MARKETING RESEARCH – LECTURE 2

CHAPTER 2 – **Information Systems and Knowledge Management**

LESSON – 2

Information Systems and Knowledge Management

Learning Objective 2.1 – The Characteristics of Valuable Information

Information, Data, and Intelligence

Information and data are frequently used interchangeably in ordinary speech. These terms are used by researchers in particular ways that highlight the value of each. Data are only actualities or measurements of specific phenomena (i.e., things or events). Information is just data that has been prepared (structured) to show how two facts relate to one another or to facilitate decision-making. Market intelligence refers to the portion of data and information that actually has some explanatory power, allowing for the making of efficient judgments. As a result, there is more data than information and more intelligence than information. Not every piece of data has value to decision-makers. Useful information becomes knowledge and aids a marketing manager in decision-making. Intelligence can also be created from useful data. Data's usefulness is influenced by four factors: relevance, quality, timeliness, and accuracy.

Relevance

The features of data that represent how relevant these specific facts are to the current situation are known as relevance. Or to put it another way, the facts make sense in light of the circumstances. Regrettably, irrelevant facts and data frequently find their way into decision-making. Thinking about how things change is a particularly effective approach to distinguish between relevance and irrelevance. Facts concerning variables that, if modified, would fundamentally influence the situation are considered relevant data.

Quality

Data representation of the actual situation is referred to as data quality. Accurate, trustworthy data are legitimate and consistent. High-quality data accurately reflect reality. Researchers will occasionally attempt to collect the same data from many data sources in order to assess its quality. In marketing research, data quality is a crucial problem that will be covered in this work.

Timeliness

In the dynamic realm of marketing, using outdated knowledge can result in bad choices. Information on marketing must be timely, or given at the appropriate moment. Computerized information systems can capture events and provide pertinent data right away. A lot of marketing data becomes accessible relatively immediately when a transaction takes place. When information is timely, it signifies that it is still applicable. Standards for timely information have been redefined by computer technology.

Completeness

The proper amount of information is referred to as having comprehensive information. Managers of marketing must have complete knowledge before making any judgments.

Learning Objective 2.2 – Knowledge Management

Similar strategies can be used by organizations. However, knowledge is gathered from many sources, including salespeople, management, client reports, and specially commissioned studies. The organization's memory is made up of all this information. In other words, this is the knowledge of the company. From the viewpoint of a business, knowledge is a concoction of prior experience, wisdom, and information that creates organizational memory. It offers a framework that may be carefully used to analyze a marketing issue. This information is used by marketing researchers and decision-makers to provide answers to tactical and strategic issues. Knowledge is a valuable resource and a possible source of economic advantage. The act of building an all-encompassing, thorough, and readily available organizational memory, or the intellectual capital of the company, is known as knowledge management. Knowledge management's goal is to officially structure and make accessible an organization's intellectual wealth. Employees are given knowledge in a way that makes it easier for them to understand, act on, and make better decisions across the board of the marketing mix. Systems for knowledge management are especially helpful in making data accessible throughout the firm's functional divisions.

Global Information Systems

Global information systems have emerged as a result of heightened international rivalry and technological developments in interactive media. The purpose of a global information system is to gather, store, update, alter, analyze, and instantly display data regarding global business activities. A global information system is an organized collection of computer hardware, software, data, and personnel. A tool for supplying historical, real-time, and predicted data on internal processes and outside activity is a global information system. Global information systems are transforming the way business is done by using interactive media, high-speed microcomputers, electronic data interchanges, fiber optics, data storage, and other technological advancements. UPS can trace any cargo for a customer using a satellite telecommunications system. Radio frequency identification is referred to as RFID. With the use of a cutting-edge technology, nearly any object can now be followed anywhere in the globe by having a little chip attached to it that may be woven into a fabric. This can shed a lot of light on the various global distribution channels as well as, possibly, the various means through which consumers obtain and use items.

Learning Objective 2.3 – Decision Support System

There are several ways to define marketing research. One approach is to group research according to the four business purposes it might fulfill:

1. Fundamental—provides answers to fundamental questions like what consumer segments and what kinds of items should be offered.

2. Testing—deals with issues like brand-new product concepts or marketing strategies. What will their effectiveness be?

3. difficulties—looks at how certain difficulties affect the company. Research topics include the effects of advertising spending or the way organizational structure affects employee results.

4. Performance – This kind of study keeps track of particular measures, such as financial data like profitability and turnaround times. They are essential for real-time management and "what-if" style analyses that look at the prospective effects of a policy change.

