Chapter 1 : Process Management

Business process management (BPM) is a discipline involving any combination of modeling, automation, execution, control, measurement and optimization of business activity flows, in support of enterprise goals, spanning systems, employees, customers and partners within and beyond the enterprise boundaries.

This short definition highlights business process management importance for business, but not hardly foreground benefits of BPM integration into a business. The most tangible benefit of good business process management is Cost Efficiency that can mean decreased costs and increased revenue. While the rest of benefits BPM delivers is intangible in the short term, they add crucial value in the long run, and help both small and huge companies with gearing up for worldwide competition. BPM technology makes any company better equipped to switch gears, respond to its changing business environment faster than competitors, and succeed! Please read ahead to learn in more details how BPM software can help you achieve your business goals while it simplifies how you manage business processes, handle change processes and drive projects to success. Here are the Top 5 Benefits of good business process management: Cost efficiency Simply slashing budgets is no longer a viable option in organizations that have become leaner in response to global economic conditions during recent years. There simply is not much left to cut. However, in order to thrive, organizations still need to maximize the efficiency of the costs they do incur and profit they generate. And good BPM is a driving strategy towards maximizing cost efficiency by streamlining business operations and collaboration, automating repetitive tasks, improving product quality and reducing corporate risks. Business agility A trend in BPM is toward more nimble processes that respond to organizational learning in the marketplace. Nowadays flexibility is frequently taken as one of business process management goals in addition to cost efficiency. This has led to a greater demand for ultra-flexible business process management tools that are easy to design, change and deploy. Generally, agility incorporates the following elements, all of which are facilitated by Comindware: With Comindware BPM , process management comes in the form of workflows that you can change on-the-fly. You can re-use workflows wherever you need to and customize them as you go. As work management moves into an unstructured, collaborative age, rules management will be the way to stay properly governed, visible, and compliant, while keeping processes on track. Comindware features on-the-fly rule configuration for each department, function or project whether structured or unstructured , as needed. This provides unique flexibility not seen in other work management tools. Comindware offers comprehensive solution that support process and case management as well as pre-integrated with Project Management. The fact that this all sits on one organization-wide database means that the company has full control, full visibility and full real-time reporting and analysis capability. Continual optimization and scaling. BPM system by Comindware enables quick-win implementation and non-code addition and modification of running processes. It allows for starting with simple automated workflows and growing incrementally with comprehensive business process management. Compliance ease and visibility Changes to legislation and other factors have meant that companies without a flexible system for handling end-to-end compliance can incur great, unforeseen costs, both in reporting and penalties. Within BPM systems, companies can build compliance into their business practices if department-specific applications are integrated with the organization as a whole. Comindware allows for full integration with function-specific, 3rd party applications that are also tied to an organization-wide database. This makes it possible to produce automated reports that demonstrate compliance in a cost-efficient way. Customer focus Savvy customers are demanding thorough proof-of-concept POC processes that document how their needs will be heard through self-service Web 2. Business process management helps organizations to combine people with technology to acquire and retain satisfied customers and Comindware lets organizations include any desired user read: This paves the way for ongoing, real-time collaboration with customers in a way that proves responsiveness, personalization, customization and access to information. Staff satisfaction Organizations continually try to sustain a rewarding working environment that motivates their staff. At conclusion Could your organization benefit from improvements in the following areas? Increased customer satisfaction and shorter time-to-market for products

and services Greater efficiency and cost savings with existing applications and processes Greater team satisfaction as collaboration and best practices are improved Full transparency of all activities across the team and organization If so, then get advantage of work management software , which delivers a full set of tools and services that apply workflow structure to information and workers so that processes are streamlined and performance is improved. A former newspaper reporter, Kamille specializes in database applications, researching how developments in graph databases help organizations reach their goals. Kamille has an MBA from St.

Chapter 2 : Business process management - Wikipedia

A U.S. pharmacy benefit management company would use a business process management system to bring systems in line with new healthcare laws, as well as eliminate fraud, abuse, and waste to safeguard their members' health information.

Business process approach Professional process management approach is a great opportunity to all organizations for enhancing overall business performance and realizing modern professional quality management and quality assurance. A comprehensive approach to practice process management covers following topics: In fact originally the process concept just denoted action or operation. Business processes particularly are processes for fulfilling the business needs of an organization. Business processes consit of interlinked different business activities, "elementary processes". In some cases, however, there has been a danger that structural aspects, e. Business structure and business processes are orthogonal issues to each other. Processes should have primary role and structure, e. Business process management Process management is a comprehensive business management issue. Today truly effective and efficient process management implies a radical change to the traditional established management thinking and structures in organizations. Process management as a management practice has a remarkable role in both "getting better" strategic change and "earning money" operational run. Projects are singular processes for singular business tasks. Basic business processes imply continuously running business activities. A major challenge for the top management is to convert a traditional vertically emphasized hierarchical organization into an approach that consistently and effectively reinforces horizontally interlinked and interacting activities i. Both strategic and operational management levels are involved in this approach, the strategic one focuses on the network of business processes i. General development of the process approach within an organization starts normally from strong vertically organized functional business units, organizational "silos", and with a clear need to improve the effectiveness and efficiency and customer-focus of the organization. Development means movement towards emphasis on horizontal business processes for providing products goods and services to the customers. This development is always in practice a long-term development journey. Process management consists of planning, controlling, improving the operations, and assuring quality. The basic lines of process management include: This should include also mental and knowledge aspects. One of the most difficult questions in practice is the clear understanding of roles of the process owners and line managers. In fact, there could be no process management without a process owner. There is always a potential risk of conflicting interests between the roles of process owners and line managers. Information technology for business processes Process automation and modern collaborative software applications are important challenges in using information and communication technology ICT in the development of business processes and their management. The use of information have been increased overwhelmingly within all kinds of organizations, and particularly in business processes. However, often only ICT solutions have been emphasized. This has induced to difficult situations in many business cases because, ICT is much more than only a technological issue. One should also take into account thinking, understanding, competences, skills, commitment, and feelings of the users of the technological systems in business processes. These things are linked to the tacit or implicit knowledge of people. Modern Web-operated social networking applications have a wide variety of applications for business process management. They are particularly useful for connectivity, interactivity, and sharing information and knowledge taht are key issues in operations and development of business processes. Business processes in modern business environments Process management calls for responding to the realities of the modern business environments and especially nowadays the needs for managing variety and agility. The modern business environments require especially understanding organizations as complex responsive processes of relating. Challenges for continual development and learning Comprehensive enhancement of the business process approach is carried out according to the principles of organizational learning. That is also a good and practical basis of quality management development and establishing solutions for quality integration and quality assurance. Development of the business processes and their management is a long-term effort and

