Knowledge is increasingly being recognized as the new strategic imperative of organizations.There is another form of information retrieval called "push" technology. In this case information retrieval is initiated by the system rather than by a user. In this form of information retrieval, the users subscribe to areas of interest. They then receive updates via e- mail delivery, personalized web pages and personalized corporate portals or home pages consuming the cataloging effort will be. Let us take, for example, the case of cataloging a book describing how to build a particular machine. There are several questions that we need to ask. Shall we consider the entire book as one unit and catalogue it as such. Or, shall we consider as one unit one chapter of the book, or one section or one paragraph of the book? The larger the unit the more difficult it is to find the exact information one is looking for. In some cases, the manner of dividing into units presents itself as obvious. After the information is divided into smaller units, the units must then be categorized by content type. To do this, it is necessary to create a list of all the content types for the organization. This list may include classifications such as proposals, invoices, white papers, and correspondence. Each entry is then tagged with content attributes, including metadata such document title, author, client, and approval status. These predefined categories and attributes constitute the site vocabulary. Microsoft Site Server has facilities for managing content type and attributes. e) Information retrieval Once the repository of information is created and populated, the next step will be to provide various emails. These documents normally contain valuable information, but they are not easily searched and found. For a knowledge management system to be effective, it must provide for search engines that can deal with such unstructured information. In most cases, however, some form of information structuring is necessary to facilitate subsequent information retrieval and use. Some information may require more than a storage format. For instance, Online Analytical Processing (OLAP) systems convert data from Online Transaction Processing (OLTP) into a format more suitable for aggregation and analysis. OLAP operates against this secondary data store rather than the production system. d) Information organization To facilitate retrieval, a two-step process must be implemented: first, the information should be divided into manageable units; and second, each unit should be categorized. Before the information is divided into smaller units, there is need to determine the size, or granularity, of each meaningful unit. The finer the subdivision or granularity of each unit the more tedious and time For this reason, communities of practice can provide that underlying layer of stability to many organizations. c) Information Storage and Retrieval The third element of knowledge management is information storage and retrieval. The organization should ensure that acquired or shared knowledge is readily accessible to others. This can be done by storing information in a centralized location with sufficient provisions for easy retrieval. For example, reports, statistical data on economic, social, and environmental areas can be stored in databases while official documents, once approved, should be categorized and stored electronically in suitable file systems. The documents and information in databases could then be retrieved through the Internet or the organization's intranet websites. There are four main options for storing the information that are captured or shared. These namely are file system storage (local and network directories and folders), databases, e-mail, and websites (intranet and external). In most organizations, the bulk of information is likely to be in relatively unstructured formats. These can be in the form of typical business or office documents such as reports, memos, spreadsheets, or Although

communities of practice generally grow spontaneously around personal relationships, it is important that organizations create a condition conducive for such growth to occur. Many progressive organizations rely on communities of practice to maintain the professional excellence of project teams regardless of where the members of the team may be geographically located. Because communities of practice facilitate knowledge sharing, they are critical to overcoming the challenges involved in the creation, sharing, dissemination and use of knowledge. In many organizations, communities of practice are informal groupings that are separate from but are not in conflict with the formal organizational structure or hierarchy. They act as parallel structures but do not interfere with the regular responsibilities and accountabilities of staff members. They are groups in which various areas of knowledge connect people. In all organizations, the management structure and hierarchy may change, and projects start and will eventually end. Communities of practice however can continue indefinitely if there are groups of people that are interested in sharing knowledge. Knowledge is the continuous element that binds the members of the community of practice together. The competitive advantage of many organizations is generally determined by the magnitude of knowledge sharing that takes place within the organization. But knowledge sharing does not automatically take place. It must be encouraged and nurtured. In general, it is necessary to facilitate communication and nurture the right culture within the organization for proper sharing of knowledge to take place. Knowledge sharing can be enhanced through the implementation of appropriate technologies, operations and systems that stimulate collaboration, facilitate the process of sharing, and reward those individuals that share the most knowledge as well as the individuals that utilize knowledge