System Integration

Name

Course

Tutor

Date

**Introduction**

The significance of quality assurance to a system in regards to its incorporation and the component processes and procedures can never be underestimated nor can they be understated as their roles are too important to be overlooked. Summarily, quality assurance can be defined as the systematic and planned means through which outlined management standards, practices, procedures, and methods of a particular phenomenon are tracked or somewhat followed. In system integration, the purpose of quality measurement and analysis hinges on the development and sustenance of a measurement capability to support the needs of management information needs. The work presented herein seeks to expound on the process of system integration with particular focus trained on various aspects including factors for consideration and the categories under which efficient system integration process could be achieved

**Factors for quality assurance consideration during system integration**

The fragmented nature of a system means that it has various parts and aspects that are put into the account to make perfect homogeneity and ingenuity as well as ensuring composition sync to enable the components to work together s they were intended to in the first place or rather at conceptualization. For that matter, the following factors have to be considered as a measure to achieve such heights as indicated or rather dictated; (Yu, et al, 2014).

*Data flow*

The scope and manner in which data flows in a system are among factors considered during its integration. The unidirectional flow of data within a network gives the users the luxury of invoking either a real-time update system for the components or an interval based update technique for the system. The bidirectional order of data flow, on the other hand, leaves the designers with no choice since updates can only be done in real time.

*Source of truth*

A technique used to prevent data duplication, the source of truth is a phenomenon in which one system is chosen to store data while another references it to minimize mismatch and subsequent data misinterpretation.

*Master data*

The ability of a system to create a centralized data from multiple systems to serve as the point of reference for the numerous data protocols as referred to as the customer data.

*Urgency*

The number of times for which synchronization of data is necessary for a system is known as its urgency. Scheduled data transfer is best done regularly while emergency data needs real-time observation.

**Assurance categories**

The quality of integration in a system is categorized according to some factors to help in achieving a sense of measurability and progress within the system especially under scrutiny. The perspectives under consideration or instead the categorizations of measurement include the following parameters; (Hvelplund, et al, 2017).

*Judgmental*

The absolute and universally recognizable transcend of quality that bears uncompromising high standards as well as quality.

*Product based*

As a product, quality is a specific variable that is measurable and is uninfluenced by other characters such as size and so forth.

*Value based*

As for cost, it refers to the measure of a product quality on the willingness of some people to pay for relatively higher prices to acquire the same.

*User-based*

Defines quality as a measure of suitability for intended purpose or rather the efficiency with which it carries out the specified functions.

*Evidence based*

**Evaluation methods**

Determining the quality of the process of system integration is a little complicated as evidenced by the reliance on variable means to learn the same (Wang, 2017). The first evaluation method is the quantitative performance requirements of both the user and the system through operational test programs. The other measuring technique would be technical performance measurements which monitor a developer's progress in meeting performance requirements over the system lifetime. Different evaluation methods include earned value management as well as process metrics. The most effective and appropriate evaluation would be the quantitative performance requirements method. The statement is inspired by the fact that this technique looks into the rate of both user and system satisfaction as derived from the system functioning.

**References**

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Yu, X., She, X., Ni, X., & Huang, A. Q. (2014). System integration and hierarchical power management strategy for a solid-state transformer interfaced microgrid system. *IEEE Transactions on Power Electronics*, *29*(8), 4414-4425.