should take into account realities of business environments in question.

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There is process management which will manage the achievement of results by planning, organizing, controlling and continually improving the work required to produce them. There is system management which will manage a system of interacting elements that function together to achieve an objective.

Performance Management - Meaning, System and Process Performance Management - Meaning, System and Process Definition of Performance Management The role of HR in the present scenario has undergone a sea change and its focus is on evolving such functional strategies which enable successful implementation of the major corporate strategies. In a way, HR and corporate strategies function in alignment. Today, HR works towards facilitating and improving the performance of the employees by building a conducive work environment and providing maximum opportunities to the employees for participating in organizational planning and decision making process. Today, all the major activities of HR are driven towards development of high performance leaders and fostering employee motivation. So, it can be interpreted that the role of HR has evolved from merely an appraiser to a facilitator and an enabler. Performance management is the current buzzword and is the need in the current times of cut throat competition and the organizational battle for leadership. Performance management is a much broader and a complicated function of HR, as it encompasses activities such as joint goal setting, continuous progress review and frequent communication, feedback and coaching for improved performance, implementation of employee development programmes and rewarding achievements. The process of performance management starts with the joining of a new incumbent in a system and ends when an employee quits the organization. Performance management can be regarded as a systematic process by which the overall performance of an organization can be improved by improving the performance of individuals within a team framework. It is a means for promoting superior performance by communicating expectations, defining roles within a required competence framework and establishing achievable benchmarks. According to Armstrong and Baron , Performance Management is both a strategic and an integrated approach to delivering successful results in organizations by improving the performance and developing the capabilities of teams and individuals. Tools such as job design, leadership development, training and reward system received an equal impetus along with the traditional performance appraisal process in the new comprehensive and a much wider framework. Performance management is an ongoing communication process which is carried between the supervisors and the employees through out the year. The process is very much cyclical and continuous in nature. A performance management system includes the following actions. Selection of right set of people by implementing an appropriate selection process. Negotiating requirements and performance standards for measuring the outcome and overall productivity against the predefined benchmarks. Providing continuous coaching and feedback during the period of delivery of performance. Identifying the training and development needs by measuring the outcomes achieved against the set standards and implementing effective development programs for improvement. Holding quarterly performance development discussions and evaluating employee performance on the basis of performance plans. Designing effective compensation and reward systems for recognizing those employees who excel in their jobs by achieving the set standards in accordance with the performance plans or rather exceed the performance benchmarks. Performing exit interviews for understanding the cause of employee discontentment and thereafter exit from an organization. By establishing clear performance expectations which includes results, actions and behaviors, it helps the employees in understanding what exactly is expected out of their jobs and setting of standards help in eliminating those jobs which are of no use any longer. Through regular feedback and coaching, it provides an advantage of diagnosing the problems at an early stage and taking corrective actions. To conclude, performance management can be regarded as a proactive system of managing employee performance for driving the individuals and the organizations towards desired performance and results.

Systems are the apps and the programs that allow us to complete a process (I sometimes find it easier to think of a process as a workflow). There may be multiple systems in play to complete one process.

Importance of Knowledge Management Systems Every day, your business receives a huge amount of data and information. While some of this data may not be important at all, other pieces of information or knowledge could be crucial. It is this data or information that can be utilized to take critical decisions and enable certain employees to improve their overall knowledge and skills. This is why, it is very important to store the information and make it accessible for the future course of the business. This is where the importance of knowledge management systems enters the picture. It is the knowledge management systems that enable you to store the data, manage it and distribute it among the workplace whenever needed. The following are some of the points of importance of these systems: Creates knowledge and learning-based organizations â€" One of the main benefits of having a knowledge management system is that it helps to make learning a habit and routine for your organization and creates a kind of a culture at your workplace which is inclined towards self-assessment as well as self-improvement. The knowledge gained through the process of knowledge management systems makes use of experience to improve processes and streamline operations. Makes way for innovation and workplace changes â€" Managing knowledge regularly and actively through knowledge management systems also makes way for innovation and cultural change. It enables workplace employees to express their ideas and use creativity to perform tasks. Makes way for better decision making â€" The huge database of information and knowledge is nothing less than an asset or wealth for your organization. Storing and then processing of this data can help you make some important decisions in an easier manner. When your manager or other employees have access to knowledge through a knowledge management system, they are more capable of making much more informed choices. Without the application of KM systems, your organization may be wasting resources and time on the re-invention of knowledge and spending a great deal of money and time on location or identification of difficult to find information. Thanks to the technological advancements as well as the availability of high-speed networks, your organization has a great opportunity to gather, store, distribute and utilize knowledge in a way you would have never imagined. There are many software products, processes and procedures that can enable the effective implementation of knowledge. The following are the steps that you can take to implement knowledge management systems throughout the workplace. Identify the various business issues The first step is to identify the various business issues by conducting an internal analysis of your firm. You must thus try to evaluate or assess the variety and quantity of the information that your business has stored in databases, on the web, as well as that which employees possess through their personal experiences and knowledge. Efforts must be made to do a cost-benefit analysis , evaluate the complexity of system structures, get to know training costs, security issues, updating costs and analyze existing business practices. Running away from the fear of the huge amounts of information present to be stored or managed is something that keeps many businesses away from the implementation of KM systems. But this reaction does not address the business issue related to managing your corporate knowledge systematically and, hence, will only increase it over time. Prepare for transition Once problem areas have been identified, the next step is to prepare yourself, your employees as well as the entire workplace for the transition. Application and implementation of KM systems deal with cultural changes at the workplace rather than change in technology alone. Your employees may try to resist the change or may even try to oppose it. To avoid this or deal with it you must follow a smart or wise approach and bring about gradual changes. Give yourself and your employees time to get slowly used to using a new KM system, provide them with the aid and training to adapt to new systems and make sure this phase is dealt with patience and understanding. Most people have a natural inclination and desire to learn and share their knowledge. Each and every employee belonging to your organization wants things to be easier and more effective. You must thus make efforts to make them understand the importance of implementation of knowledge management systems so that they can embrace change happily. Get together a dedicated team To make the implementation of knowledge

