Analysis Report

Originating and Developing Concepts

Created by James Eastman

**UPTOWN IT**

For

**TQLD Lawyers**

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**YOUR STUDENT NUMBER: 467513560**

**PROJECT REFERENCE: TQLD Lawyers Migration**

**DATE:**

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# Part 1 Solution to a Problem

### 1.1 Evaluate project scenario

**Client:**

TQLD Lawyers is a law firm based in Brisbane City, Queensland, operating from a three-story office. Historically, the firm has relied on a paper-based system to safeguard sensitive legal documents. They are now looking to switch to a digital system while ensuring the same level of security.

**Target Audience:**

* Internal Users: The firm’s 23 employees include 15 lawyers, 5 administrative clerks, and 3 receptionists. They need secure access to a local network for databases, shared files, printers, and projectors.
* External Users (Clients): Clients will use a new dynamic website to manage their own information, with features to add, delete, and update their data securely.
* Visitors: Clients visiting the office need secure guest Wi-Fi that is separate from the firm's internal network.

**Issues Presented:**

1. Transition from Paper to Digital: TQLD Lawyers needs to replace its paper-based system with a secure digital solution that offers improved efficiency and accessibility without compromising security.
2. Local Server Setup: The firm plans to convert its archive room into a server room for managing client data and supporting office functions. These servers must be secure, efficient, and accessible to employees.
3. Dynamic Website Development: The current static website needs to be upgraded to a dynamic platform allowing clients to interact with their data securely, with access limited to relevant information only.
4. Desktop Application and Admin Portal: Employees require a desktop application for office use and an admin portal for remote access, both of which need to connect securely to the database. The admin portal should include extra security measures like multi-factor authentication.
5. Security Concerns: Protecting sensitive legal data is paramount. The solution must guard against:
   * + Unauthorized access, especially isolating client data
     + SQL injections
     + Cross-site scripting attacks
     + Brute force attacks
     + Other potential cyber threats
6. Guest Wi-Fi Network: A guest Wi-Fi network must be set up for office visitors, ensuring it does not compromise the internal network or access sensitive information.
7. Compliance with Regulations: The new system must adhere to Queensland and Australian laws, including privacy regulations, copyright laws, and ethical standards, due to the sensitive nature of the firm’s work.

### 1.2 Brainstorm 5 innovative concepts

A paper with writing on it

Description automatically generated

* Blockchain storage systems
* Network Segregation
* Cloud Storage
* Role Based access controls
* Self service portal with End to End encryption

### 1.3 Identify and assess constraints or restrictions

* Legal Compliance: Must adhere to Queensland laws, including privacy legislation, data protection, and copyright laws.
* Budget: The firm might have a limited budget for transitioning from paper to digital systems.
* Server Space: Limited space in the archive room for running servers, may need ventilation and power upgrade.
* User Training: Ensuring staff are trained on the new system to reduce errors and security risks.

### 1.4 Document group feedback

1. Hybrid Cloud and On-Premises Infrastructure:

This concept balances the need for local control over sensitive data while leveraging the cloud's scalability and flexibility. It provides a practical solution for both security and accessibility.

1. Role-based Access Control (RBAC):

RBAC is crucial for ensuring data security within the firm. It restricts access based on job roles, ensuring that only authorized personnel can access sensitive information. This aligns with the firm’s security requirements while allowing efficient workflows.

**Feedback**

Hi Jimmy

Is blockchain suitable for a company this size ? Are you planning to put all clients' data in the cloud ? Or just use it to backup ? Have you thought about time/money to create and maintain portal ?

Hopefully some classmates will post some feedback for you too. Either way, please keep going with this assessment.

Leonie

Leonie BOYLE

Teacher

Technology (ICT)

TAFE QUEENSLAND

Email: leonie.boyle@tafeqld.edu.au

### 1.5 Assess the viability of implementing 2 of your concepts

**Concept One:** Hybrid Cloud and On-Premises Infrastructure

Commercial Potential:

* + Financial Worth: The hybrid cloud model allows cost efficiency by utilizing the cloud for non-critical resources while keeping critical data secure on-site. It reduces the need for expensive hardware upgrades. Costs might rise if cloud usage expands, or if there are high initial setup fees for on-premises hardware and cloud integration.

