Analysis of Google Enterprise System Integration

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**Introduction**

As discussed in the previous papers, system integration is a procedure of combining the subsystems of the components into one collaborative system and making sure to the subsystems operate collaboratively as a system. The system integrator integrates discrete systems using several techniques like enterprise application integration, computer networking, manual programming and business operation management (Chen et al., 2008). There are various methods of system integrations, but this paper aims at examining three possible options in the system integration system.

**Refining the list of quality assurance concerns**

Quality control is a set of processes or a process that aims at ensuring that performed service or product manufactured complies with a definite set of quality criteria or adheres to the needs of the customer or client. Quality assurance is almost similar but not identical to quality control. However, quality assurance is defined as a process or set of processes that aim at ensuring that a service or product under development, that is, (before the manufacturing process is completed, contrary to afterward), adheres to stated requirements. Quality control is expressed together with quality assurance as one expression, quality control and assurance (Chen et al., 2008).

**Potential options have been considered in the system integration process**

As pointed out in the introduction part, there are numerous methods that Google can utilize in the system integration projects, but this paper will only examine the best three options. They include;

**Star Integration**: This method is commonly referred to as spaghetti integration. This method involves interconnecting each system with all the remaining subsystems in the system integration. When viewed from the angle of the subsystems been integrated, the links resonates a star, however, when the general diagram of the entire system is showcased, the links look much like spaghetti, thus the name of this technique(Chen et al., 2008). The cost of this method varies due to interfaces that subsystems are transferring. In a situation where these subsystems are transferring proprietary or heterogeneous interfaces, the cost of integration can rise substantially. Costs and time required in the systems integration procedure rise exponentially when additional subsystems are included. When the features are considered, this technique seems preferable, because of the exciting flexibility of the functionality reuse (Shen et al., 2004).

**ESB (Enterprise Service Bus) or Horizontal Integration:** This method of integration involves dedicating a specialized subsystem to communication with other subsystems. This enables minimization of the number of interfaces or connections to only single interface in every subsystem which links to the ESB directly. The ESB have the abilities to translate the interface into the other interfaces. This, in turn, offers flexibility and reduces the integration cost(Shen et al., 2004). With the use of this method, it is possible to fully replace a certain subsystem with another subsystem which offers the same performance but does not export the same interfaces, all this fully transparent for the other subsystems. Implementing the formed integration between the new subsystem and the ESB is the only required action. Nonetheless, this technique can be misleading, if it is supposed that the cost of transitional information transformation or the cost of ever-changing duty over business logic can be prevented (Shen et al., 2004).

**Vertical Integration:** This method is the opposite of the horizontal technique. It involves the procedure of integrating subsystems about their performance by forming functional units also known as silos. The advantages of this technique are that it integrates the subsystems quickly and the necessary vendors only, thus making it cheaper in the short terms. Conversely, the ownership cost can be considerably higher than experienced in the other techniques, since in the situation of enhanced or new performance, the only potential manner to implement would be by adopting another silo. It is not possible, however, to reuse the subsystems to make other functionalities (Shen et al., 2004).

**Evaluation Method**

The American Association mandated with evaluation has established a set of regulatory doctrines for evaluators. The order of these doctrines does not imply significance among them; significance will differ by evaluator role and situation. The doctrines are as outlined and discussed below:

**Systematic Inquiry:** Evaluators perform systematic inquiries based on the data concerning everything been evaluated. This needs quality information collection, with the inclusion of a defensible selection of displays, which lends reliability to outcomes. The outcomes are reliable when they are based on the evidence; such that it aligns with the aims of the analysis and offers dependable information (Chapman &Kihn, 2009). Moreover, the utility of outcomes is paramount in a way that the data retrieved by analysis is timely and comprehensive, and therefore serves to offer maximal use and advantages to all the concerned parties.

**Competence:** The evaluators offer competent functionality to all stakeholders. This needs the analysis teams to include a proper combination of competencies, such that appropriate and varied professionalism for the analysis procedure and that, the evaluators will function within their areas of abilities (Chapman &Kihn, 2009).

**Honesty/ Integrity**: Evaluators make sure that integrity and honesty of the whole analysis procedure. A critical component of this value is liberty from bias in the analysis which is underscored by three values: transparency, impartiality, and independence (Chapman &Kihn, 2009).

**Techniques evaluation table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Weighting components** | **Horizontal Integration** | **Vertical Integration** | **Star Integration** |
| Speed | Functions quickly | Functions quickly  | Moderate |
| Cost | Cheap in the short term but the cost is exponentially higher. | Reduced cost | Cost varies because of the interfaces been exported |
| Reuse of functionality | Not possible | Possible | Possible  |
| Time | Moderate | Moderate | Increases when exporting additional subsystems |
| Flexibility | Not flexible | Extreme flexibility | Extreme flexibility |

From the above analysis, it is clear that the best option for Google system integration is the vertical integration method. The table above shows that the method is cost effective, quick in the integration process and extremely flexible in the reuse of functionality. The advantages of this technique is that it integrates the subsystems quickly and the necessary vendors only, thus making it cheaper in the short terms

References

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