management system successful, a strong team with an experienced team leader is extremely important. You cannot execute the implementation process without putting someone in charge. Getting together a dedicated team helps to streamline the implementation and get a focused approach for reaching the objective. You must bring together a team consisting of a wide range of expertise so that the skills and experience of each team member can be united for a high-impact result. The team leader you select must possess strong project management skills, extensive experience, broad knowledge and top-level people skills. The team you gather must chart out a well-detailed plan before starting the process of implementing a company-wide KM system. You must be closely involved in the process to ensure everything runs smoothly. Evaluate technology needs and prioritize them The next step is to evaluate and assess the various technology needs and then prioritize them. You must try to figure out the various sources of knowledge needed to solve the business problems. Identification of what is needed and then evaluating what you have already got will help you determine what is missing. Do not jump the gun and purchase expensive technology without discussing it with the core team or concerned individuals. Once you have made the decision of purchasing the needed technology, you must try to determine the best sources for getting that technology. Compare prices, quality, and brand and only then choose the most affordable yet suitable source. Determine the major attributes of knowledge management system Now the next step involves determining the major aspects or attributes of knowledge management system. You now need to define the key features by drafting a checklist to make sure that the technology that you will be acquiring will be able to address the business problems and will also enhance the overall profitability. The following are some of the key features of KM systems: Open â€" Open systems are those which enable the employees to have access to any information from their current location. Distributed â€" Distributed systems are such systems whose components are well distributed across various servers so as to enable access of knowledge to various branches or offices of your business across the globe. Measurable â€" The system must be measurable in the sense that it must be able to measure who accesses which information from which location and so on. Measurable systems enable better management and analysis of the effectiveness of the overall knowledge management within your organization. Customizable â€" A KM system must be extremely customizable and flexible in order to make way for better usability and better individual experience. Secure â€" A KM system must be secure for the threat of loss of information, the threat of duplication and other security issues. Rolling out the building blocks The implementation process of your knowledge management systems must be a phased out process to ensure that the overall objective can be divided into smaller goals to ease out the procedure and make it more efficient. The following are some of the building blocks which you can use for successful implementation of KM systems at your workplace: Phase 1 â€" This phase involves the search for text-based electronic data sources so as to retrieve advanced information with the ultimate goal of improving ROI on existing knowledge. Phase 2 â€" This phase requires Knowledge Mining Software as the technology building block in order to improve the process of finding useful knowledge. Phase 3 â€" Automated Categorization Tools can be used to reach the goal of improving the overall speed of categorizing knowledge and improving its accuracy. Phase 4 â€" The 4th phase involves rolling out of the Knowledge Warehouses so as to improve security, functionality and overall performance of knowledge management. Phase 5 â€" This phase involves allowing users to contribute their knowledge to the Knowledge Warehouses so as to welcome contribution and expand the database of information. Phase 6 â€" This is the phase including the pre-building of knowledge maps through Knowledge Mapping software in order to enable quicker access to knowledge. Phase 7 â€" Phase 7 involves execution of the Knowledge Directory software to locate those individuals who possess a certain required knowledge. Link knowledge to people When your organization is faced with a certain business problem, then help of knowledge databases may be needed. These databases are not just records and reports of existing information but also solutions or knowledge possessed by employees. In such a situation, finding out who knows what can be a time consuming and hence it is better to link knowledge to people in advance as a part of the overall implementation of knowledge management systems. There are 2 major ways to do so, and they are given as follows: A knowledge directory helps employees of your company to find out subject-specific experts within the organization so that they can share the knowledge possessed by them. This directory could act as a platform

where a user can find out the list of experts who are most capable of solving a particular problem. This very link between people and knowledge makes knowledge management different from other applications that manage explicit knowledge. Content management also forms a crucial part of knowledge management systems and is another way to link people with knowledge. You must hire content managers or use the existing ones who will be responsible for gathering information, editing and updating it, as well as ensuring that it is useful and accurate. Maintenance of content or information is of vital importance and can prove to be a lot of importance when an employee is looking for certain data for a project or for finding a business solution. Launch the KM system With the help of the sufficient amount of funding as well as important resources, the implementation of knowledge management systems can be achieved. Now that you know what your goal is and now that you have addressed the cultural issues and met technology needs, it is time to launch the program. Once the program is launched, you may come across certain problems, issues and gaps that you need to address as you move forward. Measure and constantly Improve your KM system Only after launching or implementing company-wide knowledge management system will you come to know the areas that are not working as per your expectations. Formulate ways to measure the effectiveness of the program and then make efforts to fill the gaps and make required improvements. After making the improvements, compare old results with the new ones and measure the difference. See how your performance has improved and continue to incorporate these improvements as you go ahead. Do not be too quick to dismiss the program because it takes time and efforts for expected results to show.