that have been shared. Organizations are generally able to make decisions with impact when knowledge is efficiently shared. They can make and execute decisions rapidly when individuals throughout the organization can gain access to important strategic ideas. When an organization starts to manage its knowledge to attain competitive advantage, one key initiative would be to foster the formation of communities of practice around the core knowledge of the organization. Seminars and workshops also provide excellent venues for creating and capturing tacit knowledge that may come from the speakers or the participants. b)Knowledge Sharing and Enrichment The second element of knowledge management is knowledge sharing and enrichment. This element is probably the most crucial among the four. It is during the process of sharing that knowledge is usually refined and enriched. Knowledge can be shared by the organization with its employees (e.g., through memos and instructions) and sharing of knowledge can occur between employees of the organization (e.g., through group discussions and internal meetings) as well as with people outside of the organization (e.g., through attending seminars and workshops). Furthermore, as the knowledge on cleaner production technologies is distributed by the organization to its staff, various sector committees and thematic networks can provide a forum where new ideas can be exchanged, debated, and made more relevant. Through this process of dissemination, debate and discussion, the organization's knowledge on cleaner production technologies is enriched. Additionally, when staff members attend outside seminars, workshops and meetings on cleaner production technologies, further knowledge sharing, and enrichment take place. knowledge is created, it will be necessary to capture it so that it can be utilized. Knowledge capture and/or creation Assess Knowledge sharing and dissemination Contextualize Update Knowledge

acquisition and application Figure 3.3: Knowledge Capture and Sharing Knowledge can be captured in various ways. Knowledge from outside the organization can be captured by accessing different sources such as publications, websites, emails, and the Internet. Explicit knowledge from within and outside of the organization can be captured in various forms such as printed reports, record of meetings, copies of memos and the like. These documented outputs are generally generated at various stages of operation of the organization. On the other hand, tacit knowledge can be created and captured during discussions and meetings with office colleagues, stakeholders, institutional partners, consultants, and experts. or organization since the very interaction among people generates knowledge. One of the primaries aims of knowledge management is to capture the knowledge that is produced during such interactions. Because of the highly competitive nature of today's markets, there is increasing need within corporations and organizations to create new knowledge, generate novel ideas and concepts, and to capture these knowledge, ideas and concepts. The creation of new knowledge will not be possible without creativity and innovation. These are the two most important traits or skills needed to make the organization more productive and competitive. For this reason, creativity and innovation require proper management. If managed effectively, these skills can be harnessed to discover alternative approaches to doing things, faster way of completing tasks, cheaper methods of producing outputs, and easier paths to accomplishing desired results (See figure 3.3). The process of creating new knowledge is the most difficult to manage. Often creativity and innovation flourish when there is a minimum of intervention from management. Nevertheless, for many organizations there is no option but to find ways and means to manage this process since for some their survival as a viable organization depends on how well they can manage this process. Once new Total Quality Management (TQM) and business process re-engineering initiatives. As a result, knowledge management projects became big business and source of revenue for major international consulting firms such as Ernst & Young, Arthur Andersen, and Booz-Allen & Hamilton. In addition, several professional organizations interested in such related areas as benchmarking, best practices, risk management, and change management began exploring the relationship between knowledge management and their areas of special expertise. These included reputable organizations like the American Productivity and Quality Council and the American Society for Information Science. 3.8 Elements of Knowledge Management A complete knowledge management system must contain four elements. These are: a) knowledge creation and capture, b) knowledge sharing and enrichment, c) information storage and retrieval, and d) knowledge dissemination. a) Knowledge Creation and Capture The first element of knowledge management is knowledge creation and capture. Knowledge is continually being created in any group, corporation, The agenda of many conferences also started to include knowledge management as a main item for discussion. But the introduction of knowledge management did not come until 1991 when Tom Stewart published the article "Brainpower" in Fortune magazine.This is what is known as the "people and culture" enabler in knowledge management.The work of Peter Senge, on the other hand, focused on the "learning organization" and emphasized the cultural dimension of managing knowledge.Other management experts and practitioners like Chris Argyris, Christoper Bartlett and Dorothy Leonard- Barton of Harvard Business School contributed significantly to the development of the theory of knowledge management

