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## Question 1:

Hardware:   
The first component in the framework is the hardware needed for the system. In both internal and external systems, hardware is a key component. In this case, specific hardware will be required for the improved type of systems. For example, in order to implement an internal system, servers, communication equipment, storage devices, and other hardware will be needed. Furthermore, in order to improve the system, a hardware upgrade will be required.

## Software:

The second component of the framework is software. For any internal or external system, software is an integral part. This is mainly because it ensures the user is able to access the resources and services available in the system. Furthermore, software will be used in the development process. This includes the software development tools that will be used in the development process.

## Data:

Data is the most important part of the system. This refers to the information processed by the system in order to give an understandable output. For any internal and external system, it is important to model all the data that will be captured by the system. This will help in ensuring that the system developed meets the laid out data needs and requirements.

## Procedures:

Procedures will provide the guidelines that will dictate how the system will be used and how users will access the data available on the system. In the development process, they are important in ensuring that

## People:

The last component in the framework is the people. In the development process, different individuals will be involved. These include developers, testers and the users of the system. It is imperative to take into account the needs of the different people involved in order to develop an effective internal or external system.   
Question 2: Respond as the question is designed in the e-textbook. Show research to support your response. Compare each area of the 5 component model on both alternatives. What hardware, software, data, procedures, and people (in terms of skills) would the team need to implement both?

## The examination below compares based on the 5-component model what the team would need in order to implement both alternatives.

Alternative 1: Each develop their own property database   
Hardware   
Individual Servers, Communication equipment (routers, switches), data storage   
Software   
Cloud services, individual custom software, development software   
Data   
Individual data for each organization   
Procedures   
Data access procedures for each organization   
People   
Software engineer, database developer, database manager, and users for each organization   
Alternative 2: Develop a centralized property database   
Hardware

## A central database Servers, Communication equipment (routers, switches), data storage devices

Software

## Cloud services, single data access software

Data

## Collective housing data from the three organization

Procedures

## One set of data access procedures for the overall database

People

## Software engineer, database developer, database manager and the database

Compare and contrast your answers in question 1 and 2. Which is likely to be more expensive to develop? Which is likely to be more expensive to operate?   
The first alternative (develop separate databases for the three companies) is the most expensive to develop. This is mainly because each organization would be meeting its own cost to develop a database. However, developing one database will lower the cost for each organization since they will share the development cost.   
The first alternative will also be more expensive to operate. This is attributable to the fact that each organization will have to hire its own individual software engineer, database developer, and database manager to maintain the database. Having a central database will eliminate this additional maintenance costs.

## References

Chao, L. (2006). Database development and Management. Boca Raton, FL: Auerbach Publications.