PORTFOLIO 2

DATA AND INFORMATION, INFORMATION SYSTEMS, DIFFERENT TYPE OF SUPPORT SYSTEMS IN INFORMATION SYSTEMS

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DATA AND INFORMATION

I. Data

Data is defined as the collection of “unstructured information” (GeeksforGeeks, 2024). It is raw information gathered in different forms which can be numerical or non-numerical. This information is meaningless as it has only been stored or recorded but not processed (Afe Babalola University, 2019). In the domain of business, these data have to be gathered within specific and consistent standards to ensure their quality (*Brown*, 2022).

Two Types of Data

- Quantitative Data
    - These data refer to information represented in numbers such as height, distance, etc.
- Qualitative Data
    - These data refer to non-numeric data like opinions and perceptions.

II. Information

After data is processed, organized, and structured, information is then created. The information provides useful and meaningful data in a given context. To explain further, a study by Rashid et. al (2021) on the prevalence and impact of the use of electronic gadgets on the health of students in Bangladesh, showed that among 1803 students 67.11% of those students used mobile phones daily.

To further understand the difference between the two, refer to this table from Afe Babalola University’s (2019) article on data and information.

S/N	Data	Information
1	Data is raw, unchanged fact	Organized and sorted fact
2	Data by itself is insignificant	Information is significant

3	Observed and recorded data	Analysis of data to obtain information

III. Converting Data to Information

A familiar concept in programming helps to visualize how data is converted and processed into information: the “IPO model” concept or the “Input-Process-Output model” from Goel’s (2010) book of computer fundamentals.

While this model might be in the context of how computers process input, the same steps are used to convert data into information. (1) Gather the data, represented as input in the graph, (2) analyze the data in ways that fit the context, which is processing, and finally (3) produce valuable information that may help you with whatever you are analyzing.

INFORMATION SYSTEMS

I. Information Systems

Information systems as a discipline

is focused on the organizational side of the tech industry. This discipline is concerned mainly with turning data into useful information for businesses to make strategic decisions.

An article from Carnegie Mellon University portrays that under this discipline students will be able to gain an in-depth understanding of the following:

- **Knowledge in Humanities and Social sciences**
    - Promoting self-directed learning, critical thinking, and problem-solving.
- **Information Systems Core**
    - To equip students with the capability to provide the technology, project management, and business skills needed to effectively design and build real-world systems solutions.
- **Information Systems Breadth**
    - Professional communications, quantitative analysis, and how technology plays a role in society
- **Concentration**
    - Provides flexibility and agency to gain expertise in a supporting area and define one's niche in IS.

Information as a Work System

According to a study by Alter (2008), defining an information system is based on the concept of "work systems".

- **Work systems** are systems in which humans and/or machines perform work using technology and information to produce outputs benefitting end

users. He defined an information system to be a work system focused on processing information.

Therefore, information systems must be a system in which humans and machines work using information and technology to produce informational products for end users.

Information Systems (by itself)

An information system is an integrated environment for hardware, software, and people to collect and process data (Hasan, 2018).

We turn data into information to gather insights about the behavior of a certain context and use those insights to further improve existing implementations in one's business.

3 Dimensions of Information System (IS)

- **Organization**

    - Information Systems by use is a crucial part of organizations and businesses.
    - IS holds the standard operating procedures that form the culture within the organization
    - This dimension involves the company's in and out holistically.
- **Management**
    - Involves leadership, strategy, and management behavior.
    - The information system provides relevant information for managers to make critical decisions.
- **Information Technology**
    - Consists of hardware and software, data management, technology, and networking/telecommunications technology.

II. Importance of Information Sytems

Why study information systems?

The first reason why information systems are important is the factor of being informed. With technology's fast-paced progression, one might not be able to appreciate the technology that one uses Rainer et al. (2020).

A lot of businesses today, if not all are wedded to these systems. A lack of these systems in their organization may most likely place them in a straggler position or getting left behind.

