## **Assignment Activity Unit 1**

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## **Introduction**

This paper analyzes storage needs, software selection, and business challenges in acquiring computers for a small e-commerce operation, drawing on the UoPeople learning resources.

## **Storage Needs Analysis**

A new business venturing into the digital space will no doubt require data management, including customer records, inventory, transaction logs, backups, etc.

Gupta and Goyal (2020) describe a storage device as an online extension to the main memory capable of storing large amounts of data, and that is also used for offline storage of programs and data. A secondary storage device is simply one that exists outside the computer system.

The secondary storage devices have their various strengths. Hard disk drives (HDDs) are generally very affordable and can store large amounts of data. USB drives and solid-state drives use flash memory internally, offering high data retrieval and traversal speeds. While USB drives can hold moderate amounts of data, SSDs have a similar storage capacity to HDDs.

A recent secondary storage option is cloud storage, which utilizes large networks of remote servers containing both HDDs and SSDs. The data in cloud storage is accessible over the internet.

Storage devices will ensure that the business’s data persists even when the computer system shuts down because these storage devices are direct-access storage devices, and the data stored on them can be accessed directly. This allows for bulk data storage that can be easily retrieved.

## **Software Selection**

Software within a general-purpose system is divided into system software and application software.

The system software is responsible for the coordination of all activities in a computer system. Specifically, the operating system, which is a system software, coordinates the flow of information from the computer to the user and vice versa (Gupta & Goyal, 2020). Without the operating system, no application software can run on the computer. It, along with the other system software, is the bedrock upon which everyday application software may function. Linux, Windows, and macOS are operating systems.

Application software is written for a specific purpose (Gupta & Goyal, 2020). It allows the user to accomplish complex computing tasks by relaying user input as commands to the computer. There is a wide range of application software. Of these, some are critical to the business, such as database software, which organizes business data such as inventory, customer information, transactions, etc., e.g., MySQL, Oracle.

Also critical is the e-commerce platform by which the business hopes to sell. This may be a native application software, developed to run on the computer’s operating system, or, in this case, a website, accessed via an internet browser. In recent times, e-commerce platforms have become predominantly web-based.

Embedded software is a program that “runs on ‘custom-built special-purpose’ hardware which is designed to perform a single well-defined duty,” per Embedded 101 (2021). Certain business operations, such as payment processing, require specialized hardware and accompanying software. This includes a point-of-sale (POS) machine that has an integrated payment processor, enabling seamless transactions.

## **Challenges and Considerations**

Potential challenges and considerations in this business environment are outlined as follows

* **Scalability**: The ability of storage and software to grow with the business and its customer base is a major concern for success.
* **Data security and compliance**: The responsibility of protecting sensitive customer information rests on the business; as such, ensuring compliance with Data Protection policies is paramount.
* **Cost-benefit tradeoffs**: It may be difficult to balance performance with budget constraints, especially considering that it is a new business.
* **User training and support**: Ensuring employees adapt to the new systems will involve temporal and possibly fiscal investment with regard to training programs or retaining the services of an IT support specialist.
* **Reliability**: It is expedient that downtime be minimized through redundancy and backup solutions, so as to avoid loss of profit.

## **Conclusion**

An appropriate secondary storage device will allow for data persistence and retrieval. Software, whether system, application, or embedded, is critical for the smooth operation of business in a digital landscape. Anticipating challenges will aid in their resolution, leading to successful management and mitigating losses.

## **References (APA 7th edition)**

Embedded 101. (2021, March 10). *Embedded 101 course: Embedded software* [Video]. YouTube.<https://www.youtube.com/watch?v=0OsRt8pB3z8>

Gupta, C. P., & Goyal, K. K. (2020). *Computer concepts and management information systems*. Mercury Learning & Information. University of the People Library.