and the growth of its practice by examining in their various works and publications the many facets of managing knowledge.Results– Oriented definition o To have the right knowledge at the right place, at the right time in the right format Process– Oriented definition o The systematic management of process by which knowledge is identified, created, gathered, shared and applied Technology –Oriented definition o Business intelligence + collaboration + search engines + intelligent agents Figure 3.2: Knowledge Management Knowledge management definitions could be as follows: In any organization, certain areas of knowledge are more important than others.As a conscious discipline, it developed from the various published work of academics and pioneers such as Peter Drucker in the 1970s, Karl–Erik Sveiby in the late 1980s, and Nonaka and Takeuchi in the 1990s.Table 3.1: Spiral of Organizational Knowledge Creation To Tacit Knowledge To Explicit Knowledge From Tacit Knowledge Socialization Externalization From Explicit Knowledge Internalization Combination Socialization is a process of creating common tacit knowledge through shared experiences.Participation in external networks, establishing partnerships with other organizations, and creation of knowledge centers are also effective means to disseminate knowledge.Since users have different levels of technical expertise and have different purposes for accessing information, multiple access methods will have to be provided.Table 3.1 shows the four modes of knowledge conversion: Socialization (from individual tacit knowledge to group tacit knowledge), externalization (from tacit knowledge to explicit knowledge), combination (from separate explicit knowledge to systemic explicit knowledge), and internalization (from explicit knowledge to tacit knowledge).Similarly, customer satisfaction levels can be measured through surveys and feedback mechanisms.Although these measurements are simplification of what is happening, they are, nevertheless, valuable proxies that contribute to providing a better understanding of knowledge flows and knowledge management, in general.Knowledge management is the way organizations create, capture, enhance, and reuse knowledge to achieve organizational objectives.Defined in this manner, it becomes apparent that knowledge management is concerned with the process of identifying, acquiring, distributing, and maintaining knowledge that is essential to the organization (see Figure 3.2).The Asian Development Bank, for example, participates in over 300 networks with professional and other organizations throughout the world, which serve as forums for information exchange and sharing.For knowledge dissemination to be effective it will require the transformation of highly individualized tacit knowledge into explicit knowledge that can be more widely shared.By the end of the 1990s, big businesses started implementing "knowledge management solutions".There should also be a way to allow "authors" or "contributors" to provide new content in the form of articles.The kind of knowledge that is critical to the attainment of the organization's goal and the fulfillment of its strategy is called "core knowledge".An example of this is "learning by doing or using."This trend has resulted in several techniques being developed and applied such as "knowledge technology", which analyzes knowledge sources.Knowledge management is an audit of "intellectual assets" that highlights unique sources, critical functions a potential bottleneck which hinder knowledge flows to the point of use.Thus, by the late 1980s, the ideas that they had developed together with the work done in artificial intelligence and expert systems gave rise to such concepts as "knowledge acquisition", "knowledge engineering" and "knowledge–based systems" and other computer–based ontologies.f) Knowledge Dissemination are The

fourth element of knowledge management is knowledge dissemination.In an organization where there is fear of the management or hierarchy, the employees will tend to keep their knowledge to themselves and share it with others only cautiously.In cases such as this, management must take the lead in creating an environment of understanding, cooperation, and learning.It should also encourage means for users to have access to the information needed.These pathways should be designed with the user community in mind and made as user-friendly as possible.Each access method should be designed to meet a specific user level.3.7 History of Knowledge Management Knowledge management is a relatively new discipline and therefore has a short history.People are the bearers of tacit knowledge.And the sharing of tacit knowledge is crucial to the success of knowledge management.There is no universally accepted definition of knowledge management.In this context, it is helpful to identify two kinds of knowledge: core knowledge and enabling knowledge.The new paradigm is that within the organization knowledge must be shared for it to grow.Understanding Knowledge To comprehend knowledge management, it is necessary to first understand the concept of knowledge.And how is information different from mere data?A mere collection of data is not information.Such results can best be measured in the long term.3.4 The Knowledge Challenge Knowledge is one of the most important assets of any organization.This is the core of knowledge management – the sharing of knowledge.What is knowledge?How is it different from information?This means that if there is no relation between the pieces of data, then it is not information.What makes a collection of data information is the understanding of the relationships between the pieces of data or between the collection of data and other information.In general, the most successful way to measure knowledge sharing is to trace the flow of knowledge among employees.To ensure wide ranging participation of employees in knowledge creation and sharing, there is need to change traditional mindsets and culture from hoarding knowledge to sharing it. This can happen only when there exists a climate of trust information, once