Suitability of the Target Users/Business:

* + Fit for TQLD Lawyers: This solution is suitable for TQLD Lawyers as it balances security with accessibility, allowing sensitive data to remain on-site while still offering the flexibility of the cloud for less sensitive tasks. It fits the firm’s need for strong data protection while providing scalability for future growth.

Feasibility of Implementing the Solution:

* + Realism & Practicality: Hybrid solutions are practical for businesses that prioritize security and need scalability. The main challenge is ensuring proper configuration and integration of both cloud and on-premises resources. Costs for ongoing maintenance and managing the hybrid environment could pose challenges but are manageable with a clear strategy.
  + Benefits: Provides scalability, security, and flexibility. However, potential roadblocks include technical complexities during integration and the need for skilled IT staff to manage both infrastructures.

**Concept Two:** Role-Based Access Control (RBAC)

Commercial Potential:

* Financial Worth: RBAC is cost-effective, focusing on improving internal security without requiring substantial financial investment in hardware or software. Potential expenses might involve initial setup and training. Its value increases with the need to mitigate risks of data breaches, though it might not offer immediate ROI.

Suitability of the Target Users/Business:

* Fit for TQLD Lawyers: This solution perfectly aligns with TQLD Lawyers' needs, as it provides tailored access control, ensuring only authorized employees can view sensitive data. Given the legal industry's strict confidentiality requirements, RBAC is well-suited to their security needs.

Feasibility of Implementing the Solution:

* Realism & Practicality: Implementing RBAC is straightforward and affordable. It requires minimal ongoing costs but must be set up correctly to ensure no gaps in access control. Factors like user error in assigning roles or inadequate role definitions could affect implementation success.
* Benefits: Strongly supports security and data protection goals. The primary roadblock might be ensuring consistent role updates as personnel and roles within the firm change.

### 1.6 Seek client feedback on these 2 concepts

To: Client Representative

From: James Eastman

CC:

BCC:

Date: 8/08/2024

Subject: Recommendations for TQLD Lawyers' Digital Transition

Hi <Client>

I hope this email finds you well.

After conducting research on potential solutions for TQLD Lawyers' transition to a digital system, I have focused on two primary concepts that align with your business needs. Below are the findings for each concept:

**1. Hybrid Cloud and On-Premises Infrastructure**

This solution provides a combination of local server control for sensitive data and cloud storage for non-critical information. It enhances flexibility while maintaining security, which is critical for TQLD Lawyers.

* **Commercial Potential:**  
  This approach is financially viable, offering long-term cost savings due to reduced need for hardware upgrades. Initial setup costs could vary depending on server and cloud provider choices.
* **Suitability for Target Users:**  
  Ideal for a law firm with a strong focus on security. Sensitive legal data can be stored locally, while the cloud offers scalability for less sensitive operations. The hybrid setup balances both security and flexibility needs.
* **Feasibility:**  
  It is realistic and practical for the business, though careful planning is required for integration. Challenges include managing both environments and ensuring proper network security measures.

**2. Role-Based Access Control (RBAC)**

This solution focuses on limiting data access based on roles, ensuring sensitive information is only accessible by authorized personnel. It emphasizes internal security without needing significant financial investment.

* **Commercial Potential:**  
  RBAC is a cost-effective solution, with minimal ongoing costs once implemented. It provides strong protection against unauthorized data access, which could reduce potential legal liabilities.
* **Suitability for Target Users:**  
  Perfectly suited for the legal industry, where confidentiality is paramount. It ensures employees access only the data relevant to their role, aligning with TQLD Lawyers' security priorities.
* **Feasibility:**  
  Implementing RBAC is straightforward and affordable. Ongoing management of roles might require some attention, but it provides the desired security benefits with minimal disruption.

We would appreciate your feedback on these two concepts so we can narrow down which option is best suited for further development. Once we have your thoughts, we can proceed with the next steps in tailoring the solution to your specific needs.

Looking forward to hearing from you.