Job Security

Hundreds and thousands of Jobs are available for Information Systems graduates, and these jobs are projected to remain strong in the market for the next 10 years (Rainer et. al., 2020). The information that the systems procure is

crucial for strategic decisions within businesses which is why it is valued so much.

Value to the Industry

According to a study conducted by Ragowsky et. al.,(1996), as far back as 1996 IS systems have indirectly contributed to the decision-making processes of organizations and businesses.

While their study might have not found a direct connection, it is evident in the present time that It is indeed useful.

Useful as companies know what products to put in the market, trends are easily taken advantage of by companies, and what the users see on their screens is designed to their individual preferences.

DIFFERENT TYPES OF SUPPORT SYSTEMS

I. What is it?

Support systems in the context of Information Systems are “information technology infrastructure that establishes an environment for organization and individual decision making.” (Fedorowicz & Konsynski 1992)

Taken From: Sharma, V. (n.d.). Types of information systems. *Types of Information Systems*.

II. The Different Support Systems

Operational Level Support Systems

Systems that exist to keep track of the organization’s in and out operations such as transactions, processing, finance, and communications. Users of these systems are front-desk and front-line workers.

- **Transaction Processing Systems**

  It tracks the flow of daily transactions and operations through the organization daily. (Laudon & Laudon 2004).

Managerial Level Support Systems

Management-level systems are used by middle managers to optimize business operations and make critical decisions based on previous information.

- **Management Information Systems**

  Creates reports and summaries of results from current implementations to help make better decisions

Executive Level Support Systems

Used by senior managers which facilitates what knowledge and operations should be and is implemented within an organization.

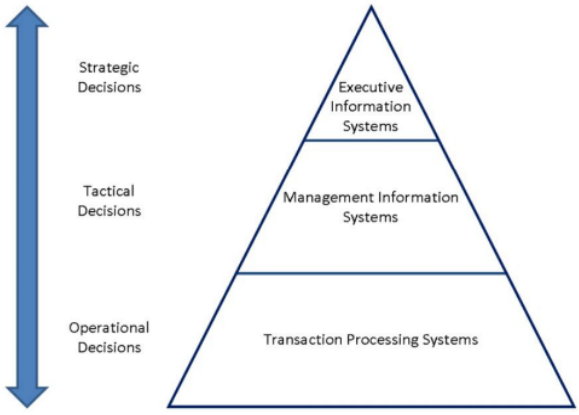
- **Decision Support System**

  Assists executives and managers in making complex decisions to uncertain outcomes by providing models and scenario analysis.

- **Executive Information Systems**

  Provides high-level and critical information in a user-friendly format. This information assists senior executives in strategic and tactical decision-making.

The illustration below show the differences of these 3 levels of support systems:



Taken From: Sharma, V. (n.d.). Types of information systems. *Types of Information Systems*.

REFLECTION

I first thought of Information Systems as a concept that has this distance between technology. I thought Information System was just a term used by companies and businesses to organize and read data and gain insights from it. While this might still be true, information systems after this portfolio and my research have given me a new perspective on what it is.

The concept of Information Systems is quite a broad topic as when I was researching a lot of studies tend to define it differently. However, in its very essence, it is a system that turns data into information. Regardless of who is using it, it is simply a system designed to process data and turn it into a useful information for a given context. It can be as simple as the most played song on your spotify for the year 2024, or it can be stocks or currencies. In the high context, however these systems are exploited by companies and organization to get ahead of competition. These systems enable businesses to make critical, strategic decisions based on the behaviour of the market as displayed by these information systems. Given that it is this crucial, as a discipline, Information Systems is as complex as it gets. Connecting business ideologies with the Information Technology Ideologies. When these concepts are united and inherited by an information system graduate. That graduate will be in demand as data science and data analyst are in demand of the market right now and most likely still in the future.

Information system is truly a powerful tool especially in the business world. However, this could also be a very dangerous and invasive tool, as information is easily collected, distributed and used around the world. At that point companies who you do not know exist, may know every single thing about you and that information may fall into the wrong hands if breached.

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