



BACHELOR OF COMPUTER APPLICATIONS

SEMESTER 5

DCA3143
E-COMMERCE

Unit 13

Knowledge Management

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1. INTRODUCTION

Organizations today are moving toward transforming themselves into knowledge-based intensive systems with proper management structures for awareness of knowledge at a very fast pace. This is because knowledge is an important resource that helps to change the way businesses and organizations function for maximizing their potential. The success and competency of the organization majorly depend upon its capability to create an environment for knowledge creation and application shared through intra- and inter-organizational networks. The systems require an effective and systematic knowledge management initiative for sharing knowledge management to be used effectively and efficiently. This is possible through effective knowledge management development, strategy, knowledge management goals, organizational design, and appropriate tools and processes. It requires a supportive organizational culture and a controlled knowledge management system for evaluating the achievement of the goals.

The knowledge management system is a technology and framework that is put together by an organization for sourcing, storing, deploying, and sharing knowledge by creating best practices and using the right tools for maximizing the value of knowledge across the organization. These knowledge-based processes have prompted organizations to adjust their organizational and operational structure for providing a sustainable competitive advantage to their customers in all knowledge-intensive industries. They offer data and statistical analysis, support in legal and administrative processes, marketing research, and other competitive analysis required by the industries. It helps organizations maximize their potential by sharing knowledge within their workforce, which is necessary for maintaining successful operations.

1.1 Learning Objectives

By the end of this unit, you will be able to:

- ❖ *Discuss the need for a knowledge management system*
- ❖ *Learn about e-commerce websites and organization*
- ❖ *Explain the features of knowledge management tools and process examples of KM tools that are widely used in e-commerce portals*



2. NEED FOR KNOWLEDGE MANAGEMENT SYSTEM

Organizations today are much aware of evolving and expanding into newer domains by defining their approach to business by creating an effective source of institutional knowledge. The main purpose of implementing a knowledge management system within the organization is for the workers to access and make use of knowledge and information for better achievement of their tasks. It helps with maximizing effectiveness by developing a cycle of structuring, auditing, and sharing of knowledge for the success of the organization. In this manner, the company can create an environment and culture of development and learning where the workforce is encouraged to share information for working together for achieving the goals of the organization. The main purpose of a knowledge management system within the organization is as follows:

- Providing enhanced performance
- Being innovative
- Having competitive advantage
- Integration and sharing of knowledge
- Facilitating continuous improvement by the development of professional skills, driving strategy, and faster solutions for problems.

Knowledge management helps with boosting the efficiency of the enterprise by improving its decision-making ability and providing access to total expertise to the workforce for creating an efficient workforce that can make quick decisions. By making sure that all employees have access to the overall expertise held within the organization, a smarter workforce is built that is able to make more quick, informed decisions that benefit the entire company. The markets today are becoming very competitive which is the reason for organizations to have a knowledge management system for the customers to benefit the access to best methods and also for the growth of innovation within the organization.

In the words of **Lew Platt** who was the CEO of Hewlett-Packard, "If HP knew what HP knows, we would be three times more productive."

Information knowledge management systems can be categorized into:

- **Explicit knowledge:** This is information and knowledge that is taught and codified.
- **Implicit knowledge:** This is the knowledge that is used for illustrating the best way for implementing explicit knowledge.
- **Tacit knowledge:** This is the knowledge that is gained through experience.

It is seen that implementing knowledge management processes offers value-added benefits for the company by increasing productivity and efficiency through access to information and knowledge. Sharing information makes people make lesser mistakes as knowledge is shared through experience and makes them perform their job better. A knowledge management system helps with the decrease in costs and it leads to an increase in customer satisfaction. This is because the customer's problems are resolved faster by accessing information through the knowledge management system, which results in satisfied and happy customers leading to an increase in ROI for the company. Therefore, organizations need a knowledge management system since it benefits them in several ways:

- Improvement in the agility of the organization
- Reduced time to search for information
- Leads to faster and better decision-making
- Helps to solve problems quickly
- Enhances the innovation rate
- Supports employee development and growth
- Reduces operational costs
- Helps with sharing of specialist expertise
- Improves customer satisfaction
- Improve processes and workflow
- Better communication and improvement in business processes
- This leads to an increase in the bottom line and market share.

STUDY NOTE

E-commerce organizations across the globe are making use of artificial intelligence for creating intelligent websites along with adding a personal touch to customer experience. The companies like Amazon, Flipkart, and more are using the latest technologies and adding to personalized and interactive buying experiences.