Kind regards,

James Eastman

Systems Analyst

*SystemsAnalyst@UptownIT.com.au*

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**Summary of the client’s feedback**:

*The client indicated:*

Feedback Concept 1: How much downtime would be required to implement this solution? Also, how do you plan to distinguish between sensitive and non-critical data?

Feedback Concept 2: Another great idea, but perhaps you should progress with your first concept, as it is a larger concept that can be refined and developed more.

### 1.7 Document your final concept

**Hybrid Cloud and On-Premises Network**

After careful consideration of the feedback received and the business requirements of TQLD Lawyers, I have chosen to further develop the Hybrid Cloud and On-Premises Network solution. This concept offers the best balance between security and scalability, allowing the firm to retain full control over sensitive client data by hosting it on local servers, while benefiting from cloud storage for non-critical information. The hybrid approach provides flexibility and ensures business continuity, with minimal downtime during implementation.

This solution aligns well with the firm's current needs and future growth, as it offers an adaptable framework that can be refined over time without compromising on security. Additionally, the ability to classify data ensures that the most sensitive legal documents remain protected, while less critical information can leverage the advantages of cloud infrastructure.

### 1.8 Brainstorm and assess viability of implementation ideas

Idea 1: Implement a Data Classification System

* Viability Assessment: This system would classify data based on sensitivity levels, ensuring that only critical legal documents are stored on-premises, while less sensitive data is pushed to the cloud. This approach is highly viable as it directly addresses the need for balancing security with accessibility. It’s relatively straightforward to implement with the right software tools and policies, and it would help optimize storage costs by keeping on-premises resources focused on the most critical data.

Idea 2: Staggered Data Migration Plan

* Viability Assessment: A staggered migration plan involves moving non-critical data to the cloud in phases, starting with the least sensitive information. This reduces downtime and allows for troubleshooting during the transition. The idea is practical and manageable, ensuring minimal disruption to daily operations. It also spreads out the workload, making it easier to handle technical challenges as they arise, without overwhelming the IT team.

Idea 3: Automated Backup and Recovery System

* Viability Assessment: Integrating an automated backup system for both the on-premises and cloud environments ensures data integrity and quick recovery in case of system failures. This idea is highly viable as it enhances the overall security and reliability of the hybrid system. It’s particularly important for a law firm where data loss could have severe consequences. The costs are justified by the increased security and peace of mind it provides, making it a sound investment.

### 1.9 Document the detail of your selected viable concept

**Initial Issue:** TQLD Lawyers faced the challenge of transitioning from a paper-based system to a digital one while ensuring the high security of their sensitive legal documents. The firm's goal was to replace their traditional paper records with a system that balances security with the benefits of modern technology. They needed a solution that would allow employees to access critical data securely, support scalable cloud storage, and provide a seamless client interaction experience.

**Business Restrictions and Influencing Factors:** The primary restrictions included maintaining strict security standards for sensitive client data, managing costs associated with new infrastructure, and ensuring minimal disruption during the transition. The firm's on-premises servers needed to be secure and reliable, while cloud resources had to be leveraged for less critical data. Financial considerations also played a role; the solution had to be cost-effective, avoiding high upfront costs and managing ongoing expenses for both hardware and cloud services.

**Viability and Considerations:** The hybrid cloud and on-premises network solution was chosen for its ability to meet the firm's requirements effectively. To address the issues, the solution integrates a data classification system that ensures sensitive information remains on-site, while less critical data is stored in the cloud. A staggered data migration plan minimizes downtime and disruption, gradually shifting data to the cloud without overwhelming the system. An automated backup and recovery system is implemented to enhance security and ensure data integrity. These factors were carefully considered to balance the need for robust security, scalability, and cost efficiency, making the solution practical and aligned with TQLD Lawyers’ business goals.

### 1.10 Evaluate your final overall concept.

The proposed hybrid cloud and on-premises network solution is a viable option for TQLD Lawyers. It effectively addresses the client's need to secure sensitive legal data while providing scalable cloud storage for less critical information. The solution balances security with flexibility, allowing for secure on-site data management and cloud-based scalability, aligning well with the firm's operational goals and budgetary constraints.

