# **Questions When Choosing Your Data Architecture**

### **Initial Investment?**

If you're looking for a low initial investment, consider an operational data architecture where no initial setup is required, or an operational data store (ODS), where no excessive modelling is required. Cost of initial investment is slightly higher for data lakes, where most initial modelling can be done later, or a data mart, offering easier modelling. However, if high initial investment is is an option for you, consider a data vault or a data warehouse.

## **Ongoing Maintenance Costs?**

Data marts, data warehouses and operational data architectures offer low or no ongoing maintenance costs. However, if you are considering a data vault or data lake, changes in data within data vaults and storage costs of data lakes require higher ongoing maintenance costs.

# Cost Of Asking New Questions?

If you're looking for a low cost when new questions arise, consider a data vault or a data lake architecture, or even an ODS. Data marts and operational data architectures incur slightly higher costs when new questions arise, and asking new questions within a data warehouse architecture incurs the highest cost as it requires remodelling of the global normalized model.

# Frequency Of Change in The Business?

If there are constant changes in the business, data lakes and operational data architectures are best suited to this kind of environment. If the change is slow, then a data warehouse or data mart architecture could work well in this environment. A data vault tends to respond well in a medium change frequency environment.

# Type of Data?

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Is your data highly structured? A data warehouse, data mart or data vault architecture are suitable for this type of data. However, if it's mixed with unstructured data, a data lake or operational data architecture are worth considering.

**Talent Available Or Planned In** 

At the lower end of the scale, non-technical talent

suits a data warehouse or data mart architecture,

whereas at the other end of the scale, data lake or operational data architectures suit the more

developers or data consultants. Where the more traditional IT talent exists, data warehouse, data

data-savvy talent, such as data scientists,

mart and data vault architectures are

worth considering.

**The Organization?** 

# Use Case? Above all, your use case is fundamental to the data architecture decision-making. Use case: BI, KPI Reporting: data warehouse, data mart Use case: Ad hoc analytics on structured data: data lake, data vault Use case: Ad hoc analytics on any data: data lake, operational data Use case: Near real-time fresh data required: operational data, ODS

There are many questions you'll need to ask yourself before embarking on data architecture decisions. There is no such thing as a simple answer. But as the amount of data is expected to increase year-on-year by 40% (IDC), and often unstructured data is delivered in an ever-growing number of formats, decisions around data cultures and data architectures are becoming more and more important.



Want to learn more or get more details? Download our white paper

"Your Guide to Enterprise Data Architecture"

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