

IS 320 Week 12 Assignment: Case In Point

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Alice's Restaurant Supply

Wireless Standards that could be implemented

The first standard is IEEE 802.11 which is well known and the original version. Unfortunately, it is not fast enough to best serve the increasing need (in terms of network speed) of market players. The second one is IEEE 802.11b whose network speed is estimated to be 11Mbps. The advantage of this version is that it is applicable to the wireless networks in the local area. On the contrary, the speed is relatively low compared to the new standards. The third standards include 802.11g with a speed of 54 Mbps and 802.11n with expanded bandwidth of 450 Mbps (Tilley & Rosenblatt, 2017). These new versions are accepted by a large number of market participants in the IT sector. Lastly, the current advanced version with faster speed is the speed of up to 7Gbps (theoretically) is 802.11ac (Tilley & Rosenblatt, 2017). However, this standard is expensive and commonly used by large enterprises.

Standard to Implement

The Best Wireless Standard to implement is IEEE 802.11g because most of the players in the industry accept it and thus it will ensure conformity with customers and suppliers' system architectures. This standard is highly compatible and provides a connection at a radio frequency of 2.4 GHz ISM band (University of Pittsburgh, 2019). Moreover, the standard offers the required network throughput and range balance and supports the mobility of the devices effectively to serve the need of users.

Effect of Extensive Use of Microwave Ovens and Cordless Telephones

Microwaves and cordless telephones have an average radio frequency of 2.5 GHz and thus interferes with wireless networks with similar ISM band. Since IEEE 802.11g operates within 2.4 GHz frequency, the network speed will be significantly reduced due to the extensive use of microwave ovens and cordless telephones. This implies that a standard

with higher bandwidth such as 802.11ac. Other standards such as 802.11 and 802.11b would not be a good choice in the environment.

Best Wireless Topology

In this case, workers must use portable tablets and computers in a number of warehouse locations. This shows that the company needs a highly expanded network service that will cover the broad area where the warehouses are located. This can be achieved through using the Extended Service Set (ESS) topology because it offers the expanded wireless connection. This topology will ensure that a Basic Service Set Network is placed in each warehouse such that when the employees move one warehouse to another, they are able to automatically connect to the stronger network through roaming (Tilley & Rosenblatt, 2017).

Passing Lane

Application of Supply Chain Management in Designing the New System

Yes. Supply Chain Management concept should be applied because the designing of the relational database will require integrated to enhance connectivity between the workstations, the warehouses, and the transport unit. This can take the form of Enterprise Resource Planning where the freight clerks can easily enter the information regarding the trucks on the road as well as monitor their entire movement. In fact, the use of ERP in Passing Lane SCM will increase the response rate between customers and the firm, lower operation expenses, as well as improve services to the customers in the form of secure, reliable, and on-time delivery (Tilley & Rosenblatt, 2017).

Advantages of Selecting Web-based Architecture

In web-centric architecture, the web acts as a communication path as well as a vital component of the application. This implies that the website will be a platform where Passing Line will be able to undertake all of its operations processing of the customers' order,

entering data, preparing freight bills maintaining customer relationships, tracking the fleet. In addition, purchasing the web-centric architecture as a service will minimize costs related to configuration, installation, and upgrading because this will be the work of the vendor (Tilley & Rosenblatt, 2017). Lastly, the company will minimize its dependence on desktop computing in the form of entering data and preparing freight bills because the web will offer these functionalities (Tilley & Rosenblatt, 2017).

Design Features to be Included in the New System

First, the management summary will indicate a summary of the costs, benefits, review, schedule, status, and any issues that should be addressed in the new system. Secondly, the constituents of the new system such as inputs, outputs, network specifications, databases, and files (Tilley & Rosenblatt, 2017). Other components to be included are recovery and backup specifications, file retention, and start-up processing. Thirdly, the possible conditions that may constrain or affect the system such as increased transactions which implies a rise in the amount of data to be stored (Tilley & Rosenblatt, 2017). Fourthly, the requirements to implement the system such training of the workers, acquisition of the initial customer and freight data. Lastly, the estimated time and costs in the form of detailed schedules, workforce requirement, and cost estimates (Tilley & Rosenblatt, 2017).

Design Considerations for the Legacy System

The first consideration is the compatibility of the new systems with the legacy system. In this case, the analysis should indicate if the new design will co-exist with the old system or replace it completely. Secondly, the formats of data used in the old system and new design. The analysis of these data formats will indicate if Passing Lane will have to convert the existing data into formats that are compatible with the new design (Tilley & Rosenblatt, 2017).

References

Tilley, S., & Rosenblatt, H. (2017). *Systems Analysis and Design* (11th ed.). Boston: Cengage Learning.

The University of Pittsburgh. (2019, April 19). *Wireless Network Standard*. Retrieved from <https://www.technology.pitt.edu/help-desk/how-to-documents/wireless-network-standard>