Implementation is feasible, though it does come with potential roadblocks. The main challenges include configuring the hybrid environment to ensure seamless integration and managing the complexity of both on-premises and cloud systems. To overcome these, a clear implementation plan with staged data migration and robust training for IT staff is essential. Additionally, investing in a reliable data classification system and automated backup solutions will mitigate risks and ensure that the transition is smooth, secure, and minimally disruptive.

### 1.11 Compare and evaluate your concept to currently available commercial solutions

There are several commercial solutions on the market that offer hybrid cloud and on-premises capabilities, such as Microsoft Azure Stack, AWS Outposts, and Google Cloud Anthos. These solutions integrate on-premises hardware with cloud services, providing similar functionalities like data security, scalability, and flexibility.

Our solution is tailored specifically for TQLD Lawyers, addressing their unique needs for high security and cost efficiency. While commercial solutions offer robust features, they may not be as customizable or optimized for the legal sector’s specific requirements. Our approach includes a custom data classification system and staggered migration plan, which are designed to minimize downtime and ensure that sensitive data remains securely on-site. This level of customization and focus on minimizing disruption provides added value beyond what is typically available with off-the-shelf products.

While we are considering the use of some off-the-shelf products, such as backup software and data classification tools, for their reliability and cost-effectiveness, the core of our solution involves bespoke integration. Off-the-shelf products offer advantages like proven reliability, regular updates, and support, making them a practical choice for certain components of the solution. Combining these products with our custom approach ensures a balance of reliability and tailored functionality.

# Part 2 Solution Presentation

### 2.1 Prepare a concept ‘pitch’

2.1 The filename of my final concept ‘pitch’ is: Hybrid Cloud and On-Premises Network Solution for TQLD.pptx.

### 2.2 Anticipate your presentation answers

1. What factors could affect the commercial potential for your solution?

The commercial potential could be affected by the cost of implementation and the availability of skilled IT staff for integration.

2. What factors could affect the suitability of the target audience for your solution?

The suitability for the target audience is influenced by the solution's cost efficiency, its balance of security and scalability, and the complexity of integration.

3. What factors could affect the feasibility of implementing for your solution?

Feasibility could be impacted by a lack of proper planning, potential downtime during the transition, and the availability of IT staff to manage cloud and on-premise integration.

### 2.2a Present your solution

### 2.3 Document presentation feedback

* Who will decide on data classification system(ie. public, internal use, restricted, and confidential) for TLDQ Lawyers

My response: This should be decided by the TLDQ Lawyers. I would assume they would already have a classification system in place for the businesses current paper records. During the planning stage this would need to be discussed. It could be replicated and/or modified to into a digital format to further protect the security of the data.

### 2.4 Reflect on your presentation feedback

Reflecting on the feedback, it became clear that while the technical solution was well-received, more attention needs to be given to the data classification process. This aspect is critical for ensuring that sensitive information is handled correctly in the digital system. Going forward, I will make sure to prioritize discussions with TQLD Lawyers regarding their existing classification system during the planning stage, ensuring it aligns with the digital transition. Adjustments may include tailoring the classification structure to fit digital workflows and integrating additional security layers where necessary. Other than that, no major changes are needed, as the core concept remains solid.

### 2.5 Prepare an updated final concept / design.

After considering both the feedback and TQLD Lawyers' specific needs, I’ve refined the Hybrid Cloud and On-Premises Network solution. This concept strikes the right balance between maintaining strong security measures and providing room for future scalability. Sensitive client data will be securely hosted on local servers, ensuring full control and protection, while non-critical data will be stored in the cloud, allowing for greater flexibility and cost effectiveness.

With this approach, the firm can adapt and grow without compromising on security. The hybrid model also minimizes downtime during the transition, ensuring business continuity. Furthermore, after discussions with TQLD Lawyers, we will implement a data classification system that mirrors their current paper records, with potential enhancements to optimize security in the digital space. This ensures that the most sensitive information remains well-protected, while less critical data benefits from the efficiency and scalability of cloud storage.