organized; and thirdly, the technology infrastructure needed to locate appropriate expertise.To effectively manage the people that possess the desired tacit knowledge, it is essential to take into consideration their cultural and social values, attitudes, and aspirations, and likes and dislikes.These are: firstly, the technology infrastructure needed to organize content; secondly, the technology infrastructure needed to search Knowledge management offers an excellent opportunity to adopt previously impossible business strategies.When viewed from this perspective, knowledge management can be considered as a process of performing an audit of intellectual assets focusing on the organization's unique resources and their crucial functions.In actual practice, it entails managing the knowledge that exists alongside organizational processes involving a complex set of dynamic skills, know-how and other knowledge-related capabilities.The willingness to share this tacit knowledge is influenced to a large extent by the managerial approaches to identify, capture and integrate that knowledge.For example, a researcher can assemble an array of previously existing explicit knowledge to prepare a new set of specifications for a prototype of a new product.At the same time, a significant number of large management consulting firms had begun in-house knowledge management activities and several well-established U.S., European and Japanese firms instituted focused knowledge management programs.Both aspects of knowledge management embody two immediate concerns: (a) to make organizational knowledge more productive; and (b) to

produce benefits that are significantly greater than those envisioned.Organizations contain vast reservoirs of untapped core knowledge and enabling expertise.These are the redefinition of organizational structure, the corresponding human resource practices, and a consistent organizational culture.In knowledge mapping the contents of an organization are taken and the information classified in a catalogue in an orderly and systematic manner.In enhancing customer relations, knowledge management makes possible the discovery of new issues and opportunities through the optimum use of knowledge assets such as contract sales, records, customer demographics, and data, including customer location and contact names.While much of the organizational knowledge is available as explicit knowledge, a significant portion of core and enabling knowledge to remain tacit.Externalization is a process of articulating tacit knowledge into such explicit knowledge as concepts and/or diagrams.Internalization is a process of embodying explicit knowledge into tacit knowledge or an individual's know–how or operational knowledge.The first step in organizing content is the preparation of the taxonomy or knowledge mapping.For example, it can open the door to the creation of an almost unlimited network that enhances the alliances and relationships with customers and suppliers.The practice of information management developed and became widely accepted when executives realized that information was an important corporate resource that could and should be managed to improve the company's competitiveness.In these papers they observed the growing importance of information and explicit knowledge as valuable assets of organizations.To organize content, information and communication technology tools are essential.Sustained efforts to manage knowledge must permeate the entire organization, from the head of the organization down to the rank and file.It is also essential that managers promote appropriate behaviors among employees by setting the example.Such knowledge is generally referred to as customer knowledge, which must be generated, organized, shared, and applied in other words, managed.These pillars namely (a) management and organization; (b) infrastructure; (c) people and culture; and (d) content management systems.Combination is a process of assembling new and existing explicit knowledge into a systemic knowledge.People and culture as an enabler of knowledge management requires three important elements.The way in which workers in the organization think is reflected in the structure of the catalogue.Another aspect of the management–organization pillar is the management of the value chain, which is a critical enabler for knowledge management.The concept of value chain arises from the fact that organizations do not exist in isolation.Every organization must manage the organizational knowledge relating to its customers and suppliers.This involves the management of tacit knowledge that resides inside the heads of people.This term is associated with the management of knowledge related to objects that are identified and handled by information systems.The core and enabling knowledge in organizations are more than a pure competitive advantage.3.5 Knowledge Management field of interaction is built where individuals share experiences and space at the same time.The process often uses metaphors, analogies, and/or sketches.These developments gave further impetus to the growth of systems for managing knowledge.And more and more articles on knowledge management began to appear in an increasing number of business journals.Among these early works were the papers published by Peter Drucker and Paul Strassman.Knowledge management became a rage and came to be seen as a highly desirable