SELF-ASSESSMENT QUESTIONS - 1

1. apply knowledge, best describes:
 - a. organizational learnings
 - b. knowledge management
 - c. organizational memory
2. _____ system is a technology and framework that is put together by an organization for sourcing, storing, deploying, and sharing knowledge.
3. _____ is information and knowledge that is taught and codified.
 - a. Tacit knowledge
 - b. Explicit knowledge
 - c. Implicit knowledge
 - d. None of these
4. Sharing information makes people make lesser mistakes as knowledge is shared through experience and makes them perform their job better. **(True or False)**
5. _____ describes the best methods of problem-solving developed by a company
 - a. Knowledge management
 - b. Standard operating procedures
 - c. Best practices
 - d. Organizational learning
6. Knowledge management does not help with sharing of specialist expertise. **(True/False)**

3. E-COMMERCE WEBSITE AND ORGANIZATION

Organizations face the challenging task to create a website with continuous growth and the rapid changes in the web development sector with different methods that have been developed for formalizing the process of designing and building a unique tailored website. E-commerce websites are online portals created for facilitating the buying and selling of goods and services online with effective methods of online transfer of information and funds. The development of e-commerce websites involves various applications and tools necessary for making the website look attractive and user-friendly for online clients. All the transactions on an e-commerce website are done online in terms of identifying the products, marketing, shopping for the products, making payments, and shipping. Hence it becomes important for a website to have all these features for dealing with the requirements of the customers and also encourage the customers to shop and navigate easily through their websites.

The e-commerce websites should have a unique graphical user interface for ensuring that the customers make a lot of purchases. The products need to be displayed in a user-friendly manner so that the customers can search for and access the products easily. There is a shopping cart provided virtually for the customers to select the products they want online from the stores and make the payment for the selected items online. The e-commerce websites facilitate the expansion of business globally where customers all over the world can access e-commerce websites for their shopping. The websites provide a virtual model of shopping by offering a variety of products and services online. In the earlier days, e-commerce transaction was done through e-mails and phone calls but with the changing trends, e-commerce websites are effective enough to solve the needs and requirements of the customers online. The main objectives of designing an intelligent website are as follows:

- Easy access with clear communication
- Managing costs selling online in a strategic manner
- Establishing better business relationships
- Providing customers with a unique experience
- Gaining customer trust and improving customer loyalty

- Refining efficiency of service
- Identifying the right target audience
- Making a mobile-responsive e-commerce website
- Selling more

Designing e-commerce websites require technologies for developing human machine interfaces (HMIs) using the latest technologies with high-speed communication links for connecting the business entities with the global markets. The process requires network infrastructure in form of hardware and software for creating and running the website, with the visual design of the site, user interface and the type of audience, and more. Website designing involves a dedicated team of skilled professionals for developing the website and the content and making it functional for being presented through the visual interface. Organizations must take into consideration the following factors before developing the website:

- To analyze and survey the market.
- Have an understanding of the type of audience to target.
- Study and explore the competitive market and its standards.
- Identify the necessary factors required for marketing the products in the global markets.
- Provided an online secure mode of payment for the customers online.
- Employ skilled professionals for developing the website.

STUDY NOTE

Many e-commerce portals are designed for attracting website visitors and turning them into ideal website customers. The design elements of the website make the buying and shopping experience as quick, easy, and stress-free as possible. One would lose out on valuable customers if the online store is not optimized for sales.

Activity I

Do research for creating a website with a database that includes several products that belong to different companies on their websites.

SELF-ASSESSMENT QUESTIONS - 2

7. Designing a website involves a dedicated team of skilled professionals for developing the website and the content and making it _____ for being presented through the visual interface.
8. E-commerce websites are online portals created for facilitating the buying and selling of goods and services online with effective methods of online transfer of information and funds. **(True/False)**
9. The websites provide a _____ model of shopping by offering a variety of products and services online.
10. All the transactions on an e-commerce website are done _____ in terms of identifying the products, marketing, shopping for the products, making payments, and shipping
11. The websites should not be flexible or mobile responsive for the customers. **(True/False)**