Chapter 5 : How To Implement Knowledge Management System

Business Process Management solution from BP Logix to increase efficiency and optimize workflow management with Process Director. Enable IT teams and business users to rapidly create and deploy sophisticated, form-based, workflow-driven apps in a fraction of the time and cost of traditional development.

Understanding the difference between system and process audits Standards â€" Clearly definded: Understanding the difference between system and process audits by J. Russell It seems that everyone knows the difference between a system and a process. ISO provides definitions, but they seem inadequate at times. Understanding the differences between a process and a system is important for effective organization management and auditing programs. Understanding some of the dynamics will help in the development of value-added auditing strategies. System check One dictionary define a system as a coherent unification. This definition is quite eloquent considering the complexity of most systems. But it may be too vague when discussing business or organization management systems. Management system standards define a system as a set of interrelated or interacting parts. Most systems are so complex it would be impossibleâ€"if not impracticalâ€"to audit one in its entirety. An auditor could easily get lost in minutia and lose sight of the purpose of the audit. Audits conducted to verify conformity to the management system requirements are system audits. In that case, the auditor is verifying conformity to discrete elements or controls contained in the standard. Some audit organizations use a process approach to audit the elements. This approach is a more meaningful and effective way to conduct system audits. Figure 1 is what many quality practitioners know as the document triangle, but I have converted it to a control-level triangle that shows the documents that define organizational requirements. At the top two levels, there are documents that describe system requirements to achieve intended objectives. In one of my classes, I use a string exercise to describe a system. First, I ask five or six students to stand as points of a pentagon or hexagon, with each point representing a different department or management function. You end up with a complex webâ€"sales to management to finance to engineering to purchasing to engineering to management. This complex web or matrix is a depiction of your entire system and, to a casual observer, may look like chaos. In process Look at the control-level triangle in Figure 1 again. At the bottom of the triangle are documents that are used to control individual processesâ€"such as work instructions, control plans and routing cards. At this level, processes are conducted that include filling, washing, reacting, drilling, cutting, treating, sorting, transporting, informing, ordering and opening. This is the level at which work takes place. I have always defined a process as a series of actions or steps that lead to a desired result. This is similar to the definition for a system, except that processes transform inputs into outputs. The only issue with this definition is that not all processes are transformations. For example, is the process of moving materials from the receiving dock to an area or function a transformation? A process is a series of sequential steps that results in change. Processes are responsible for all changes or transformations within an organization. All processes are controlled or monitored by parameters that can be optimized. The closest thing to a checklist would be a flow chart or work instruction. Using either of those tools, auditors can follow one process to the next until they are assured the process is effective. Process audits are powerful because they can identify weaknesses and risks, while also identifying areas for improvement. Process audits go beyond the limited control elements defined in a standard. One fallacy is that people assume the standards writers know everything that must be controlled and put it in management system standards. The truth is the conformity and compliance standards contain minimum controls. Auditing of processes allows you to look at all the necessary controls to ensure they are working to the benefit of an organization. A process audit scope could be a singular process, part of a process or several processes either in series or parallel. Process audits can start at any level where work takes place. Pick one In the control-level triangle, systems reside at the top and processes at the bottom Figure 2. But what is in the middle? When does a group of processes become a system? If you are auditing a manufacturing process or operation, is it a system audit or process audit? For example, an auditor might be thinking about the system requirement to identify material while the operator is explaining how, for some jobs, he or she needs to move a lever only halfway. As you move up the triangle, it becomes more

difficult to test the process flow because the interconnected processes may occur at different times or locations, and process complexity increases. Many materials are processed in batches or held in tanks while waiting for the next treatment. Hospital services for admitting, informing, treating, medicating and discharging patients do not take place at the same time. As you move up the triangle, the idea of a process audit becomes obtuse because of the multiple processes within processes that have differing constraints and objectives. Looking at the revised control-level triangle in Figure 2, you can see that process audits can start at level four and go up to the top, while system audits start from the top at level one and go down. So, to more clearly delineate between system and process from an auditing perspective: A system audit is an audit of a system or subsystem against system requirements. It can reveal conformity or nonconformity to the system. A process audit is an audit of individual processes against predetermined process steps or activities. It can reveal inefficiencies and areas for improvement. Russell is president of J.

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These sections are: 1. process and performance management and their measurement methods, 2. management of manufacturing processes with the aim to be quickly adaptable after real situation demands and their control, 3. quality management information and communication systems, their integration and risk management, 4. management processes of.