The monitored metrics may produce reports that are sent to management or they may be used to feed into automated decision-making systems. These serve as the cornerstone of a decision support system and best exemplify how marketing research helps managers make operational decisions on a daily basis. A marketing decision support system (DSS) is a tool that allows decision-makers to interface directly with analytical tools and computerized databases to solve problems. A decision support system's main function is to arrange and organize data so that marketing managers may quickly access it. By doing this, managers may use a DSS to make decisions that would typically take days or even weeks to make in a matter of minutes.

Customer relationship management (CRM) is considerably aided by contemporary decision support systems. The component of the DSS that handles communications between the business and its clients is the CRM system. It combines data on sales, market trends, marketing campaigns and how consumers react to them, consumer preferences, and other information about customers. A CRM system describes customer relationships in enough detail so that managers, salespeople, customer service agents, and possibly even the customers themselves, can directly access information, match customer needs with satisfying product offerings, remind customers of service requirements, and know what other products a customer has bought.

Effective marketers invest a lot of time and energy in gathering data to feed the decision support system. A DSS's output is useful information. Software and database requirements for a decision support system. The DSS becomes a component of a company's global information system if it conducts business internationally.

Databases and Data Warehousing

A database is a grouping of unprocessed data that has been logically ordered and set up so that it may be saved and processed by a computer. One type of database is a mailing list of customers. Another database might have information on population characteristics broken down by state, county, and city. Both the storing and retrieval of this information are made simple and practical by modern computer technology. It might have taken days or even weeks of library time to gather the population data required for a retail location analysis. These days, information is easily accessible.

Data warehousing is a procedure that makes it possible to organize and store crucial operational data for easy access. A data warehouse is a multilevel computer repository for both recent and old data, to be more precise. The precise data from operational systems must be extracted, converted, divided into logical partitions (such as daily, weekly, etc.), and stored consistently in order to manage data warehouses. Data warehouse-equipped companies can integrate datasets from both within and outside the organization. Effective data warehouse management demands a lot of computational power and knowledge.

Input Management

How does information get into a data warehouse where a decision support system can use it? Alternatively put, how is the input managed? All data entered into the DSS, including numbers, text, voice, and images, is referred to as input. Success of a decision support system depends on systematic acquisition of relevant, timely, and accurate data. Although various departments within a company offer input data, the decision support system as a whole is managed by DSS managers, systems analysts, and programmers. Salespeople, production managers, corporate libraries, accountants, marketing researchers, and many other members of the organization assist in gathering data and contributing to the DSS. Alternatively, input data may come from outside sources.

Internal Records

Internal records, like as accounting reports of sales and inventory figures, offer a wealth of information that marketing managers may find beneficial. In order to ensure that information concerning costs, shipments, inventory, sales, and other regular business operations is routinely gathered and recorded into the computer, an effective data collection system provides ordered procedures.

Proprietary Marketing Research

An extensive range of techniques and methodologies have already been described as marketing research. Consider a more constrained picture of marketing research to help explain the DSS notion. Private marketing research places a strong emphasis on the company's collection of fresh data. Few continuous or ongoing proprietary marketing research methodologies and methods are used. Instead, research studies that are carried out to examine certain business issues provide data; this is known as proprietary marketing research.

Salesperson Input

Salespeople frequently supply crucial marketing information since they operate in businesses' external settings. Managers are routinely made aware of price changes and new product offerings via sales reps' reports. It might also relate to the kinds of consumer complaints that salespeople are exposed to. This data may turn into marketing intelligence as trends emerge, causing a shift in product design or service delivery.

Behavioral Tracking

There are new techniques to monitor human behavior thanks to modern technology. Management can always keep track of the whereabouts of delivery staff thanks to global positioning satellite (GPS) devices. The navigation system in a car uses the same method to deliver directions. The phrase "single-source data" refers to a system's capacity to compile many associated data types from a single source in a format that will simplify integration, comparison, and analysis, such as the type of purchase, utilization of a sales promotion, or advertising frequency data.

Outside Vendors and External Distributors

Information is sold by external distributors and merchants as their goods. Numerous organizations focus on gathering and disseminating reliable information. The ACNielsen Company, one external vendor, offers data on television viewer demographics, audience sizes, and ratings for television programs. The dissemination of information is a specialty of other providers. Information has always been acquired by public libraries, generally in the form of books, and distributed by them. The demographic and lifestyle information that media representatives often disclose about their consumers is helpful. Certain marketing data is recorded and stored by organizations known as data specialists. Many of these institutions now give data in different ways thanks to computer technology, which favors the creation of digital databases.

