

There are two areas of consideration for the needs for data management software

1. Database layout: Centralized Data or Distributed Data
2. Client architecture: Thin-client or Rich-client

Database layout:

Centralized Data:

Pros: Having your data centralized gives the obvious benefit of always having access to the most recent copy of the data.

Cons: Computing resources must be shared amongst all logged in users. When querying information there is an increased risk of having "dirty" or "unfinished" data. Because the data originates at the local sites, local personnel may be required to resolve matches or fix problems directly in the central shared data. Legal ownership of and access to the centralized data must also be considered.

Distributed Data:

Pros: Database computing is distributed across all data systems separately and independently. Data can be "cleaned" prior to transmission to the upper level central database. Data is owned and maintained at local sites. This allows for independent data usage activities that may only be related to local sites. Redundancy provides backup.

Cons: Updates to data come incrementally and depending on the system, the lower (source) databases are not updated with subsequent changes from upper levels. There is more effort required to support separate systems.

Client architecture:

Thin-client:

Pros: Minimal installation on user computers. Often access is available from any computer with network access.

Cons: Usability tied more closely to the network (speed, availability, security, etc) and sometimes limited in functionality. Lack of technology or network access restrictions prevent some local sites from connecting. *Options:* Citrix, Windows Terminal Services/Remote Desktop or access over a web page.

Rich-client:

Pros: More responsive and feature-full. Processing is distributed across all systems separately. Some rich client systems feature automatic updates.

Cons: Installation required. (".Net Framework" and other advances greatly simplify installation for newer software) Updates may be periodically required.

Summary:

The web-based data management approach usually meets the requirements of providing a Centralized database with a Thin-client. However, the advantages of providing an improved user experience with Rich Clients or alternate Thin Clients should also be considered. With proper setup a Centralized Database *can* be accessed with Rich Clients. Additionally, improvements in installation packages and software updates are simplifying the task of providing Rich Clients and the associated updates to user computers.

A mixed Central Data-Distributed Data approach may be advisable in scenarios where offsite professionals need read only access to the central data. In this case the local sites can leverage their local databases to get the benefits of rich clients connected locally and the central offices can provide thin client access to specialized users.

Database Layout Examples:

