### 11.3 Why Mongo DB?

Based on the data storage model, NoSQL includes key-value stores, document database, wide-column stores, and graph database.

Graph database has many advantages on operating graph data, however, it is not a good choice for communication page. Although the system users allow to post information includes picture, the user could post text message as well. Therefore, this system could not use graph database.

Key-value stores function is really similar to SQL database, but it only contains two columns, which are “key” and “value”. Communication page is designed to includes thousands post information. If adapted key-value database, it would decrease the system functions performance.

Mongo DB as a document-based database is a better solution to this system. Mongo DB stores and organize data as collections of documents, which could provide better data model to fit in data structure than relational database. In another word, Mongo DB can save more time for mapping data between data structure than relational database. Communication page includes users’ huge amount of posts, which could be a simple message, a picture or even an article. Consider the each post as a single collection, and store this collection as document. Therefore, using MongoDB to store posting data is more efficient.

Another reason to choose Mongo DB is Scalable. Communication page as a social media web page contains plenty posting data sets. In this situation, the high query rates and large data set could exceed the storage capacity. However, Mongo DB could provide vertical scaling and sharding to solve this problem.

Vertical scaling approach could add more CUP and storage resources to increase capacity, but it cost more money. Another approach sharding divides the data set and distributes the data to multiple servers or other shards. Shard is an independent database, when user insert data, application only requires accessing the shard responsible for that record. Shard could fix the server capacity problem, and reduce the development budget. Therefore, consider the data type store and scaling, Mongo DB is the best solution for this system.