problem head-on, the company developed and connected all its offices through a wide area corporate data network called 'BHELNET'.

To connect its various facilities, the company adopted various modes of communication. These included leased lines from VSNL, ISDN, PSTN dial-up and point-to-point leased lines and VSATs. Backed by these means, BHELNET supports applications such as e-mail, file transfer, Intranet applications, Web publishing, business applications and engineering of information applications.

At present all manufacturing units, service divisions and some important projects are connected over BHELNET. Together this number 27, with more expected to be connected soon. In addition to BHELNET, each of the major units of the company have their campus-wide backbone network supported by Local Area Network (LAN) for inter office and department connectivity for systems integration. From the mid 1990s, the company started introducing high speed LANs in various units, which include Gigabit and Asynchronous Transfer Mode (ATM) LAN.

B2B

On the Business to Business (B2B) front, BHEL has already initiated steps to facilitate B2B transactions between their manufacturers units and suppliers. This includes the 'Ancillary Development Department' of Trichy unit of BHEL, which has developed a system to carry out e-commerce activities. The various e-commerce systems that can be carried out leveraging this systems are purchase order, supply materials, completion accounting, work in progress (WIP) analysis, bill processing, material accounting and excise duty.

As a by-product of this system, a number of standard sub-queries are developed for retrieving data from the online Oracle database. Data that is required to be sent to subcontractors are transferred through e-mail attachments. The subcontractors can send requests for clarifications or assistance through the Web. Initiatives have also been taken up for development of the company level market place for e-procurement and e-sales. At the unit level, the e-commerce framework has been developed for acquirement of spares of specific products such as pulverizes valves, pumps and traction equipment.

ERP & Its Future Scope in BHEL

One of the most recent initiatives of the company has been the initiation of ERP implementation. "In order to keep pace with the new economy, the integration of business processes has become a necessity. To this end we decided to adopt a proven ERP package that would cover all our manufacturing units and business sectors." Accordingly, after evaluating a couple of packages, BHEL zeroed in from SAP, mySAP.com with Pricewaterhouse Coopers as the implementation partner. The company implemented the systems on a pilot basis for identified products. As part of this plan, the rollout of the pilot site . i.e. the valves plant at the Trichy plant has been going on in full steam and is expected to be complete by the end of the month.

The ERP solution is expected to be cover modules such as financial accounting (FI), treasury management, control, project systems, sales and distribution, logistics, Customer Relationship Management (CRM), materials management, production planning, quality management and plant maintenance. The servers to be used for the ERP system will include development server, ITS Server, integration (quality and testing) server, workplace server, business warehouse server, knowledge warehouse server, CRM server, network for PCs and servers. Along

with ERP adaptation in the manufacturing units, plans have also been chalked out for the implementation of CRM in the business sectors at Delhi.

The company has also embarked on a 100 percent IT literacy plan. It has drafted schemes aimed at imparting education at both the local and corporate levels. At the officer level, the IT literacy rate currently stands at 90 percent.

It was found that, "unlike other organisations, there was no resistance from the employees in using IT tools. In fact, the employees have displayed considerable interest in familiarising themselves with the same." The reason behind this is that the company is primarily a learning organisation.

The other factor being that a large number of machines in the company are computer controlled so the familiarity with IT tools is high. The company has also introduced a capsule computer education in all its training programmes for its professionals. As part of its effort to further the cause of IT literacy, the company is also offering soft loans to employees to buy PCs.

Benefits

The Company has to date invested crores of rupees into building up its IT infrastructure. But have there been any tangible benefits of the same? "In today's e-economy, IT plays an important role since each and everything is required in a digitised format. This holds more importance than ever in our case as it operates in the international market. One of the most visible benefits of our IT initiatives has been the better management of our working capital. The other benefits have been an improvement of operational efficiencies, such as production cycle reduction, inventory reduction, better product design and reduction in wastage of material, performance monitoring, customer care and after sales service."

With an aim to become the leading Indian Engineering Enterprise providing quality products, systems & services in the fields of energy, transportation, industry, infrastructure and other potential areas, the company has well-equipped facilities to carry out research. Some important research facilities are:

- Material Sciences Laboratory.
- Turbo-machinery Laboratory.
- Test facilities for clean coal technology.
- Ultra High Voltage Laboratory.
- Centre for Electric Transportation (with UNDP assistance).
- Welding Research Institute (with UNDP assistance).
- Ceramic Technological Institute (with UNDP assistance).
- Pollution Control Research Institute (with UNDP assistance).
- Fuel Evaluation Test Facility- (BHEL-USAID joint project)

Findings and conclusion:

- Bharat Heavy Electricals Limited (BHEL), hailed as one of the Navaratnas by the
- Government of India is all set to emerge as a global giant. Endowed with distinctive
- Competence in technology absorption, product development and manufacturing technology,
- the Company continues to play a vibrant role in the Indian power plant equipment market
- Even after the liberalization and opening up of the economy. BHEL supplied sets now account
- for 67,000 MW or 65% of the, country's installed power generating capacity. With 14
- manufacturing units and an annual production capacity of over 4000 MW for power plant
- equipment, the Company ranks among the most important power equipment manufacturers in the world.

