

7 Questions When Choosing Your Data Architecture

1 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 an option for you, consider a **data vault** or a **data warehouse**.

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2 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.

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3 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**.

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4 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.

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5 Type of Data?

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.

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6 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

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7 Talent Available Or Planned In The Organization?

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 data-savvy talent, such as data scientists, developers or data consultants. Where the more **traditional IT talent** exists, **data warehouse, data mart** and **data vault** architectures are worth considering.

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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