Computerized Data Archives

There are many electronic databases and computerized search and retrieval systems that can be accessed through subscription services or in libraries. Data collection for businesses has gotten much more convenient recently, just as a student may now conduct a library search from home to gather

materials for a term paper. Business people can now access online information search and retrieval services from their offices, such as Dow Jones News Retrieval and Bloomberg Financial Markets. In reality, some information services can be accessed through digital wireless devices from far-off areas.

Customers of modern libraries can instruct a computer to search databases and retrieve them from a variety of providers. Many information organizations work as data wholesalers, much as wholesalers purchase commodities from manufacturers and sell them to retailers who subsequently distribute them to customers. Consortia of data sources are compiled by data wholesalers into packages that are sold to public, private, and academic libraries for a price. The data is then accessible to information users via these libraries.

Statistical Databases

For the purposes of forecasting and market analysis, statistical databases contain numerical data. A lot of the time, marketing-related demographic, sales, and other characteristics are recorded by location. These geographic datasets and robust software are used by geographic information systems to create computer maps of important factors.

Financial Databases

Managers may be interested in financial information about rivals and clients, such as income statements and balance sheets. Financial database access is simple for these.

Video Databases

The marketing of various products and services is significantly being impacted by video databases and streaming media. Franchise owners and their advertising agency can produce local advertising using the video database without having to record the same sequences that have already been stored. Just consider the significance of digital video databases for the decision-support systems of advertising firms.

Networks and Electronic Data Interchange

Networks provide connections between individual personal computers and other machines. To share data and software, two or more computers are connected through networking. Systems for electronic data interchange (EDI) link the computer systems of two businesses together. A significant portion of the input to a company's decision support system may come from computers at other companies via networks. Businesses can communicate business information with suppliers or customers

thanks to data services offered by businesses like Computer Technology Corporation and Microelectronics. For instance, Wal-Mart sends their apparel suppliers millions of characters worth of data about the day's sales every evening. For instance, Wrangler, a provider of blue jeans, publishes the data and a program that analyzes it. Additionally, Wrangler distributes software tools that help Wal-Mart retailers restock their inventories. The DSS informs Wrangler's management of the best times to transport specific amounts of jeans in specific sizes and colors from specific warehouses to specific stores. A learning loop that reduces inventory costs and prevents stockouts emerges as a result.

Learning Objective 2.4 – The Internet and Research

The Internet hadn't become a common term when the majority of this book's readers were born. In reality, very few people outside of a select few colleges and the US Department of Defense were even aware of the existence of the Internet. By enabling academics to apply research methods involving numerous mathematical computations that were previously impossible or at least difficult, mainframe computers transformed research in the 1960s. The 1960s mainframe computing capacity, which was largely used by big colleges, governments, and extremely large businesses, was developed in the 1980s into something that could fit on almost any businessperson's desktop.

By making computing power accessible and reasonably priced, the personal computer (PC) and basic operating systems like DOS and subsequently Windows changed many corporate applications. Perhaps the biggest change agent in marketing research today is the pervasive use of the Internet. Since the majority of readers are probably accustomed to utilizing the Internet, we just highlight a few terms and details that are particularly pertinent to comprehending marketing research. The World Wide Web and how to conduct online research are covered in the sections that follow. But remember that the Internet is a dynamic environment. By the time this book is published, the description of the Internet, particularly home page addresses, may be outdated. The Internet of today won't be the Internet of tomorrow, so keep that in mind.

<u>What Exactly is the Internet?</u>

Users can obtain data, information, and feedback from distant sources thanks to the Internet, a global network of computers. It serves as the biggest public library in the world and offers access to a

seemingly limitless amount of information. The Internet is often regarded as the most significant communication tool since television.

Over time, the Internet expanded into a network of interconnected computers across the country, and today it is a global network frequently referred to as the "information superhighway." The Internet does not have a single central computer; instead, each message carries an address code that enables the sender to forward a message to a specific destination from any computer connected to the Internet. The fact that the Internet is a network of thousands of tiny, domestic and international networks rather than a single computer operation accounts for many of its advantages. A domain is often the name of a business, institution, or organization connected to a host computer. The actual location of and access to the material for a certain website is called a host.

How is the Internet Useful in Research?