ERP (SAP-HR) inaugurated in BHEL Bhopal unit

In a simple programmed was held at IFX conference hall in Bharat Heavy Electricals Limited, (BHEL), Bhopal unit ERP (SAP-HR) was inaugurated by RK Singh, Executive Director, BHEL, Bhopal. Inaugurating the momentous occasion of GO-LIVE of Systems, Application and Products - HR System, Singh said that this implementation is a matter of pride for our Corporation as this is one of the major HR Initiatives with a company-wide coverage. He said that the growth BHEL is registering today is because of the intensive strength and work culture of the employees of the company. Appreciating implementation of SAP – HR, he said that many of the issues related to organization can be resolved successfully with this kind of tool.

RSV Prasad said that in today's times HR is looking at itself not only as a Service Function but is aggressively trying to be a strategic partner in business. Due to growing complexities of business scenarios it is absolutely essential that all the resources are put to most optimum use. Winning organizations execute its core business functions economically than their competitors. He said that introduction of this system will help in taking quick decisions and strengthen HR Functions in the Company.

.The system will improve the business processes, provide agility and speed in the operations to deliver high quality service and thereby enhance customer satisfaction. The Tiruchirappalli complex of. BHEL, comprising the High Pressure Boiler Plant and the Seamless Steel Tube Plant at Tiruchirappalli, the Boiler Auxiliaries Plant at Ranipet and the Industrial Valves Plant at Goindwal has been expanding its product and technology profiles over the last three decades. Set up initially with technology support from Skoda Exports, Czechoslovakia, the plant updated the technology for its various products in the 1970's with a series of collaborations with leading equipment manufacturers in USA, Germany, Sweden and Switzerland. The boiler unit ratings have been steadily increased from 60 MW to 110 MW, 210 MW, 500 MW. BHEL Tiruchi has entered into technical collaboration with

a Leading Company in Germany to design, manufacture and supply higher capacity sub/super Critical once-through boilers of range 660 MW and above. Orders for a total of 583 boilers have so far been bagged by the Company of which 525 boilers have already been Commissioned.SNR Softech Limited provides SAP ABAP/4 support to BHEL. In the following areas:

- * Programming using ABAP/4.
- * Batch Data Communication.
- * SAP Script.
- * Logical Databases, ABAP Dictionary and ABAP Objects.
- * SAP Query
- * Info type Development
- * Customer Enhancements - User exits, BADI
- * HR Form Editor
- * Development of Classical and Interactive Reports (ALV, List Report)
- * Smart forms, ABAP Query

BHEL unit implements ERP package

Bangalore, Dec. 22

THE electronics division of Bharat Heavy Electricals Ltd (BHEL) here has successfully implemented ERP (Enterprise Resource Planning) software package integrating its core functions.

The ERP software has been sourced from SAP, Germany.

The implementation of the ERP package, as per its Strategic Plan 2007, will be taken up in a phased manner in other units of BHEL leading to an integration of their business processes, with its attendant benefits.

Implemented by a team of BHEL engineers with consultancy from Wipro in a record time of about six months, BHEL expects this package to deliver significant returns over the coming years, resulting in enhanced efficiency in execution of projects and improved services.

By enabling the transfer of uniform and accurate information between various departments and functions as well as with customers and vendors, BHEL is looking ahead after this implementation to lead to an effective integration of the business processes. Improved data availability and monitoring are also expected to facilitate quicker decision making process and finally result in improvement of various business results and enhanced customer satisfaction.

The electronics division is an ISO 9001, 14001 and OHSAS 18001 certified unit and is one of the major manufacturing divisions.

It manufactures modern automation systems for power plants and industries at its facilities at Bangalore.

It has diversified into other high technology areas like semi-conductor devices, solar photovoltaic's, telecommunication and defense.

HYDERABAD, Dec. 31 ,2002

BHEL Ramachandrapuram unit has put into operational mode its enterprise resource planning (ERP) module in its gas turbine section. It was formally launched on

Tuesday by the Executive Director, Mr A.N. Jagadeeswaran, and representatives of the IBM. BHEL had initiated work on a pilot ERP project named 'PROGRESS' for its gas turbine manufacturing operations in April 2002. The ERP software was sourced from SAP-India, while IBM Business Consulting Services provided the necessary guidance for the implementation. The ERP implementation is expected to lead to improved delivery times, cost control and inventory management apart from providing means to reduce dependence of human inputs, according to a BHEL release.

Conclusion:

In order to achieve the above objectives BHEL has intelligently adopted ERP in all the spheres of its operations. It assures us that Public sector units can also become a mile stone for other sectors by taking the best use of Information System. This has redefined working with all the functional groups performing in an integrated manner utilizing a common project and company database.

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