Case Study

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Challenges Presented by the ASFINAG Project during the Database Installation, Administration, and Security

The implementation and maintenance of databases are complex tasks that require expert knowledge. During the implementation of ASFINAG project, design and application necessitated the sourcing of a team of experts who would work together towards the realization of the intended goals. The ASFINAG project differed from an embedded system. Had it been an embedded system, the expertise, as well as the ongoing maintenance requirements, would have been avoided. The project missed the opportunities that were availed by an embedded system; that is why it took 100 professionals a total of 18 months to complete it (Fong 2011, pp. 20-21).

The administration of a database consists of two important components: the initial configuration and the ongoing maintenance. Initial configuration comprises a database design, its manifestation as well as its tuning. The implantation of the ASFINAG project facilitated the definition of a specific environment as well as a set of tasks that required expertise. These definitions were made during the commencement of the configuration process. Subsequent efforts have been focused on the need for having an ongoing maintenance. This arrangement has enabled the system to continue functioning uninterruptedly and with minimum intervention from the administrator (Mannino 2007, pp. 34-40).

Some of the applications that access the database have been granted privileges that go past the prerequisites of their functions. These privileges may be abused by people with malicious intentions. For example, an administrator, who has been tasked with the role of changing the drivers' contact information, can misuse the update privileges to edit or delete records of wrongdoing (Zurawski 2007, pp. 2-8).

The Benefits of the Project to Drivers and the Highway System

The implementation of the system saves time for the drivers who would, otherwise, be required to queue and wait for their charges to be computed. This would then prompt them to drive at high speed, thus increasing the number of accidents. The implementation of the advanced technologies has had a positive impact towards the reduction of the freeway accidents. With the system in place, the prosecution of the errant drivers has been simplified since photos and videos are used hand-in-hand with other pieces of evidence. In this regard, road users are prompted to abide by the law, thereby reducing the number of accidents and obstructions on the highways (Mordini & Green 2009, 23).

Business Functions being Supported by the Database at ASFINAG

The emergence of the digital firm made information systems essential components of the contemporary business activities. Information systems are part of the foundation of business functions, and it is due to this that the implementation of the ASFINAG project incorporated significant business functionalities (Jepson et al. 2000, pp. 30). The functionalities include the strategies of handling numerous transactions in a significantly reduced amount of time. The transaction are handled with reduced human intervention – a possibility that enables stakeholders to save much of the resources that would otherwise be used to maintain a vast human capital (Mordini & Green 2009, pp. 23).

Appropriate Database Applications for the ASFINAG Database

Database applications are computer programs that are meant to facilitate the entry and retrieval of data from computer-managed databases. An appropriate database application for the ASFINAG Database is the one which

would facilitate the simultaneous queries and updates, even where multiple users are involved (Elmasri & Navathe 2011, pp. 12-16). In this regard, the best application would be the DB2 Data Warehouse Edition as it is a set of products which incorporate the strength of the DB2 Universal Database with the business intelligence groundwork from the IBM. DB2 Data Warehouse Edition proves to be favorable since it provides an appropriate intelligence platform (Alessi 2011, pp. 5-12).

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