Researchers can benefit from the Internet in a variety of ways. In reality, as technology advances and is used by more and more people, more uses come to light. The Internet is extremely helpful for gathering data and as a source of information that is already available.

Accessing Available Data

Instantaneous and hassle-free access to a wealth of knowledge is made possible via the Internet. Numerous data and other resources are made available on the Internet by both commercial and nonprofit organizations.

The Business Resource Center made available to readers of this text includes a link to the Gale Research Database, which offers fundamental data and news articles about literally thousands of businesses worldwide. As a result, information that once required a lot of time and effort to gather is now accessible with just a few clicks. Furthermore, there is no need for a person to transcribe the data because it can frequently be downloaded or copied electronically. As a result, it is offered in a form that is less prone to errors.

Collecting Data

The way that academics get data is likewise changing as a result of the Internet. We go into greater detail on the usage of web-based surveys further on in this article. In other words, surveys can be hosted on a website and participants invited to visit a specific URL to do the survey. Since the data can be automatically captured rather than manually entered into an electronic format, this lowers the cost involved with conventional mail surveys and also reduces mistake. A consumer's use of the World Wide Web also leaves a record that can be tracked and scrutinized. Another way to monitor consumer behavior is through online auctions. In order to help with product design, demand forecasting, and price fixing, prototype products might be put up for auction online.

Navigating the Internet

The World Wide Web (WWW) is the name given to the specific area of the Internet that is made up of servers that support a retrieval system that groups information into documents known as web pages. Programming languages like HTML (Hypertext Markup Language) and XML (Extensible Markup Language) are used to structure World Wide Web documents, which may contain graphic images, video clips, and sound clips. These languages enable the sharing, linking, and presentation of information on the Internet. Content providers are individuals or organizations who supply information on the World Wide Web. Websites are kept up by content suppliers. A website is made up of one or more web pages that each include information pertaining to a certain subject; as an illustration, a university website would have pages describing its mission, courses, and professors. The initial page or opening screen is referred to as the home page because it gives a summary of the document's goal and offers a menu of options or links that take users to further screens with more detailed information. As a result, each page may contain links to other pages that may be located on any computer with an Internet connection. The World Wide Web allows users to access data that may be located on a host computer or on a machine halfway across the globe. A Uniform Resource Locator (URL) can also be entered into most web browsers by the user. The URL is actually just a familiar website address for web browsers. Many websites don't require prior authorization for access by any user or visitor. But before access is permitted, many commercial websites demand that the user have a legitimate account and password. A search engine is one of the most fundamental research resources offered via the Internet. A search engine is a computerized directory that enables anyone to conduct keyword searches on the World Wide Web to find information. The search

engine conducts a keyword search by looking through millions of web pages for content that contains the keywords.

Interactive Media and Environmental Scanning

Since users can click commands and frequently receive personalized responses, the Internet is an interactive medium.

Using interactive media also includes two or more people emailing each other privately using an Internet service provider. Those who use chat rooms or bulletin boards to communicate with a large number of senders and recipients are also. The Internet is a particularly helpful resource for monitoring a variety of environmental changes due of its size. Environmental scanning is the process of obtaining data to identify changes in the firm's external operational environment. These factors are frequently outside of the firm's control, but they can still have a big impact on how well the company performs.

Information Technology

Both push and pull technologies can be used to send data and information to customers or other end users. Consumers often ask a web page for information, and the browser decides how to respond. In essence, the consumer is thereby requesting the data. It is said to have been pushed through the canal in this instance. Push is the polarity of pull. Data is automatically sent to a user's PC using push technology. In other words, based on the pattern of previous answers, software is used to infer what information could be relevant to customers. A website, like the Yahoo portal, can transform into a one-on-one medium for each individual user thanks to smart information distribution, also referred to by a variety of technical names, including push phase technology. Personalized content is delivered to a viewer's desktop by "smart agents" or "intelligent agents" in today's information technology. An Internet user's tastes can be learned by smart agent software, which can then automatically find information and send it to the user's computer. Users can access stock quotes pertinent to their portfolios, local weather information, news about their preferred sports teams, and other customised data. Users can choose which parts of the service they want to get. With the use of push technology, relevant content is automatically pushed to the viewer's desktop.Cookies are tiny computer files that keep track of a user's web browsing habits. The fact that the user visited the website and the zip code entered are stored in the cookie if they search for a weather report by entering their zip code into a tailored web page. This is a hint that reveals the person's

residence (or perhaps the location of a potential visit). Based on the data in the cookie, websites can then direct information to that user.

