**Finding Report #3**

*The issues in database management systems*

When 451 Research published their popular Data Platforms Map in 2014, there were 223 products listed. This year, the list ballooned to 386 products.

There is no doubt the industry is changing rapidly.

If you’re responsible for selecting a new database management system (DBMS) product for your business, the sheer number of options available can be daunting. In fact, according to Swarthmore professor Barry Schwartz, this “choice overload” can cause problems.

He notes that “As the number of options increases, the costs, in time and effort, of gathering the information needed to make a good choice also increase. The level of certainty people have about their choice decreases. And the anticipation that they will regret their choice increases (1).”

In this document, I share a few tips to help you make sense of the deluge of options and pick the right solution for your company’s needs.

In the last few years, data volumes have grown and the way we use data has changed. Here are five of the top database management challenges companies face.

***1. Growing complexity in landscape***

We alluded to this earlier. As the database market evolves, many companies are finding it difficult to evaluate and choose a solution. There are relational databases, columnar databases, object-oriented databases, and NoSQL databases. Not to mention the plethora of vendors offering their own spin on each.

***2. Limits on scalability***

The fact is, all software has scalability and resource usage limitations, including database servers. Forward thinking companies concerned about transaction processing capacity know that cataloging components, database architecture, and even operating systems and hardware configuration all affect scalability.

***3. Increasing data volumes***

As the amount of data generated and collected explodes, companies are struggling to keep up. Research shows that we’ve created more data in the past two years than in the entirety of the human race. Yet, a 10% increase in data accessibility could generate more than $65 million additional net income for a typical Fortune 1000 company.

***4. Data security***

Databases are the hidden workhorses of many companies’ IT systems, storing critical public and private data. Lately there has been an understandable and high-profile focus on data security. A data breach typically costs a company $4 million, not to mention loss of reputation and goodwill.

***5. Decentralized data management***

Although there are benefits to decentralized data management, it presents challenges as well. How will the data be distributed? What’s the best decentralization method? What’s the proper degree of decentralization? A major challenge in designing and managing a distributed database results from the inherent lack of centralized knowledge of the entire database.