alternative to the failed It was during this period that Peter Drucker coined the term "knowledge worker".Publications, presentations, websites, and libraries are the most obvious forms of dissemination of knowledge.The consolidation of information from diverse sources can be consolidated using web-based knowledge portals.These portals allow the user to reference, collaborate, and interact with information.This involves designing and providing information retrieval pathways.Personalization taps into user profiles to control what content is offered.This was followed by many more articles in widely read publications, most notably articles written by Nonaka, Stewart, and others.At the same time, nurturing knowledge assets such as competencies, customer relationships and innovations became a focus of attention of many corporations.He, together with other foresighted writers like Matsuda and Sveiby, wrote in-depth about the role of knowledge in organization.Nevertheless, most organizations still did not have the strategies and methods for managing knowledge.Content management systems also include some concepts of workflow for target users, efficient management of people and culture within the organization.Consequently, the idea that processes for knowledge management must be developed in a manner like the management processes applied to information has gained more and more followers.Knowledge management consists of activities focused on the organization gaining knowledge from its own experience and from the experience of others, and on the judicious application of that knowledge to fulfill the mission of the organization.Putting it more technically and accurately, knowledge management is the process through which organizations generate value from their intellectual and knowledge-based assets.Interaction between types of knowledge Personal knowledge can become organizational knowledge through the dynamic interaction between tacit knowledge and explicit knowledge.The process of knowledge creation is based on a double spiral movement between tacit and explicit knowledge.Since different users require different views of the knowledge base, the ability to personalize these views will greatly increase the ease of use.After the right to access of the user has been verified, personalization can apply the user's preferences for how and what to present on the page.Nevertheless, business executives and professionals did not yet show widespread interest in the subject.By the mid-1990s, it became widely recognized that the competitive edge of some of the world's leading companies was for the most part due to the robust knowledge assets of those companies.The 1980s Classical economic theory does not fully recognize the value of knowledge as an organizational asset.However, by the mid-1980s, the importance of knowledge as a competitive asset was already well- recognized its expression in professional competence.impact on the organization's effectiveness through the creation of better approaches or more effective work responses.For this reason, perturbations in the composition of the workforce can have significant impact on the organization's performance.Accordingly, the knowledge management process within an organization must consider not only the processes and material resources but, more importantly, the people by whom knowledge is generated.Knowledge management is the process through which organizations generate value from their intellectual and knowledge-based assets.Knowledge management is a process with four parts that comprise a loop: knowledge is created, knowledge is captured, knowledge is classified and modified, and knowledge is shared.Knowledge management is the process through which organizations generate value from their intellectual and knowledge-based assets.But there are numerous definitions proffered

by experts.Explicit knowledge that is available as text, sound, or video facilitates the internalization process.Even fewer are organizations that can optimize the use of this important asset.In socialization, a In any organization, tacit knowledge is the essential prerequisite for making good decisions.It has been shown that the organization that shares knowledge among its management and staff grows stronger and becomes more competitive.In general, information remains relatively static in time and linear in nature (see Figure 3.1).Through these networks, the Bank can disseminate best practices and lessons learned, among many others.With these systems, intranets, extranets, and even Internet knowledge management implementations possible.Unless knowledge is effectively disseminated, the development impact of knowledge will remain limited.In this manner both casual and intensive users will be provided access to the same body of information.With this realization, the management of knowledge suddenly became a mainstream business objective.And other companies started emulating the knowledge management practices of the market leaders.The number of ideas generated in the online system and frequency of access are easy to measure.As academics and theorists continue to reflect on the subject, information management has further developed into knowledge management.Put very simply, knowledge management is the conversion of tacit knowledge into explicit knowledge and sharing it within the organization.Unfortunately, very few can harness this asset in a meaningful way.may be readily available from the organization's library or databases (explicit knowledge).This dynamic process is the essence of knowledge creation in an organization.This interaction between the two types of knowledge brings about what is called the four modes of knowledge conversion.A new executive not yet familiar with the organization will find it difficult to make good decisions since he or she has yet to acquire tacit knowledge about the workings of the organization.Tacit knowledge is therefore crucial to getting things done and creating value for the organization.The most established paradigm is that knowledge is power.Therefore, one must hoard it, keep it to oneself to maintain an advantage.Since information merely provides the relationship between data, it therefore does not provide a foundation for why the data is what it is and does not indicate as to how the data is likely to change over time.knowledge sharing, even if the positive results of doing so are not readily apparent.These ubiquitous web browsers .allow easy access from any location