Intranets

A company's private data network that makes use of Internet standards and technology is called an intranet. Only employees of the company or those whom the company deems appropriate participants have access to the data, graphics, video, and voice on an intranet. As a result, one significant distinction between the Internet and an Intranet is the installation of security software, or "firewalls," to restrict access to just those personnel who are permitted to use the system. Then, intranets act as secure knowledge gateways that may combine information from internal sources with external information and contain large volumes of organizational memory. Making sure that an intranet can transmit pertinent data to decision-makers is a difficulty when designing one. According to research, relevance is important in encouraging knowledge workers to use corporate intranets. It is possible to expand the Intranet to include important customers as a source of insightful research. Their involvement in the intranet may result in the creation of new products.

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Progress Check:

Requirements:

1. Due Date : _____
2. Essay format, minimum of 20 words and maximum of 100 words.
3. Format

Questions

1. Explain the differences between the terms data, information, and intelligence
2. List the four qualities that explain why data is useful.
3. Describe the function of a decision support system.

Answer

1. The growth of global information systems has been accelerated by heightened international competitiveness and technological advancements in interactive media. A global information system is an organized set of computer hardware, software, data, and personnel intended to collect, store, update, manipulate, and analyze data regarding global business activity, then instantly display it. There are distinctions between data, information, and intelligence from the standpoint of study. Information is simply data that has been prepared (structured) to facilitate decision-making or define the link between two facts. Data are merely facts or measured measurements of specific phenomena

(things). Market intelligence refers to the portion of data and information that actually has some explanatory power, allowing for the making of efficient judgments.

2. The relevance, quality, timeliness, and completeness of data can be used to describe its usefulness to management. Data that is relevant to the current situation has this property. The knowledge is beneficial. The degree to which data accurately reflect the scenario at hand determines the information's quality. Accurate, dependable data are valid and true. Good data give a true image of reality and properly reflect reality. At the appropriate time, timely information is collected. Timeliness can be increased by using computerized information systems to quickly provide information and record events. The ideal amount of information is complete information. Marketing managers need access to enough data to connect all of the decisions they make.

3. A database is a grouping of unprocessed data that has been logically ordered and set up so that it may be saved and processed by a computer. Internal records, exclusive marketing research, marketing intelligence, outside vendors, and external distributors are the four main sources of marketing data. Each source has something insightful to say. Most businesses create and keep a variety of databases, thus they frequently create data warehousing systems. Data warehousing is a procedure that makes it possible to organize and store crucial operational data for easy access. A data warehouse is a multilevel computer repository for both recent and old data, to be more precise. In order to ensure consistency across the numerous database tables from both inside and outside the firm, data warehouse management calls for the extraction, transformation, and storage (or "warehousing") of the detailed data from operational systems. The decision support system that automates or supports business decision making incorporates all of these. There are many database search and retrieval systems that can be accessed at libraries or by subscription. External data collection has become quicker and simpler because to computer-assisted database searching. Databases come in a wide variety of forms, according to marketers. Personal computers can connect to other computers in networks to share data and software even if they operate independently. A company's computer system can connect directly to another company's system using electronic data interchange (EDI).

Marketing Research
Chapter 2
Information Systems and Knowledge Management
Lecturer: Michaella DeLeon Castillo, DBA - Philippines

Quiz 2

Identification

1. The combination of knowledge, insight, and data that makes up organizational memory.
2. A tool for supplying historical, real-time, and predicted data on internal processes and external activity is a global information system.
3. The transaction that takes place when the computer systems of two different businesses are connected.

4. Data that has been structured (formatted) to define the relationship between two facts or to facilitate decision-making.
5. When a user requests information from a web page, the browser decides how to respond; in essence, the user is requesting for the data.

Answer

1. Knowledge
2. Global Information System
3. Electronic Data Interchange
4. Information
5. Pull Technology

Fill in the blanks

1. Two or more individuals who communicate one-to-one via e-mail using an Internet service provider are also using _____.
2. _____, in computer terminology, are small computer files that record a user's web usage history
3. The _____ is a research tool for the universities and organizations involved in its development.
4. A _____ is typically a company name, institutional name, or organizational name associated with a host computer.
5. _____ refers to the accumulated records resulting from point of sale data recordings.

Answer

1. **Interactive medias**
2. **Cookie**
3. **Internet 2**
4. **Domain**
5. **Scanner Data**