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**"TECHNOLOGIES FOR THE DEVELOPMENT OF MODERN
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TECHNOLOGIES FOR THE DEVELOPMENT OF MODERN IDEAS AND OPINIONS REGARDING WORLD TRENDS

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SUBSTANTIATION OF THE IMPORTANCE OF THE ROLE OF USING INFORMATION TECHNOLOGIES IN BUSINESS PROCESS REENGINEERING

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Reengineering is a fundamental rethinking and radical redesign of business processes to achieve dramatic, leaps and bounds improvements in the main modern indicators of the activities of organizations, including IT [1], such as cost, quality, service and pace. Reengineering involves the redesign of processes, which allows you to transfer the enterprise to a more efficient mode of operation.

A business process (BP) is a set of interrelated operations for the manufacture of finished products or the performance of services based on the consumption of resources. Managing business processes means providing quality service to consumers or customers. All financial, material, and information flows in the course of business process management are always considered in interaction [2].

The tasks of reengineering are as follows:

- to unite information resources of structural divisions of the company;
- to create an integrated corporate information management system.

Key success factors for reengineering are presented in Figure 1.

A business process can be identified through the characteristics of the result, which is transformed and created by the system in question. For example, developing a product and turning it into an end result can be viewed as a process. Reengineering focuses on the entire process, from the conceptual stage of a product to the final design. Focusing on the process provides an opportunity to reengineer the process or radically reduce the number of steps required to complete the process with the help of modern information technology [3-4].

There are three categories of change that the use of information technology provides:

- changes to improve the temporal characteristics of processes without modifying their content. Such changes will automate work, reduce manual labor, and analyze data with new methods that are simply impossible to implement manually. Of course, these methods are not revolutionary, but their significance is undeniable;
- changes covering cases of reorganization of the sequence of steps for performing tasks in business processes;
- changes that allow you to control each specific instance of the process and identify places where any problems arise [5].

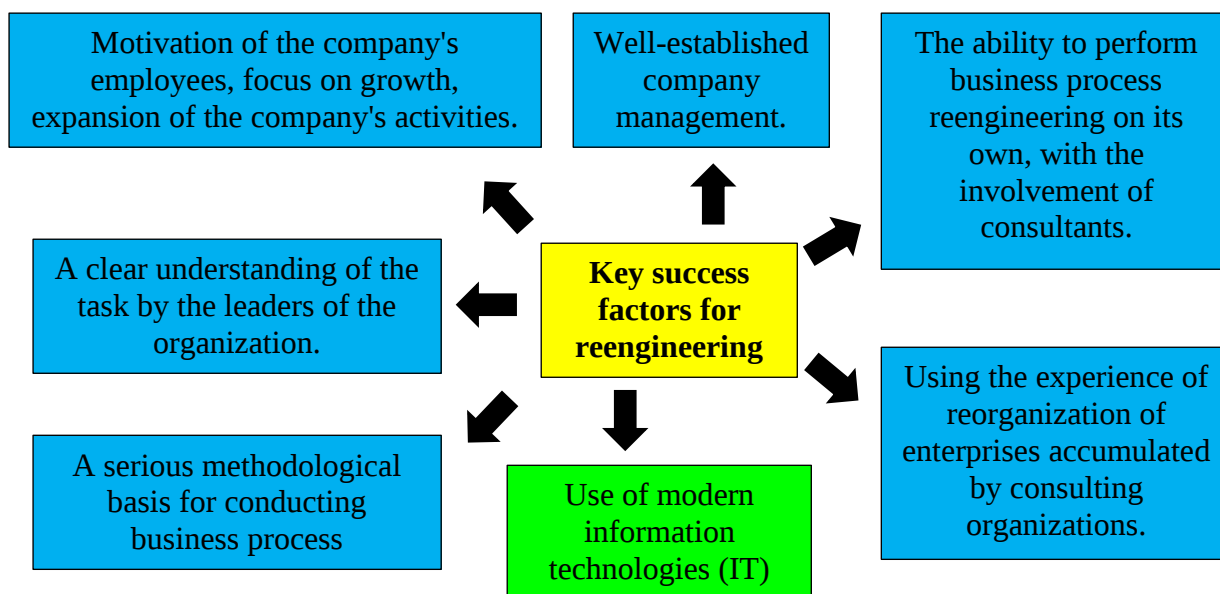


Figure 1. Key success factors for reengineering

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Information technology plays a critical role in the business process reengineering (BPR) process. BPR involves a radical redesign of business processes to achieve significant improvements in performance, efficiency and effectiveness. Several key uses of information technology in business process reengineering are presented in Table 1.

In business process reengineering, information technology plays an important role in integrating different functional areas to reduce cycle times for the delivery of goods or services.

Information technology can be used to model and analyze business processes and then to reengineer those processes. The introduction of BPR to radically change the production strategy requires an appropriate attitude to change and the serious participation of both individuals and groups of employees. The main aspect of BPR is the human factor [6-7], so companies must properly motivate employees, and the technologies necessary for training must be available.

