Driving Data-driven e-Government Services with Big Data and AI

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Resources required for big data analytics



How to start?

We have no funding.

We don't have the skill to conduct data analytics.



We don't have enough data. It will take years to collect data.

Will data analytics drastically change the existing business workflow?

The investment seems large to acquire the tools and platform.

There are various funding sources in the Government.

Find partners who have the skill to help (e.g. OGCIO).

Start with business issues that you have data for analytics.

Start with existing data and collect more if needed.

It is an iterative process which brings about continuous improvements.

Use the common platform which is being developed by OGCIO.

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Partners to carry out Data Analytics

OGCIO Data Analytics Team

Led by CSM and with Analyst/Programmer and Statistician grade officers, OGCIO provides Data Analytics advisory service to help B/Ds to establish data analytics use case

Smart Government Innovation Lab

OGCIO invites the industry to submit IT proposals and product suggestions for various public services, and facilitate the trials and technology testing of suitable solutions by B/Ds



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Academic / Research Institutions

Collaborate with Universities and Research Institutions for R&D projects

Vendors, Startups and SME

Engage vendors, startups and SME to leverage their innovative ideas and data science services in conducting data analytics project

Typical Data Analytics Cycle



Data-Analytics-as-a-Service

Compute resources, GPU, development tools

Big Data Analytics Platform

Data Repository: Store cleansed data for model development /retraining and share-use among B/Ds Code Repository: Reference modules and sample codes

Digital Highway: Share real-time data between B/Ds for model development and execution

Social Media Text Analytics System

Business Intelligence Tool



Data Analytics Model Development



Data Visualisation



Produce dashboards for descriptive analytics

- Allow users of all skill levels to examine and understand patterns, trends and relationships in data by self service
- Support publishing dashboard for view by internal B/D users or by public



Figure 1: Design and distribute dynamic, interactive reports and dashboards using the SAS Visual Analytics drag-and-drop designer environment.

Digital Highway



- Real-time data sharing among B/Ds for big data analytics
- Opening up IoT/sensor data (e.g. data collected from smart lampposts) in data.gov.hk



Adapter Software modules by OGCIO for connecting to Digital Highway

Internal Data Repository & Source Code Repository

Internal Data Repository

- Enable sharing of cleansed data generated from big data analytics projects, other shareable data provided by B/Ds and Digital Highway
- Provide a data catalogue for listing data information



Source Code Repository

 Enable sharing of source code of big data analytics projects and reference modules

Save effort by re-use Facilitate collaboration by sharing

Al & Data Ethics

• OGCIO is developing a **Practice Guide** and a **Risk Management Framework** for ethical adoption of AI and big data analytics in IT projects for B/Ds:



Service Catalogue

• OGCIO will announce a Service Catalogue for our Data-Analytics-as-a-Service



Government Use Cases

Common Government Use Cases





AI-assisted approval





Identifying key factors of a complex issue

Geo-spatial Analytics

Examine geo-spatial data to uncover hidden patterns, correlations and other insights to facilitate decision making.

Common techniques: spatiotemporal analysis, summarising data, analysing pattern, finding location.

Example Use Cases

- Count and visually display number of crime incident per district.
- Find location for a new government facility with criteria such as site area, population projections, age group, accessibility, etc.









Traffic Data Analytics System (TDAS)



D More accurate assessment of traffic conditions



Social Media Text Analytics

Gather public opinion for better policy making and management of issues of public concerns

- What are being discussed?
- How does the event evolve?
- Who are KOLs?
- What did KOLs say?
- ✓ 100+ Media sources, including Social Media websites, Forums, News websites, Online Media websites.
- ✓ Text Analytics for B/Ds' internal data



Hot keywords Like KOL Hot topics Sentiment

GovHK Search Logs Analytics



D Enhance user experience



GovHK Chatbot



GovHK Chatbot Logs Analytics



D Enhance user experience





Open Data



City Dashboard









Thank you!