

1. Introduction

[REDACTED] is a focused research and development center. It provides software development, data analysis, open source development, research and development, and ICT system solutions to its clients. The company has developed formal relationship with other national and international software companies/agencies to become a technology and solution partner in Nepal.

ASPX Commerce is an open source e-commerce application which has been widely used by e-commerce service providers. The product has been developed using MS SQL server as back-end.

2. Problem Statement

As the volume of data increases in web applications, the database has to be changed from structured database to semi-structured or no-sql database. While transforming, one should focus on best performance, volume of data, velocity of data as well as large data. For example when we move on big data we assume the product table will have more than 1000000. As we know MongoDB is for large data so the above example number is very small. We also note that the application is Multi-language so when convert database on Mongo DB we also plan to support for multi-language data type on Mongo DB.

- Choice of Mongo Db may need to be reconsidered, taking into account their use of multiple Data Centers.
- Certain aspects may have to be preserved in RDBMS, itself rather than migrated to Mongo DB.

(Detail we can discuss, as we agree on proceeding ahead further).

For orders and sales transaction data, use of the No-SQL is not recommended, as the NoSQL has BASE properties over ACID. While BASE property is the enabler for the NoSQL to scale exponentially and perform at breakneck speed, it does not support atomic transactions, making it infeasible to record purchases. However since the purchase for a ecommerce stands somewhere between 3 – 15% of the total product views, this makes the purchase a sparse event, which can be then easily handled with RDBMS.

However the most extensively used components of ecommerce i.e. browsing of Products can easily scale exponentially and ultimately cap the performance and scalability of the ecommerce system itself, hence it must be transferred to NoSQL, if the volume is to be considered. This has been one of the tested and proven method at Amazon and is also something that we will be aiming for in the project.

3. Scope

i. In Scope:

Convert MS Sql database to MongoDB. Only provider layer in Application layer need to change

for the MongoDB. During work if we find any new features, idea will be looked for future addition.

1. Will multiple data centers be used to store same data e.g. Does US Data center and Asia Data center hold same data, to ensure data failover?
2. Where does the data write occur? Only one central data write server or data can be written in multiple server?

ii. Out Scope:

In first phase, we only look for the MongoDB. We will not add any new features for now, but for reporting area we can add new reports but not in first phase. In first phase we only transfer in into Big Data.

4. Project Plan:

Please suggest a suitable project plan that best fits your time

Project Timeline:

Available hours

[REDACTED]

In emergency case,

[REDACTED]

[REDACTED]

Concrete Timeline can only be proposed after,

- Inspecting the schema and observing the number of table to be migrated.
- Inspecting the data to be migrated, potential inconsistencies in data. Data cleansing activities That might need be required to be performed.
- Any data preprocessing including transformation, if required.
- Periodic data sync mechanism required / not required

5. Resource

Human Resource:

i. Project Manager:

[REDACTED]

ii. Project Lead Consultant: Bikal Basnet

iii. Developers/Testers/Assistants:

[REDACTED]

- *Database Developer to work on the Data Cleansing, Preprocessing, Transformation and Load activities.*
- *Data QA.*

Other Resource: Please specify.

- *Network Administrators*

6. Engagement Model

(I will make the engagement model. I kindly request you to mention your engagement/ consultant cost per hour/week/overall project)

- *Will need to select a Project Management Methodology.*

As chief consultant, your responsibility will be to guide and assign tasks for the whole team with necessary guidance to that the project comes to a successful end. Please mention the suitable model for any required trainings for the developers/ testers/ support persons in Pokhara.