

**Description:** As business needs change and the focus on security increases, the landscape of data storage and analytics options is growing more complex. Discover the common challenges businesses face when choosing a solution and how to avoid them.

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## **5 Challenges Companies Have With Database Management: And How to Choose the Right Solution**

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<sup>1</sup>."

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<sup>1</sup> (Schwartz)

I'll share a few tips to help you make sense of the deluge of options and pick the right solution for your company's needs. Before we go any further, let's talk about why companies are struggling with data management.

## 5 Challenges Companies Have With Database Management

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

1. **Growing complexity in landscape**--I 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<sup>2</sup>.

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<sup>2</sup> (Marr)

Yet, a 10% increase in data accessibility could generate more than \$65 million additional net income for a typical Fortune 1000 company<sup>3</sup>.

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<sup>4</sup>.
5. **Decentralized data management**--Although there are benefits to decentralized data management, it presents challenges as well. How the data will 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.

## **How To Choose The Right Solution For Your Business**

So, in the face of numerous challenges, how can companies select the best management solution for their business? Here are a few recommendations.

- **Establish decision criteria**--The first step is to create an objective standard by which to evaluate your options. Of course each company will have different criteria. Some important considerations include cost of ownership, ease of use, functionality, ease of database administration, and scalability. Perhaps most

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<sup>3</sup> (McCafferty)

<sup>4</sup> ("IBM 2016 Cost Of Data Breach Study - United States")

important for businesses with long range projects, will the solution be around in 10 years?

- **Match the solution to your business goals**--Your choice of database technology should take into account your business goals. How much data are you collecting? How fast do you collect it? How will you access and analyze it? Each business is different, thus there is no one-size-fit-all answer here.
- **Does it work with your existing technology?**--Of course you want to avoid ending up with sprawling systems and disparate platforms. So an important consideration is whether your solution will “play nice” with existing software and hardware components.
- **Workload on hardware resources**--Whatever DBMS you select will be judged on database performance, or how fast it supplies information to users. It is important to remember that workload can fluctuate dramatically by the day, hour or even minute. Take for example, the database of a retailer during a holiday shopping event. Under those conditions, the processing demands placed on the system may tax the hardware and software tools at the disposal of the system. The goal should be enabling the largest possible workload to be processed without resource upgrades.

The DBMS that you choose will be one of the core software resources that your business depends on. That is why it is so important to choose the right one for your needs.

## **How MiCORE Can Help**

MiCORE works with your business to put your strategic plans into action with the right technology so that you can meet your business goals. We take the time to understand the issues you face so that we can advise you on the best solution. For more information, [click here](#).

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