Table 1

Key ways to use information technology in business process reengineering

No	Name of the key method	Characteristic
1	2	3
1	Process Analysis and Mapping	Information technologies are used to analyze, document, and map out existing business processes. Software tools can help create visual representations of current workflows, highlighting inefficiencies and bottlenecks.
2	Workflow Management Systems (WMS)	These systems automate, monitor, and optimize business processes. They allow organizations to streamline and control the flow of tasks, data, and documents, enabling better coordination among different teams and departments.
3	Enterprise Resource Planning (ERP):	ERP systems integrate various business functions and data into a unified platform. During reengineering, organizations might implement or upgrade ERP systems to ensure seamless information flow and improved collaboration across departments.
4	Customer Relationship Management (CRM)	CRM systems help manage customer interactions and data. As part of BPR, organizations might leverage CRM to enhance customer service, sales, and marketing processes.
5	Business Process Management (BPM) Software	BPM software enables organizations to design, model, execute, and monitor processes. It facilitates process optimization and supports continuous improvement efforts.
6	Data Analytics and Business Intelligence	Technologies for data analysis and business intelligence provide insights into process performance, helping organizations identify areas for improvement and make informed decisions.
7	Cloud Computing	Cloud-based solutions can provide scalability, flexibility, and cost-efficiency, allowing organizations to adapt to changing business needs during the reengineering process.
8	Collaboration Tools	Various digital collaboration tools, such as project management software, communication platforms, and virtual meeting solutions, help teams work together effectively during the reengineering process.
9	Artificial Intelligence (AI) and Machine Learning	AI technologies can be used to automate routine tasks, make predictions, and enhance decision-making, contributing to process optimization and innovation.

1	2	3
10	Internet of Things (IoT)	In some industries, IoT devices can provide real-time data that aids in monitoring and optimizing processes, leading to increased efficiency and reduced downtime.
11	Mobile Applications	Mobile apps can enable employees to access and interact with processes and data from anywhere, enhancing flexibility and responsiveness.
12	Robotic Process Automation (RPA)	RPA involves automating repetitive tasks using software robots, freeing up human resources for more value-added activities.

It's important to note that the successful implementation of information technologies in business process reengineering requires a strategic approach. Organizations need to carefully plan, align technology with business goals, and ensure that employees are trained and engaged in the process. Additionally, a culture of continuous improvement and adaptability is essential to leverage these technologies for sustainable success.

Sure, let's take an example of how information technology can be used in the context of business process reengineering. Example: E-Commerce Order Fulfillment Process.

Situation before Reengineering: A retail company operates an e-commerce platform for selling products online. The order fulfillment process involves manual entry of orders, manual inventory tracking, and separate communication channels with warehouses and shipping partners. This leads to delays in order processing, frequent stockouts, and customer dissatisfaction due to inaccurate delivery estimates.

Application of Information Technology for Reengineering:

1. **Integrated E-Commerce Platform.** The company implements an integrated e-commerce platform that connects the online storefront, inventory management system, and order processing system. This enables real-time updates of product availability and seamless order processing.

2. **Automated Order Processing.** Orders from the e-commerce website are automatically captured in the system, reducing the need for manual data entry and minimizing errors.

3. **Inventory Management System.** The company adopts an advanced inventory management system that uses barcode scanning and RFID technology to track stock levels accurately. This allows real-time visibility into available products and helps prevent stockouts.

4. **Warehouse Management System (WMS).** A WMS is introduced to optimize warehouse operations. It uses mobile devices for picking, packing, and shipping, streamlining the fulfillment process and reducing errors.

5. **Real-time Tracking:** The company integrates with shipping carriers to provide real-time tracking information to customers. Customers receive automated notifications with tracking numbers and delivery updates.

6. Data Analytics: The company uses data analytics tools to monitor order processing times, identify bottlenecks, and optimize the entire fulfillment process.

7. Customer Self-Service Portal: An online portal is developed for customers to track their orders, request returns, and manage their accounts, reducing the need for customer service interactions.

Results of Reengineering. As a result of implementing these information technology-driven changes, the retail company experiences the following benefits:

1. Faster Order Fulfillment. The automated and integrated process leads to quicker order processing, reducing the time between order placement and delivery.

2. Improved Inventory Management. Accurate real-time inventory tracking minimizes stockouts and overstock situations, optimizing inventory levels.

3. Enhanced Customer Experience. Customers receive accurate delivery estimates and real-time tracking, improving overall satisfaction.

4. Reduced Errors. Automated processes reduce manual errors in order entry and fulfillment.

5. Operational Efficiency. Streamlined processes lead to increased operational efficiency and reduced labor costs.

6. Data-Driven Insights: Data analytics provide insights for continuous process improvement and informed decision-making.

This example illustrates how the strategic use of information technology, such as integrated systems, automation, real-time tracking, and analytics, can lead to significant improvements in business processes, resulting in better customer service, operational efficiency, and competitive advantage.

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