4. FEATURES OF KNOWLEDGE MANAGEMENT TOOLS AND PROCESS

The knowledge management tools and processes are used for collecting, storing, and sharing information and knowledge by the people working in the company and for achieving the goals of the business. It includes gathering and preserving the acquired and existing information and knowledge in a central database or knowledge repositories (used for storing information and knowledge) regarding specific domains. The KM tools help organizations to develop a competitive edge within the global economy, which is needed for their growth and also can be used for formulating effective strategies required for their survival. These motivate the people within the organization to improve their existing skills, develop new skills, and also enhance their intellectual capabilities. Some of the knowledge management tools and processes used by the organizations are as follows:

- **Knowledge Base**

The knowledge base acts as a hub for a central database consisting of content based on products and services, technical content, and more of the company and it acts as a searchable directory for the users. An effective knowledge base is used for collecting, retrieving, supporting, and managing the data of the company for helping the workforce of the company for them to work better for achieving the goals of the company. The knowledge management tools include technical content that is easily accessible for finding solutions to problems or troubleshooting the software and other forms of information, which helps to provide the customers with a better experience of using the product or services. The knowledge base is necessary for the workforce and the customers since it consists of knowledge base and information related to products, processes, and for training purposes.

- **Customer Relationship Management Systems**

The customer service approach in e-commerce focuses on building long-term and sustainable customer relationships that help with adding value for the customer and the company. The e-commerce companies through their effective processes and tools meet the requirements of the consumers by adopting effective measures for delivering goods on time. The processes for customer relationship (CR) systems help with keeping

track of sales and marketing, and information regarding the prospective throughout a buying cycle starting with customer relationship interaction over the company website. The knowledge management tool helps with storing information regarding customer data for identifying and tracking the customers and offering them information regarding the products and services on time. It also helps with keeping a track of customer problems and helps them find solutions for addressing those problems promptly.

- **Learning Management Systems (LMS)**

Learning management software is used by many companies to educate and train their employees. The systems and methods of knowledge management are used for sharing the LMS technology by the companies for sharing the training modules, educational, and other job-related resources online. These are used by the workforce of the company for improving their performance and also optimizing the processes that will help their teams optimize processes and improve performance. The learning management software is used for providing information to the company employees regarding compliance issues, new regulations of the company, and more, which can have an impact on their work and jobs and also make them aware of the company policies.

- **Technology Advancements and Automated Systems**

It has become imperative for e-commerce companies to adopt new and innovative technology solutions since the customers have become more demanding and technological advancements can increase productivity by minimizing errors, cost, and time.

The companies need to go for automated systems and data-driven software solutions required for their various logistic functions of packaging, labeling, warehouse sorting, transportation, and more. It enables the companies to track their shipment and monitor them regularly by getting alerts and notifications and setting up customized reporting.

- **Effective Supply Chain and Logistics Tools**

In e-commerce, logistic information and analytics software tools are used to keep a track of information and analyze the shipping history and improve client's operations that help to reduce logistical costs and minimize the shipment delivery time. The software helps with data and information through business intelligence, performance metrics and KPIs, and other forms of a computer model for taking care of supply chain issues. These help with better control, monitoring, and tracking of shipments and play a vital role in delivering a superior service to the customers. The logistics management software (LMS) has a huge amount of data, which is used for:

- Tracking freight accruals
- Identifying carrier reports
- Providing the KPI reports of company performance
- Warehouse management systems

Warehouse management is a set of processes required for controlling, automating maintaining, and storing finished goods until they are sold. Warehousing facilitates time utility by storage of goods after production till they are transported to the final destination for e-commerce entities. Warehouses receive the goods, helping to streamline the workflow with storing the goods, moving them and keeping track of the location, and dispatching them.

The important factors involved in warehousing management are as follows:

- Locating the warehousing facilities
- Determining the number of warehouses
- Determining the size of the warehouse
- Identifying the layout of the warehouse
- Designing of the building
- Accounting for the ownership of the warehouse
- **Project Management Systems**

Project management is a systematic management approach required for implementing a project. It is an organized venture with a scientific application of skills, knowledge, techniques, and tools required for the various activities for meeting the requirements of the project requirements. It is a process by which the activities are planned, scheduled,

and controlled for achieving the objectives of the project keeping the limited time and budgets in mind. The tools of knowledge management are needed to integrate all aspects of a project so that there is unified communication by everyone within the same domain.

- **Content Repository and Document Management Systems**

A content repository acts as a database for various digital documents and content that is gathered and created through data management processes. The document management systems consist of several multi-use documents in form of blogs, eBooks, content writing, journals, articles, and more, which are compiled into a central database and used for online presence. The knowledge management tools are used for sharing content and documents with the groups and they also have records of previous documents that are sorted according to various topics and used by people when required for marketing and sales and online presence. The workforce can refer to these documents for making necessary changes if required.

