

# Smart Statistics as a Service

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Realizing the importance of information and statistics in decision making and planning to improve the government organizations strategic activities, provided the drivers to Dubai Statistics Center (DSC) to initiate a comprehensive program to elevate the statistical work in Emirate of Dubai. A successful implementation of *Smart Statistics* in Emirate of Dubai has overcome the challenges previously identified, and achieved government bodies goals and expectations over the years. By taking a step further, DSC plans to share its experience by allowing other government entities collaboratively to utilize *Smart Statistics* solution as a free of charge service and in a customizable mode. Prior to do so and in order to achieve the initiative objectives, awareness has been promoted through the years as the adoption of the solution spanned to cover almost 50 government entities in Dubai, extended later to cover other emirates as well. Partnerships have been established to maintain tightly and closely coordination in order to meet the increasing demand of statistics and satisfy constantly changing requirements as implicated by the fast growth of the Emirate.

## Smart Statistics

*Smart Statistics* is a full fledge solution developed and implemented to provide a centralized repository for statistical data with variety of tools and services to report, analyse and provide business insight to the decision makers, government users and private businesses as well. It is based on an in-house developed framework from Data integration covering Data mapping and cleansing to Data analysis and dissemination providing various options to decision makers, analysts and statistician.

Integration is implemented by adopting various technologies in order to provide flexibility to diversity of data sources owners and technologies implemented, taking into consideration entities policies and the willingness to share their data. Data collection varies from transactional and operational systems to aggregated data stores, diverse from excel sheet to XML and web services, and from e-forms to ETL jobs and even through smart devices. The purpose was to ensure cooperation and reduce investments required by data sources government entities and further not to impose any technology or solution to achieve the integration. DSC will consider and hold responsibility of any further investments needed to ensure a seamless integration with the sources at no cost at all. The integration solution provided an up-to-date statistical information fed to the centralized repository which is based on an

enterprise Data warehouse solution where data manipulation and aggregation, providing data marts are managed and metadata system is provided.

A set of tools provided to users taking into consideration the level of users anticipations and skills, the areas of interest and the authorization access based on their roles and functions, facilitating how users obtain and access the information needed. Decision makers provided with an interactive visualization dashboard system, while analysts and sophisticated users have the ability and flexibility to build their own reports, design their own charts online and initiate analysis functions on the fly.

### **Software as a Service (SaaS)**

Advancements in technology provided new opportunities and opened doors to modernize how organizations deliver its service, the emerging technology and introduction of cloud computing, allowed providing software as commodities. It provided a cost effective approach and faster implementation with elasticity. *Software as a Service* (SaaS) is one of the service models offered which revolutionized how people interact with computers and doing their own businesses, as a result of that it witnessed augmented adoption and continuous growth. In a world of business, IT vendors found opportunities to offer complete IT infrastructure, hardware, software and other services such as backup and disaster recovery plan.

SaaS offered as a business solution and as a commercial package in a pay per use case or any other scenario which is more feasible to the client. It provides a flexible and cost effectiveness for many organizations eliminating the need of having huge investments in IT, reducing resources and add value to business. One of the challenge which could be identified is how willing and ready is any organization to share same hardware with other organizations in case its business considered critical and managing sensitive data. Even IT vendors provide various deployments to ensure a complete isolation for any organization however such deployment may raise the charges and the investments needed. On other hand the main advantage could be clearly identified as it would allow a swift up and running IT environment comparing to having an IT data center or even certain software deployment.

### **Smart Statistics as a Service (SSaaS)**

DSC found an opportunity to implement SaaS approach to deliver its *Smart Statistics* solution as a service to decision makers, government organization on a free of charge basis. Not only focusing on official Statistics but also providing an end to end solution for government entities in Dubai to implement it for their internal usage. Government entities would focus on the business rather than investing and having concerns of building a statistical system to support decision making and provide business insight.

In order to achieve the increase demands and adoption from various government entities, a scalable and multi-tenancy solutions provided in a newly implemented

virtualized infrastructure, utilizing our environment and offering a cost effective approach. The infrastructure deployed is totally managed and administered by DSC ensuring high level of availability to eliminate any disruption and allowing users to focus on their businesses rather than worrying about technology. While an implemented disaster recovery plan provided data safety in case of unexpected and emergency situations as backup is saved in a remote location.

As many may raise concerns regarding data confidentiality, the solution could be provided in isolated resources rather than shared ones upon request to ensure total independency and higher level of security. By implementing a centralized repository and providing a Business Intelligence (BI) and data visualization tools in a SaaS deployment, allowed decision and policy makers to have business insight and allowed sharing data and collaboration among government entities. Various implementations have been deployed already and currently number of implementations under process. Consequently, and as driven by the entities requirements and demands, DSC is committed to provide its services, allowing utilization of its infrastructure and framework.

## **Governance**

By providing Smart Statistics as a Service, it allowed to standardize the statistical work in Emirate of Dubai among government entities, prompting guidance, encouraging adaptation and flexibility. DSC initiative led to enhancing collaborations and sharing experience, resulting on promoting awareness. Thus, the approach allowed DSC to provide its capabilities in technology, people, processes & standardization when it comes to statistics. The objective was to govern the statistical work for Government of Dubai providing a governance structure model for each government entity statistical work taking into consideration customization required due to business specialty and nature. Addressing the three areas (technology, people, processes & standardization) in co-ordinated and harmonized mode, allowed to enhance the success of the implementations and achieved a significant added value. Incorporating policies, standards and guidance, while on the other hand focusing on data quality and statistical Master Data Management within organizations, improved decision making and increase data efficiency.

*Smart Statistics* as a Service allowed DSC to be a hub for data sharing and exchange by invoking partnerships and agreements with government entities, taking into consideration data confidentiality, privacy and authorization level. Consequently, DSC was able to engage the private sector as sources of information where the government entities played the role of a liaison and a regulator, statistical domains such as Education, Health and Sports partially rely on private sector engagement.

## **Implementation**

A number of implementations covering various businesses and government entities, have already been achieved and delivered in an exceptional period. Understanding the business and requirements gathering and analysis utilized the big portion of the

implementation, while deploying the solution could be delivered swiftly. Moreover, DSC provides the training which delivered in a marginal period due to the nature of the solution that targets business people rather than technical ones. The virtualized DSC environment provides total isolation for each implementation; minimizing any level of any level of interaction among the various implementations, reducing resources leaks and eliminating any risks of virus attacks or data breaching. Allocating dedicated hardware resources could be provided upon request and investigating the need and its feasibility.

At the time of preparing this paper, H.H Sheikh Ahmad Bin Saeed Al Maktoum announced that Dubai Free Zone Council will adopt Smart Statistics as a Service rather than investing in its own statistical solution, at the same time it can be delivered in a marginal time comparing to other alternatives, providing a cost effective solution and swift added value. Dubai Free Zone Council which aims to liaise work between Free Zones; will be provided by a centralized repository will cover various free zones industries such as in media, financial, education and aviation among others. Free Zone Council consolidates the information gathered for business insight and decision making, however granting access will be provided for every free zone entity based on its functions and role.