Business process management BPM is a discipline involving any combination of modeling, automation, execution, control, measurement and optimization of business activity flows, in support of enterprise goals, spanning systems, employees, customers and partners within and beyond the enterprise boundaries. BPM involves the deliberate, collaborative and increasingly technology-aided definition, improvement, innovation, and management of end-to-end business processes that drive business results, create value, and enable an organization to meet its business objectives with more agility. BPM enables an enterprise to align its business processes to its business strategy, leading to effective overall company performance through improvements of specific work activities either within a specific department, across the enterprise, or between organizations. Gartner defines business process management as: Processes span organizational boundaries, linking together people, information flows, systems and other assets to create and deliver value to customers and constituents. BPM should also not be confused with an application or solution developed to support a particular process. Suites and solutions represent ways of automating business processes, but automation is only one aspect of BPM. Changes[edit] The concept of business process may be as traditional as concepts of tasks , department , production , and outputs , arising from job shop scheduling problems in the early 20th Century. Note that the term "business process" is sometimes used by IT practitioners as synonymous with the management of middleware processes or with integrating application software tasks. For example, workflow management systems can assign individual steps requiring deploying human intuition or judgment to relevant humans and other tasks in a workflow to a relevant automated system. Also, the coupling of BPM to industry methodologies allows users to continually streamline and optimize the process to ensure that it is tuned to its market need. Although a key aspect of business processes is flexibility, as business processes continuously need to adapt to changes in the environment, compliance with business strategy, policies and government regulations should also be ensured. As of [update] BPM approaches in a governmental context largely focus on operational processes and knowledge representation. Areas of focus include representation of the process flow, the factors within it, alerts and notifications, escalations, standard operating procedures, service level agreements, and task hand-over mechanisms. Whether or not existing processes are considered, the aim of this step is to ensure a correct and efficient new design. The proposed improvement could be in human-to-human, human-to-system or system-to-system workflows, and might target regulatory, market, or competitive challenges faced by the businesses. Existing processes and design of new process for various applications must synchronize and not cause major outage or process interruption. Modeling[edit] Modeling takes the theoretical design and introduces combinations of variables e. It may also involve running "what-if analysis" Conditions-when, if, else on the processes: Execution[edit] This section possibly contains original research. Please improve it by verifying the claims made and adding inline citations. Statements consisting only of original research should be removed. February Learn how and when to remove this template message Business process execution is broadly about enacting a discovered and modelled business process. Enacting a business process is done manually or automatically or with a combination of manual and automated business tasks. Manual business processes are human-driven. Automated business processes are software-driven. Business process automation encompasses methods and software deployed for automating business processes. Business process automation is performed and orchestrated at the business process layer [21] or the consumer presentation layer [22] of SOA Reference Architecture. While the emerging robotic process automation software performs business process automation at the presentation layer, therefore is considered non-invasive to and de-coupled from existing application systems. One of the ways to automate processes is to develop or purchase an application that executes the required steps of the process; however, in practice, these applications

rarely execute all the steps of the process accurately or completely. Another approach is to use a combination of software and human intervention; however this approach is more complex, making the documentation process difficult. In response to these problems, companies have developed software that defines the full business process as developed in the process design activity in a computer language that a computer can directly execute. Process models can be run through execution engines that automate the processes directly from the model e. However, automating a process definition requires flexible and comprehensive infrastructure, which typically rules out implementing these systems in a legacy IT environment. Business rules have been used by systems to provide definitions for governing behavior, and a business rule engine can be used to drive process execution and resolution. Monitoring[edit] Monitoring encompasses the tracking of individual processes, so that information on their state can be easily seen, and statistics on the performance of one or more processes can be provided. An example of this tracking is being able to determine the state of a customer order e. In addition, this information can be used to work with customers and suppliers to improve their connected processes. Examples are the generation of measures on how quickly a customer order is processed or how many orders were processed in the last month. These measures tend to fit into three categories: The degree of monitoring depends on what information the business wants to evaluate and analyze and how the business wants it monitored, in real-time, near real-time or ad hoc. Process mining is a collection of methods and tools related to process monitoring. The aim of process mining is to analyze event logs extracted through process monitoring and to compare them with an a priori process model. Process mining allows process analysts to detect discrepancies between the actual process execution and the a priori model as well as to analyze bottlenecks. Predictive Business Process Monitoring [25] concerns the application of data mining, machine learning, and other forecasting techniques to predict what is going to happen with running instances of a business process, allowing to make forecasts of future cycle time, compliance issues, etc. Techniques for predictive business process monitoring include Support Vector Machines, [26] Deep Learning approaches, [27] and Random Forest. Process mining tools are able to discover critical activities and bottlenecks, creating greater business value. Business process reengineering BPR has been used by organizations to attempt to achieve efficiency and productivity at work. Suites[edit] A market has developed for enterprise software leveraging the business process management concepts to organize and automate processes. The recent convergence of these software from distinct pieces such as business rules engine , business process modelling , business activity monitoring and Human Workflow has given birth to integrated Business Process Management Suites. This pattern shows how business process management BPM tools can be used to implement business processes through the orchestration of activities between people and systems. This is often the case when an organization uses the approach for short to medium term objectives rather than trying to transform the organizational culture. True iterations are only possible through the collaborative efforts of process participants. In a majority of organizations, complexity requires enabling technology see below to support the process participants in these daily process management challenges. To date, many organizations often start a BPM project or program with the objective of optimizing an area that has been identified as an area for improvement. However, some corporations with the culture of best practices do use standard operating procedures to regulate their operational process. Technology[edit] BPM is now considered a critical component of operational intelligence OI solutions to deliver real-time, actionable information. This real-time information can be acted upon in a variety of ways â€" alerts can be sent or executive decisions can be made using real-time dashboards. OI solutions use real-time information to take automated action based on pre-defined rules so that security measures and or exception management processes can be initiated. Because "the size and complexity of daily tasks often requires the use of technology to model efficiently" when resources in technology became increasingly widespread with general availability to businesses to provide to their staff, "Many thought BPM as the bridge between Information Technology IT and Business. Process engine â€" a robust platform for modeling and executing process-based applications, including business rules Business analytics â€" enable managers to identify business issues, trends, and opportunities with reports and dashboards and react accordingly Content management â€" provides a system for storing and securing electronic documents, images, and other files Collaboration tools â€" remove intra- and interdepartmental

communication barriers through discussion forums, dynamic workspaces, and message boards BPM also addresses many of the critical IT issues underpinning these business drivers, including: Managing end-to-end, customer-facing processes Consolidating data and increasing visibility into and access to associated data and information Increasing the flexibility and functionality of current infrastructure and data Integrating with existing systems and leveraging service oriented architecture SOA Establishing a common language for business-IT alignment Validation of BPMS is another technical issue that vendors and users must be aware of, if regulatory compliance is mandatory. Either way, validation documentation must be generated. The validation document usually can either be published officially or retained by users. Cloud BPM business logic is deployed on an application server and the business data resides in cloud storage. Gartner refers to all the hidden organizational processes that are supported by IT departments as part of legacy business processes such as Excel spreadsheets, routing of emails using rules, phone calls routing, etc. These can, of course also be replaced by other technologies such as workflow and smart form software. It offers controlled IT budgeting and enables geographical mobility. Internet of things[edit] The emerging Internet of things poses a significant challenge to control and manage the flow of information through large numbers of devices. To cope with this, a new direction known as BPM Everywhere shows promise as way of blending traditional process techniques, with additional capabilities to automate the handling of all the independent devices.