STUDY NOTE

The e-commerce sites like Amazon.com, eBay, Yahoo, and more have assisted in defining industry categories and business models on the Web. These websites are easy to navigate and are updated frequently for ensuring that the users keep coming back for more information. The most common website types today are service-based business

4.1. Examples of KM Tools that are Widely Used in E-commerce

The success of the e-commerce business depends on the user-friendliness of websites, which revolutionizes the business and makes it functional, simple, intuitive, and easy to navigate. Creating the appropriate website depends on the kind of target market that one is targeting and the use of knowledge management tools. The digital presence in the economy is changing the lives of people by providing more choices, convenience, and value through increased efficiency, economic development, and improved problem-solving. Knowledge management systems have prompted organizations to transform by optimizing their processes and providing new insights for making smarter decisions. The value-added benefits, with more agile infrastructures, data-driven actionable insights, and sophisticated

applications help to leverage the efficiencies and growth promised by the digital economy. Some of the KM tools and processes that are widely used in e-commerce are as follows:

- **Decision Support Systems**

Knowledge management tools aid in the decision-making process for running a business. These tools provide data and insight that involves analytical information regarding a subject matter. The KM tools are in form of a decision tree that makes use of a tree-like model of decisions and the results in form of resources, costs, and utility of a product or service.

- **Knowledge Base (FAQs & Articles)**

An important aspect of KM tools is having a central knowledge base that is easily accessible and easy to use. Easy navigation plays a very important role in making it easy for users to browse the website of the e-commerce company and find the right page. The knowledge base platform keeps track of all the inquiries, and content, from how-to articles to frequently asked questions. The information on the knowledge base is updated regularly for a better customer experience.

STUDY NOTE

The error pages on the e-commerce website are a source of confidential information. The errors appearing in the error pages are added in Web applications that possess weak input validation techniques. For example, if the user has typed in numbers differently and the application is designed to recognize the numeric inputs, it would fail when alphabets or other special characters are provided and as input, it would show an "Error page." websites and they have the main purpose of convincing visitors for becoming their customers..

Activity II

Design a dashboard for an e-commerce website containing the important tools required by customers for making a purchase with payment details form on the e-commerce portal for an order to be placed.

SELF-ASSESSMENT QUESTIONS - 3

12. The KM tools help organizations to develop a _____ within the global economy, which is needed for their growth
13. Easy navigation does not play a very important role in making it easy for the users to browse the website and find the right page. **(True/false)**
14. The _____ helps the visitors to directly find the product of their interest by using the search ID number.
15. The information on the knowledge base is updated regularly for a better customer experience. **(True/False)**
16. The _____ platform keeps track of all the inquiries, and content, from how-to articles to frequently asked questions.



