CRA Software Project #2: CanHealthCo.

Background Information:

CanHealthCo provides members of its business team with the means to use the corporate information server to access various sales reporting applications. Lately some from the team have acquired tablet computers, and are becoming increasingly frustrated with having to use PCs to access the legacy corporate information server. A small group of the affected team members approached the CEO to pitch the idea of combining these systems. They came prepared with a requirements document.

After discussions with the vendor of the corporate information system, the CEO was convinced that upgrading their corporate system would be relatively straightforward. However, the head of the IT group knew from experience that the chances of replacing the existing system were likely nil, resulting in yet another case of adapting technologies to fit the existing system.

Once the project was approved, a project manager was appointed and a stakeholder group created, consisting of members of both the business team and the IT team.

Corporate legal was involved due to the sensitive nature of the sales data. This data identified clients and sales figure and was not something the company wanted available in the public domain. To address this issue, several technological brainstorming sessions were held.

The IT group realized that they would require a subscription to a Software-as-a-Service (SaaS) cloud application called "AlwaysOnNetService" for this development. Being technologically minded and seeking ownership of the project, they believed themselves capable of developing any connecting software required, although they had no experience with app development. The legal team expressed their concern about data security, since the aps would now be accessing sensitive corporate data over the internet. As there was no in-house experience with developing apps, they hired a specialist app development company called CanApps to create a front end that would integrate the tablet devices with some of the sales reporting applications.

The project would therefore be a joint development effort between CanHealthCo. And CanApps.

Part of the original pitch to the CEO was that the cost of this project might be mitigated by getting a SR&ED Investment Tax Credit. Having signed off on a significant amount of unexpected expenditures, the CFO is interested in how much of this project might qualify.

---Section 1---

At the heart of this project is the development of a Data Access Layer that interfaces with Cloud computing services – in this case, the "AlwaysOnNetService" suite. The IT team developed software capable of accessing the business data form the cloud-based services and vice versa. Development of the AlwaysOnNetService access turned out to be more complex than expected. The AlwaysOnNetService uses the federated cloud based data centers, and as a result the Quality of Service (QoS) derived from the cloud architecture was not always constant. A proof-of-concept developed suffered from significant performance bottlenecks.

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Furthermore, information about the internal architecture of the AlwaysOnNetService was unavailable to CanHealthCo's IT team. Discussion on the technology with support staff from AlwaysOnNetService led to the development of an extensive QoS prototype in the Cloud Computing domain. Engineers from both CanHealthCo and AlwaysOnNetService developed QoS protocols for the cloud-system, with the main focus on CanHealthCo's business system needs.

---Section 2---

This project is an exercise in integrating a third party system to extend the capabilities of the existing business intelligence system such that it offers new features. After reading the SR&ED eligibility criteria, the project manager met with the IT team to determine what they had done. In fact two engineers from the team, both familiar with the existing system, worked on the integration which had proved to be particularly arduous and had run over budget.

---Section 3---

Part of the activities involved a database programmer in the IT team who got involved with updating the architecture of the business system. In this system, one of the sales tools relied on a legacy system that stored it data in flat files. This proved a challenge because the data access layer required that all information be stored using a relational database model.

Given the large amount of sales data involved, the migration of this data to relational databases turned out to be a complex and very challenging activity. This work included using conversion programs provided by the vendor to convert flat file data to the new format, develop code for unknown data formats, and develop automated verification algorithms to test the integrity of converted data.

---Section 4---

The team at CanHealthCo successfully designed the app for the sales system internally. However, lacking in the in-house experience they hired a contractor, CanApps to develop and implement the business intelligence procedures to suit the new requirements, as well as create a dedicated user interface for the browsers on various smartphones and tablets. Assume that CanApps is a taxable Canadian supplier.

---Section 5---

CanHealthCo's is concerned about security and privacy because health care companies operate in a highly regulated environment. In this case, security refers to ensuring that only authorized members of the sales team an access the data to which they are entitled, while privacy refers to ensuring that confidential data remains so.

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