Chapter 7 : Best Workflow Management Software | Reviews of the Most Popular Systems

The following competencies fall under the Organizational Excellence: People, Systems and Process Management category: Achievement / Results Oriented Achieving efficient, timely, quality results by directing efforts on expected outcomes while providing exemplary client service within expected timeframes.

A unifying framework for thinking about processes â€" or sequences of tasks and activities â€" that provides an integrated, dynamic picture of organizations and managerial behavior. Many modern organizations are functional and hierarchical; they suffer from isolated departments, poor coordination, and limited lateral communication. All too often, work is fragmented and compartmentalized, and managers find it difficult to get things done. Scholars have faced similar problems in their research, struggling to describe organizational functioning in other than static, highly aggregated terms. In the broadest sense, they can be defined as collections of tasks and activities that together â€" and only together â€" transform inputs into outputs. Within organizations, these inputs and outputs can be as varied as materials, information, and people. Common examples of processes include new product development, order fulfillment, and customer service; less obvious but equally legitimate candidates are resource allocation and decision making. Over the years, there have been a number of process theories in the academic literature, but seldom has anyone reviewed them systematically or in an integrated way. Process theories have appeared in organization theory, strategic management, operations management, group dynamics, and studies of managerial behavior. The few scholarly efforts to tackle processes as a collective phenomenon either have been tightly focused theoretical or methodological statements or have focused primarily on a single type of process theory. First, processes provide a convenient, intermediate level of analysis. Most studies have been straightforward descriptions of time allocation, roles, and activity streams, with few attempts to integrate activities into a coherent whole. A process approach, by contrast, emphasizes the links among activities, showing that seemingly unrelated tasks â€" a telephone call, a brief hallway conversation, or an unscheduled meeting â€" are often part of a single, unfolding sequence. From this vantage point, managerial work becomes far more rational and orderly. My aim here is to give a framework for thinking about processes, their impacts, and the implications for managers. I begin at the organizational level, reviewing a wide range of process theories and grouping them into categories. The discussion leads naturally to a typology of processes and a simple model of organizations as interconnected sets of processes. In the next section, I examine managerial processes; I consider them separately because they focus on individual managers and their relationships, rather than on organizations. I examine several types of managerial processes and contrast them with, and link them to, organizational processes, and identify their common elements. I conclude with a unifying framework that ties together the diverse processes and consider the implications for managers. Organizational Processes Scholars have developed three major approaches to organizational processes. They are best considered separate but related schools of thought because each focuses on a particular process and explores its distinctive characteristics and challenges. Davenport, Process Innovation Boston: Harvard Business School Press, , p. Any activity or group of activities that takes an input, adds value to it, and provides an output to an internal or external customer. McGraw-Hill, , p. Structure, Systems, and Process St. West, , p. It is shaped as much by the pattern of interaction of managers as it is by the contemplation and cognitive processes of the individual. Sage, , pp. Van de Ven and G. Work Processes The work process approach, which has roots in industrial engineering and work measurement, focuses on accomplishing tasks. It starts with a simple but powerful idea: These chains are called processes and can be conveniently grouped into two categories: Operational and administrative processes share several characteristics. Both involve sequences of linked, interdependent activities that together transform inputs into outputs. Both have beginnings and ends, with boundaries that can be defined with reasonable precision and minimal overlap. And both have customers, who may be internal or external to the organization. The primary differences between the two lie in the nature of their outputs. Typically, operational processes produce goods and services that external customers consume, while administrative processes generate information and plans that internal groups use. For this reason, the two are frequently considered independent, unrelated activities,