5. CONCEPT MAP

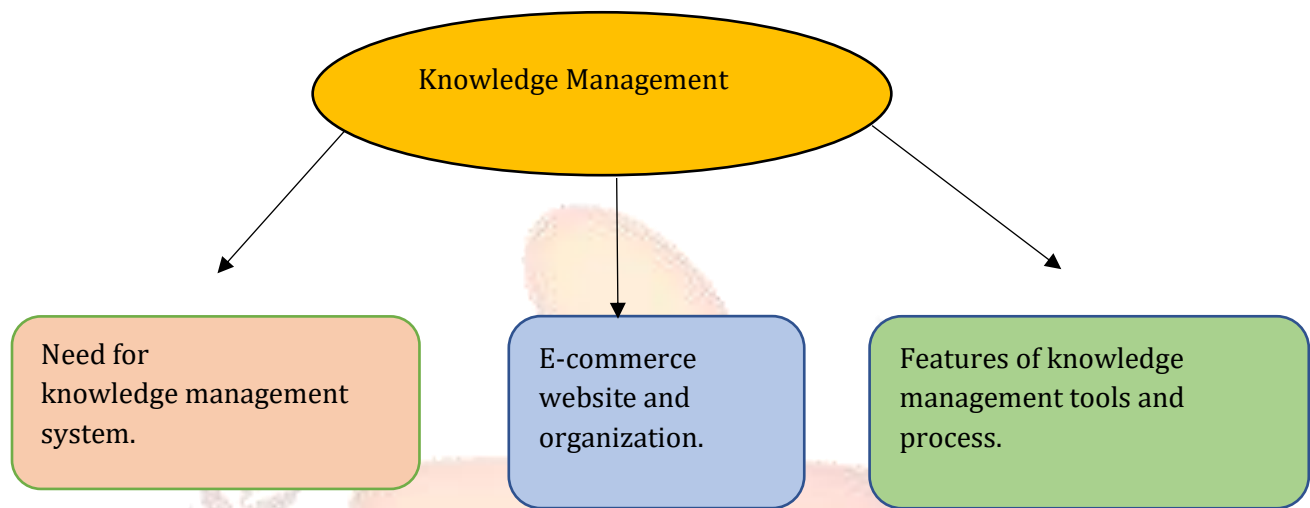


Fig. 1: Concept Map

6. SUMMARY

- The knowledge management system is a technology and framework that is put together by an organization for sourcing, storing, deploying, and sharing knowledge by creating best practices and using the right tools for maximizing the value of knowledge across the organization.
- Organizations today are much aware of evolving and expanding into newer domains by defining their approach to business by creating an effective source of institutional knowledge.
- Knowledge management helps with boosting the efficiency of the enterprise by improving its decision-making ability and providing access to total expertise to the workforce for creating an efficient workforce that can make quick decisions.
- Sharing information makes people make lesser mistakes as knowledge is shared through experience and makes them perform their job better.
- Organizations face the challenging task to create a website with continuous growth and the rapid changes in the web development sector with different methods that have been developed for formalizing the process of designing and building a unique tailored website.
- The development of e-commerce websites involves various applications and tools necessary for making the website look attractive and user-friendly for online clients.
- The e-commerce websites facilitate the expansion of business globally where customers all over the world can access e-commerce websites for their shopping.
- Designing e-commerce websites require technologies for developing human machine interfaces (HMIs) using the latest technologies with high-speed communication links for connecting the business entities with the global markets.
- Website designing involves a dedicated team of skilled professionals for developing the website and the content and making it functional for being presented through the visual interface.
- The knowledge management tools and processes are used for collecting, storing, and sharing information and knowledge by the people working in the company and for achieving the goals of the business.

- The KM tools help organizations to develop a competitive edge within the global economy, which is needed for their growth and also can be used for formulating effective strategies required for their survival.
- The success of the e-commerce business depends on the user-friendliness of websites, which revolutionizes the business and makes it functional, simple, intuitive, and easy to navigate.
- The value-added benefits, with more agile infrastructures, data-driven actionable insights, and sophisticated applications, help to leverage the efficiencies and growth promised by the digital economy.



7. GLOSSARY

- **Knowledge Management System:** This is a technology and framework that is put together by an organization for sourcing, storing, deploying, and sharing knowledge by creating best practices and using the right tools for maximizing the value of knowledge across the organization.
- **Explicit Knowledge:** This is information and knowledge that is taught and codified.
- **Implicit Knowledge:** This is the knowledge that is used for illustrating the best way for implementing explicit knowledge.
- **Tacit Knowledge:** This is the knowledge that is gained through experience
- **E-commerce Websites:** These are online portals created for facilitating the buying and selling of goods and services online with effective methods of online transfer of information and funds.
- **Knowledge Management Tools and Processes:** Are used for collecting, storing, and sharing information and knowledge by the people working in the company and for achieving the goals of the business.

8. TERMINAL QUESTIONS

Short Questions

1. What is a knowledge management system?
2. Explain the main purpose of a knowledge management system within the organization.
3. Explain the need for e-commerce websites.
4. Why is the knowledge base necessary in an organization?
5. Why does an e-commerce portal require chatbox technology for customers?

Long Questions

1. Explain the need for knowledge management systems.
2. Why do organizations face the challenging task of creating attractive websites?
3. Discuss any three features of knowledge management tools and process.

9. CASE STUDY

Case Study: Whirlpool's Knowledge Management System

Whirlpool desired to embed innovation in its organization and was looking for a knowledge management system (KMS) to democratize knowledge and information and facilitate learning about innovation. To achieve its aim, the company planned to develop a full-fledged, detailed internal KMS to provide a platform for storing and sharing of ideas and bring a change inclusive of knowledge. The company also wanted to develop knowledge-driven environment which would offer a unique competitive advantage and innovation opportunities.

