Problem-Solution Framework

*A Communication Framework for Technical Consultants*

**Situation/Environment**

This is the set-up for the problem and solution to come. Describe the technical environment, the business needs and use case. The current, desired and gap.

**Problem/Challenge**

This is what about the needs, resources, technology or problem solving is a challenge.

**Solution/Strategy**

What is the solution you came up with? How does it address the problem? How does it move the company toward its goal or fill its need?

**Implementation**

This is the technical detail of hands-on how you engineered, created or developed the solution.

**Result**

Describe how this implementation resulted in a solution to satisfy the organization needs and fix the problem.

**Benefit**

Describe the non-technical benefits to the company, stakeholders and end-users.

**Example:**

The parent company had data centers with Exchange 2010 servers running on Windows Server 2008/R2, Exchange 2016 Servers running on Windows 2012/R2 , Active Directory server, edge servers and various server roles set-up on virtual machines.

The parent company had just acquired another company. They now had more data centers and hardware to maintain, yet they did not keep all of the employees that came with the acquired company. The company had too much money in data center equipment and maintenance and with increased decentralization, more difficult to maintain. The project was to implement two more Exchange 2016 servers in the parent data center, and migrate users to Exchange 2016, and decommission all older servers. We were to implement Office 365 and migrate a large portion of users to cloud with no on-prem. This allowed us to remove a lot of on-prem hardware.

(The Environment and Situation)

The domains from the acquisition needed to be migrated to the parent company and as the company was restructured, many employees would be migrated to the parent domain or one of the subdomains. We also had some hybrid and some on-prem and some cloud. The domain confusion was an obstacle in the architecture of the new environment.

(The Problem)

To solve the problem, I architected an environment with minimal on-prem servers with redundancy in DAGs, and edge servers for security, and moved the majority of users to O365 cloud. To facilitate a smooth migration with no downtime or errors, I configured a cross-forest trust and with cross-tenant validation prior to beginning the migration.

(The Solution)

I established inter-forest trusts with the domains by setting the Active Directory attributes in the Exchange 2016 target forest. I used ADMT to migrate users’ passwords and SIDS from source domain to target domain. I managed user accounts through Active Directory and contained resources independently in the forest to provide service autonomy, service isolation, and data isolation, to prevent forest access to anyone outside the forest. Then I created an Active Directory federation with Azure ADConnect, and set the domain as the primary address on the new users with PowerShell, and used Azure AD Connect consolidate all Active Directory objects in the source and target domains. (The Implementation)

The trust using Azure ADConnect to sync and consolidate objects saved time on project and resulted in a clean outcome without duplicate groups and mailboxes and all users placed in the correct domains. (The Result)

We saved the client money, headache and downtime by replacing expensive maintenance hardware and excessive data centers with cloud services, by making the process smooth and invisible to users and reducing time and thus project costs. With the current architecture the system will be much easier and less expensive to maintain, more scalable and flexible, with more users having the availability of Office 365 features. (The Benefits)

**Example- Project Summary Using Problem-Solution:**

At XYZ company I used my architecture and problem-solving skills to reduce overhead, simplify maintenance, and provide more features to users. The environment consisted of several on-prem servers of various versions distributed across multiple data centers. When they acquired another company, this further complicated the matters and added sprawl and costs. I was able to simplify and reduce operating costs by moving departments to cloud, reducing the on-prem footprint and resolving multiple domains into the parent company domain with a couple of neat subdomains. The users were undisturbed, project time shortened, and they had a better, more feature rich, scalable, and flexible solution. It also supported the company goal in the acquisition of strengthening its financial position by increasing its valuation and capacity while reducing overall costs.