even though they must usually be aligned and mutually supportive if the organization is to function effectively. The work processes approach is probably most familiar to managers. It draws heavily on the principles of the quality movement and reengineering. Despite these shared goals, the two movements are strikingly similar on some points, but diverge on others. The similarities begin with the belief that most existing work processes have grown unchecked, with little rationale or planning, and are therefore terribly inefficient. Hammer, for example, has observed: Many of our procedures were not designed at all; they just happened. In fact, both implicitly equate process improvement with process management. They also suggest the use of similar tools, such as process mapping and data modeling, as well as common rules of thumb for identifying improvement opportunities. Their role is to ensure integration and overcome traditional functional loyalties; for this reason, relatively senior managers are usually assigned the task. The quality movement, for the most part, argues for incremental improvement. Improvements are continuous and relatively small scale. Reengineering, by contrast, calls for radical change. Quality experts, drawing on their experience with statistical process control in manufacturing, argue that well-managed work processes must be fully documented, with clearly defined control points. Reengineering experts, on the other hand, are virtually silent about measurement and control. They draw on a different tradition, information technology, that emphasizes redesign rather than control. The work processes perspective has led to a number of important insights for managers. It provides an especially useful framework for addressing a common organizational problem: Many aspects of modern organizations make integration difficult, including complexity, highly differentiated subunits and roles, poor informal relationships, size, and physical distance. In addition, the work processes perspective provides new targets for improvement. Rather than focusing on structures and roles, managers address the underlying processes. An obvious advantage is that they closely examine the real work of the organization. The results, however, have been mixed, and experts estimate that a high proportion of these programs have failed to deliver the expected gains. My analysis suggests several reasons for failure. Most improvement programs have focused exclusively on process redesign; the ongoing operation and management of the reconfigured processes have usually been neglected. Yet even the best processes will not perform effectively without suitable oversight, coordination, and control, as well as occasional intervention. In addition, operational processes have usually been targeted for improvement, while their supporting administrative processes have been overlooked. Incompatibilities and inconsistencies have arisen when the information and plans needed for effective operation were not forthcoming. A few companies have used the work processes approach to redefine their strategy and organization. The most progressive have blended a horizontal process orientation with conventional vertical structures. Sign up Please enter a valid email address Thank you for signing up Privacy Policy Behavioral Processes The behavioral process approach, which has roots in organization theory and group dynamics, focuses on ingrained behavior patterns. The underlying behavior patterns are normally so deeply embedded and recurrent that they are displayed by most organizational members. They also have enormous staying power. They are generalizations, distilled from observations of everyday work and have no independent existence apart from the work processes in which they appear. This makes them difficult to identify but explains their importance. Behavioral processes profoundly affect the form, substance, and character of work processes by shaping how they are carried out. They are different, however, from organizational culture because they reflect more than values and beliefs. Behavioral processes are the sequences of steps used for accomplishing the cognitive and interpersonal aspects of work. New product development processes, for example, may have roughly similar work flows yet still involve radically different patterns of decision making and communication. All involve the collection, movement, and interpretation of information, as well as forms of interpersonal interaction. In most cases, the associated behaviors are learned informally, through socialization and on-the-job experience, rather than through formal education and training programs. Of all behavioral processes, decision making has been the most carefully studied. The roots go back to the research and writings of Chester Barnard and Herbert Simon, who argued that organizational decision making was a distributed activity, extending over time, involving a number of people. This, in itself, is still a surprising insight for many managers. All too often, they see decision making as their personal responsibility, rather than as a shared, dispersed activity that they must

orchestrate and lead. For the most part, the results of these studies have been equivocal. Efforts to produce a simple linear flow model of decision making â€" in the same way that work processes can be diagrammed using process flow charts â€" have had limited success. Witte, for example, studied the purchase process for new computers and found that very few decisions â€" 4 of â€" corresponded to a standard, five-phase, sequential process. He concluded that simultaneous rather than sequenced processes were the norm: They cannot avoid evaluating these alternatives immediately, and in doing this, they are forced to a decision. This is a package of operations. A second group of scholars adopted a more focused approach. Each studied a particular kind of decision, usually involving large dollar investments, to identify the constituent activities, subprocesses, and associated management roles and responsibilities, as well as the contextual factors shaping the process. Much of this research has examined the resource allocation process, with studies of capital budgeting, foreign investments, strategic planning, internal corporate venturing, and business exit. First, it has forced scholars to acknowledge the simultaneous, multilevel quality of decision processes. While sequential stages can be specified, they are incomplete as process theories and must be supplemented by detailed descriptions of the interaction of activities, via subprocesses, across organizational levels and through time. Bower, for example, identified three major components of the resource allocation process â€" definition the development of financial goals, strategies, and product-market plans , impetus the crafting, selling, and choice of projects , and determination of context the creation of structures, systems, and incentives guiding the process â€" and then went on to describe the linkage among these activities and the interdependent roles of corporate, divisional, and middle managers. Second, this body of research focused attention on the way that managers shape and influence decision processes. While behavioral processes like decision making have great autonomy and persistence, they can, according to this line of research, be shaped and directed by managerial action.

Chapter 8 : Process management (computing) - Wikipedia

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The heart of managing the processor comes down to two related issues: The application you see word processor, spreadsheet or game is, indeed, a process, but that application may cause several other processes to begin, for tasks like communications with other devices or other computers. There are also numerous processes that run without giving you direct evidence that they ever exist. For example, Windows XP and UNIX can have dozens of background processes running to handle the network, memory management, disk management, virus checks and so on. A process, then, is software that performs some action and can be controlled -- by a user, by other applications or by the operating system. It is processes, rather than applications, that the operating system controls and schedules for execution by the CPU. In a single-tasking system, the schedule is straightforward. The operating system allows the application to begin running, suspending the execution only long enough to deal with interrupts and user input. Interrupts are special signals sent by hardware or software to the CPU. Sometimes the operating system will schedule the priority of processes so that interrupts are masked -- that is, the operating system will ignore the interrupts from some sources so that a particular job can be finished as quickly as possible. These non-maskable interrupts NMIs must be dealt with immediately, regardless of the other tasks at hand. While interrupts add some complication to the execution of processes in a single-tasking system, the job of the operating system becomes much more complicated in a multi-tasking system. Now, the operating system must arrange the execution of applications so that you believe that there are several things happening at once. This is complicated because the CPU can only do one thing at a time. In order to give the appearance of lots of things happening at the same time, the operating system has to switch between different processes thousands of times a second. A process occupies a certain amount of RAM. It also makes use of registers, stacks and queues within the CPU and operating-system memory space. When two processes are multi-tasking, the operating system allots a certain number of CPU execution cycles to one program. After that number of cycles, the operating system makes copies of all the registers, stacks and queues used by the processes, and notes the point at which the process paused in its execution. It then loads all the registers, stacks and queues used by the second process and allows it a certain number of CPU cycles. When those are complete, it makes copies of all the registers, stacks and queues used by the second program, and loads the first program. This content is not compatible on this device.

Chapter 9 : The Processes of Organization and Management

Process management is an integral part of any modern-day operating system (OS). The OS must allocate resources to processes, enable processes to share and exchange information, protect the resources of each process from other processes and enable synchronization among processes.