As part of its KMS, Whirlpool adapted and placed a tracking system called the Innovation Pipeline (I-Pipe) its intranet with a little modification. The I-Pipe was a dashboard view of the innovation pipeline at Whirlpool to monitor ideas from concept to scale-up. The I-Pipe was initially used by innovation teams and gradually was opened for access to employees in the organization. Through the implementation of I-Pipe, employees were able to view ideas and innovations by product category or region and make contributions to the existing ones.

Whirlpool also felt the need for the development of a technical platform to achieve the complete engagement of the entire Whirlpool population in the innovation embedment effort. For this, the company desired to establish an efficient IT infrastructure that would enable employees to share their suggestions and ideas, generate feedback, and volunteer for innovation projects. As a result, the company developed an intranet-based KM website, Innovation E-space, to allow the monitoring of innovation activities at the company. The new platform was available to Whirlpool people who could access the intranet.

The KMS at Whirlpool was a huge success and contributed to innovation embedment and competency development. Consequently, many breakthrough ideas for products came from different areas of Whirlpool and there was a significant increase in value delivery to consumers. As the industry was facing a huge decline with many rivals struggling for survival, Whirlpool manages to generate high profits and experience steady growth.

Source: https://www.icmrindia.org/casestudies/catalogue/IT%20and%20Systems/Knowledge%20Management%20at%20WhirlpoolExcerpts2.htm#Whirlpools_Knowledge_Management_System

Questions:

1. Why did Whirlpool want to develop a knowledge management system?
2. Discuss the efforts taken by Whirlpool. Was the company successful in achieving its aims?



10. ANSWERS

Self-Assessment Questions

1. Knowledge management
2. b
3. True
4. c
5. False
6. Functional
7. True
8. Virtual
9. Online
10. False
11. Competitive edge
12. False
13. Search bar
14. True
15. Knowledge base

Terminal Questions

Short Answer Questions

Answer 1: The knowledge management system is a technology and framework that is put together by an organization for sourcing, storing, deploying, and sharing knowledge by creating best practices and using the right tools for maximizing the value of knowledge across the organization.

For more details, refer to section 13.1.

Answer 2: The main purpose of a knowledge management system within the organization is:

- Providing enhanced performance

- Being innovative
- Having competitive advantage
- Integration and sharing of knowledge
- Facilitating continuous improvement by the development of professional skills, driving strategy, and faster solutions for problems.

For more details, refer to section 13.2.

Answer 3: E-commerce websites are online portals created for facilitating the buying and selling of goods and services online with effective methods of online transfer of information and funds. The development of e-commerce websites involves various applications and tools necessary for making the website look attractive and user-friendly for online clients.

For more details, refer to section 13.3.

Answer 4: The knowledge base acts as a hub for a central database consisting of content based on products and services, technical content, and more of the company and it acts as a searchable directory for the users.

For more details, refer to section 13.4.

Answer 5: Most e-commerce customers want to know and understand every single detail about the product or delivery before actually making the purchase. Therefore, chatbox technology is necessary for the growing number of online retailers for providing continuous customer service.

For more details, refer to section 13.4.

Long Answer Questions

Answer 1: Organizations today are much aware of evolving and expanding into newer domains by defining their approach to business by creating an effective source of institutional knowledge. The main purpose of implementing a knowledge management system within the organization is for the workers to access and make use of knowledge and information for better achievement of their tasks. It helps with maximizing effectiveness by

developing a cycle of structuring, auditing, and sharing of knowledge for the success of the organization.

For more details, refer to section 13.2.

Answer 2: Organizations face the challenging task to create a website with continuous growth and the rapid changes in the Web development sector with different methods that have been developed for formalizing the process of designing and building a unique tailored website. E-commerce websites are online portals created for facilitating the buying and selling of goods and services online with effective methods of online transfer of information and funds. The development of e-commerce websites involves various applications and tools necessary for making the website look attractive and user-friendly for online clients.

For more details, refer to section 13.3.

Answer 3: Knowledge management tools and processes are used for collecting, storing, and sharing information and knowledge by the people working in the company and for achieving the goals of the business. It includes gathering and preserving the acquired and existing information and knowledge in a central database or knowledge repositories (used for storing information and knowledge) regarding specific domains.

For more details, refer to section 13.4.

11. SUGGESTED E-REFERENCES AND E-BOOKS

E-Books

- Rich, Jason R. —Starting an E-Commerce Business. IDG Books, New Delhi.
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