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SOEN 6481: Software Project Management

Assignment-1

Date: 24th January 2024

Exercise 1.1:

It is said that government spending on IT is increasing as government departments take initiatives to improve customer service or have a wider reach of services.

1. Find out what factors are responsible for the increase of IT spending by government agencies?

2. Also list and explain the three biggest IT projects undertaken by the federal government in recent times?

Part 1:

Some of the well-known factors that are responsible for increased IT Spending by government agencies based on Canadian perspective:

- Modernization of Digital Services:

Government agencies within Canada are increasingly allocating resources to digital transformation initiatives aimed at optimizing service delivery, improving operational efficiency, and fostering enhanced citizen engagement. Investments in state-of-the-art IT infrastructure, cloud services, and emerging technologies are integral components of these strategic endeavors.

- Cybersecurity Concerns:

The escalating frequency and sophistication of cyber threats have propelled government agencies to escalate financial commitments towards fortifying their cybersecurity posture. This entails investments in cutting-edge security technologies, comprehensive training programs, and the formulation of robust cybersecurity frameworks.

- Remote Work and Collaboration Tools:

The COVID-19 pandemic has accelerated investments in remote work capabilities for government employees. This includes expenditures on collaboration tools, secure communication platforms, and infrastructure to support a distributed workforce.

- Legacy System Modernization:

Acknowledging the limitations imposed by antiquated legacy systems, government entities are directing capital towards modernization initiatives. The

objective is to enhance system functionality, improve interoperability, and optimize overall operational performance.

- E-Government Services:

A burgeoning demand for online services has prompted governments in Canada to invest substantially in IT infrastructure. This commitment is directed towards the development and maintenance of electronic services, facilitating seamless public access to information, form submissions, and interactions with government agencies.

- Cloud Adoption:

In pursuit of cost efficiency, scalability, and flexibility, government agencies in Canada are progressively embracing cloud computing services. The adoption of cloud services facilitates improved collaboration, data storage, and resource accessibility from diverse locations.

- Compliance and Regulatory Requirements:

Evolving regulations and compliance standards necessitate commensurate adjustments in IT infrastructure. Government agencies allocate resources to ensure seamless alignment with prevailing legal requirements, thus safeguarding against potential liabilities.

- Healthcare IT:

The healthcare sector constitutes a substantial domain of government spending, driven by imperatives such as the modernization of healthcare information systems, the implementation of electronic health records, and the integration of telehealth technologies.

- Smart Cities Initiatives:

Governmental focus on urban development and the establishment of smart cities necessitates strategic investment in technology integration. These initiatives aim to enhance infrastructure, transportation (STM), public safety, and other critical services through judicious deployment of IT solutions.

- Emergency Preparedness and Response:

Prudent allocation of resources towards IT infrastructure is imperative for bolstering emergency management, disaster recovery, and response capabilities. Governments dedicate funds to enhance their readiness in effectively addressing emergencies and natural disasters.

Part 2:

Also list and explain the three biggest IT projects undertaken by the federal government in recent times?

According to the website reference[1]:

1. Passport Program Modernization Initiative:
   Department: Immigration, Refugees and Citizenship Canada
   Original Budget (2016): $28,713,419
   Current Budget (2022): $187,630,000
   Objective: Strengthen the integrity, security and efficiency of the Passport Program through significant business transformation and technology change, and increase access for Canadians.

2. Biometrics Expansion:
   Department: Immigration, Refugees and Citizenship Canada
   Original Budget (2016): $13,229,322
   Current Budget (2022): $164,457,602 (htt2)
   Objective: This project will expand biometric screening and verification to all foreign nationals applying for a temporary resident visa, work permit, study permit, or temporary resident permit and permanent residence.

3. Export Import Controls System (EICS) II – Application Renewal
   Department: Global Affairs Canada
   Original Budget (2016): $33,570,000
   Current Budget(2022): $134,300,001
   Objective: The Export Import Controls System (EICS) II project will replace the legacy EICS with a new commercial off-the-shelf system and upgrade the existing legacy Export Control Online (EXCOL)

[1] Reference: https://large-government-of-canada-it-projects.github.io/

Exercise 2.2:

Although project charters may not always be explicitly documented for all open-source projects. However, after analyzing the documentation of 2 of the open-source projects
Case Study 1:
https://github.com/thanhpd/soen6441

- Instructions
  - Development Environment Prerequisite
  - Development Commands
    - To build and run the project
    - To run unit tests
    - To generate Javadoc documentation
  - Log file
  - Code formatting
    - For VSCode Editor
    - For IntelliJ IDEA
    - CLI usage
  - Main Dependencies

The reason for those charters:

Project Overview: Console Game Development

- Clarity of Purpose:

This school project focuses on developing a console game with specific deadlines for three distinct releases. The project's clear purpose ensures a targeted and organized development process.

- Guidance for Contributors:

With a team of six dedicated contributors, each assigned to specific issues, the project benefits from a well-structured workflow. This division of tasks ensures efficiency and accountability among team members.

- Governance and Decision-Making:

Given the straightforward nature of the project's requirements, decision-making is streamlined within the group. The project's governance is tailored to the simplicity of the school setting.

- Community Building:

Being an open-source project, comprehensive documentation of prerequisites facilitates seamless contributions from external contributors. This community-oriented approach encourages participation and fosters a collaborative development environment.

- Licensing and Intellectual Property:

Clear guidelines on licensing, tools, and environments are meticulously outlined in the project's readme page. This ensures a transparent understanding of intellectual property rights and establishes a solid foundation for the project's legal aspects.

- Scope Definition:

The project proposal provides explicit requirements for each build, ensuring a well-defined scope. This clarity minimizes ambiguity, guiding the development team toward meeting project objectives.

- Stakeholder Communication:

Regular presentations, conducted three times for each build, involve instructors in the project's progress. This structured communication approach keeps stakeholders informed and engaged throughout the development lifecycle.

- Project Lifecycle:

With a well-defined structure, the project follows a three-iteration lifecycle. This phased approach allows for incremental development and periodic assessment, contributing to project success.

- Conflict Resolution:

Contributors adeptly manage conflicts by utilizing issues and bug reports. This transparent resolution process ensures that challenges are promptly addressed, maintaining project momentum.

- Resource Allocation:

The team's allocation of tasks among the six contributors ensures efficient use of resources for each build. This collaborative effort optimizes productivity and leverages the diverse skills of the team members.

Case Study 2:

https://github.com/Genymobile/scrcpy

Here are some project charters for this specific project.

- Clarity of Purpose:

This application mirrors Android devices (video and audio) connected via USB or over TCP/IP, and allows to control the device with the keyboard and the mouse of the computer. It does not require any root access. It works on Linux, Windows and macOS.

- Guidance for Contributors:

https://github.com/Genymobile/scrcpy/blob/master/doc/develop.md

- Scope Definition:

https://blog.rom1v.com/2018/03/introducing-scrcpy/

- Licensing and Intellectual Property:

http://www.apache.org/licenses/LICENSE-2.0

- Stakeholder Communication:

https://blog.rom1v.com/about/#support-my-open-source-work