A computer program consists of a series of machine code instructions which the processor executes one at a time. This means that, even in a multi-tasking environment, a computer system can, at any given moment, only execute as many program instructions as there are processors. In a single-processor system, therefore, only one program can be running at any one time. The fact that a modern desktop computer can be downloading files from the Internet, playing music files, and running various applications all at apparently the same time, is due to the fact that the processor can execute many millions of program instructions per second, allowing the operating system to allocate some processor time to each program in a transparent manner. In recent years, the emphasis in processor manufacture has been on producing multi-core processors that enable the computer to execute multiple processes or process threads at the same time in order to increase speed and performance. Essentially, a process is what a program becomes when it is loaded into memory from a secondary storage medium like a hard disk drive or an optical drive. Each process has its own address space, which typically contains both program instructions and data. Despite the fact that an individual processor or processor core can only execute one program instruction at a time, a large number of processes can be executed over a relatively short period of time by briefly assigning each process to the processor in turn. While a process is executing it has complete control of the processor, but at some point the operating system needs to regain control, such as when it must assign the processor to the next process. It then creates a data structure in memory called a process control block PCB that will be used to hold information about the process, such as its current status and where in memory it is located. The operating system also maintains a separate process table in memory that lists all the user processes currently loaded. When a new process is created, it is given a unique process identification number PID and a new record is created for it in the process table which includes the address of the process control block in memory. Information about the resources allocated to a process is also held within the process control block. Process states The simple process state diagram below shows three possible states for a process. They are shown as ready the process is ready to execute when a processor becomes available , running the process is currently being executed by a processor and blocked the process is waiting for a specific event to occur before it can proceed. The lines connecting the states represent possible transitions from one state to another. At any instant, a process will exist in one of these three states. On a single-processor computer, only one process can be in the running state at any one time. The remaining processes will either be ready or blocked, and for each of these states there will be a queue of processes waiting for some event. A simple three-state process state diagram Note that certain rules apply here. Processes entering the system must initially go into the ready state. A process can only enter the running state from the ready state. A process can normally only leave the system from the running state, although a process in the ready or blocked state may be aborted by the system in the event of an error, for example , or by the user. Although the three-state model shown above is sufficient to describe the behaviour of processes generally, the model must be extended to allow for other possibilities, such as the suspension and resumption of a process. When a process is suspended, it essentially becomes dormant until resumed by the system or by a user. Because a process can be suspended while it is either ready or blocked, it may also exist in one of two further states - ready suspended and blocked suspended a running process may also be suspended, in which case it becomes ready suspended. A five-state process state diagram The queue of ready processes is maintained in priority order, so the next process to execute will be the one at the head of the ready queue. The queue of blocked process is typically unordered, since there is no sure way to tell which of these processes will become unblocked first although if several processes are blocked awaiting the same event, they may be prioritised within that context. To prevent one process from monopolising the processor, a system timer is started each time a new process starts executing. The process will be allowed to run for a set period of time,

after which the timer generates an interrupt that causes the operating system to regain control of the processor. The operating system sends the previously running process to the end of the ready queue, changing its status from running to ready, and assigns the first process in the ready queue to the processor, changing its status from ready to running. Process control blocks The process control block PCB maintains information that the operating system needs in order to manage a process. PCBs typically include information such as the process ID, the current state of the process e. The PCB also stores the contents of various processor registers the execution context , which are saved when a process leaves the running state and which are restored to the processor when the process returns to the running state. When a process makes the transition from one state to another, the operating system updates the information in its PCB. When the process is terminated, the operating system removes it from the process table and frees the memory and any other resources allocated to the process so that they become available to other processes. The diagram below illustrates the relationship between the process table and the various process control blocks. The process table and process control blocks The changeover from one process to the next is called a context switch. During a context switch, the processor obviously cannot perform any useful computation, and because of the frequency with which context switches occur, operating systems must minimise the context-switching time in order to reduce system overhead. Many processors contain a register that holds the address of the current PCB, and also provide special purpose instructions for saving the execution context to the PCB when the process leaves the running state, and loading it from the PCB into the processor registers when the process returns to the running state. Process scheduling Process scheduling is a major element in process management, since the efficiency with which processes are assigned to the processor will affect the overall performance of the system. The operating system carries out four types of process scheduling: Before accepting a new program, the long-term scheduler must first decide whether the processor is able to cope effectively with another process. The long-term scheduler may limit the total number of active processes on the system in order to ensure that each process receives adequate processor time. New processes may subsequently be created, as existing processes are terminated or suspended. Medium-term scheduling is part of the swapping function. The term "swapping" refers to transferring a process out of main memory and into virtual memory secondary storage or vice-versa. This may occur when the operating system needs to make space for a new process, or in order to restore a process to main memory that has previously been swapped out. Any process that is inactive or blocked may be swapped into virtual memory and placed in a suspend queue until it is needed again, or until space becomes available. The swapped-out process is replaced in memory either by a new process or by one of the previously suspended processes. The task of the short-term scheduler sometimes referred to as the dispatcher is to determine which process to execute next. This will occur each time the currently running process is halted. The objectives of short-term scheduling are to ensure efficient utilisation of the processor and to provide an acceptable response time to users. Note that these objectives are not always completely compatible with one another. On most systems, a good user response time is more important than efficient processor utilisation, and may necessitate switching between processes frequently, which will increase system overhead and reduce overall processor throughput. Queuing diagram for scheduling Threads A thread is a sub-process that executes independently of the parent process. A process may spawn several threads, which although they execute independently of each other, are managed by the parent process and share the same memory space. Most modern operating systems support threads, which if implemented become the basic unit for scheduling and execution. If the operating system does not support threads, they must be managed by the application itself. Threads will be discussed in more detail elsewhere.