1. DDBMS and distributed processing are for managing data across the network but with different purposes. DDBMS is a database management system where data are physically distributed over several sites, and it makes distribution transparent to users. Distributed processing is breaking down the large computational tasks into smaller sub-tasks to speed up the process. If we have a system for every branch and each branch will process their own data, DDBMS will be more efficient than accessing to one centralized database through distributed processing.
2. DDBMS is a database management system where data are physically distributed over several sites across the networks, and it makes distribution transparent to users. Parallel DBMS is also a database management system running across multiple processors in parallel to improve performance while there is no parallel execution over multiple processors in DDBMS. Parallel DBMS will be better to process very large amount of data efficiently.
3. Advantages of DDBMS

* Reflects organizational structure – If an organization is naturally distributed over several locations, it is natural for database used in the application to be distributed over those locations. It may keep its database at each branch office containing details related to that branch. The staff at the specific branch can enquire data locally and the company headquarter can enquire data globally, accessing data at all or a few branches.
* Improved shareability and local autonomy – As data are physically distributed, users at one site can access data stored at other sites. A global DBM is responsible for the entire system. With DDBMS, the local DBM can manage the local DBMS.
* Improved availability – The system can reroute the failed note’s requests to another site if a single node fails while a computer failure terminates the operations of the DBMS in a centralized DBMS.
* Improved reliability – Because data may be replicated at more than one site, a failure of a not does not make the data inaccessible.
* Improved performance – Each site handles only a part of the entire database; speed of database access may be better than that achievable from a remote centralized database.
* Economics – It is much more economical to partition the application and performe the processing locally at each site.
* Modular growth – It is much easier to handle expansion with DDBM, adding a new sited to the network without affecting the operations of other sites.
* Integration – Distributed data processing can make organizations to be able to integrate software components from different vendors to meet their specific requirements.
* Remaining competitive – Many enterprises have had to reorganize their businesses and use distributed database technology to remain competitive.

Disadvantages of DDBMS

* Complexity – DDBMS can me more complex by hiding the distributed nature from the users and providing the acceptable level of performance, reliability, and availability and by replicating data.
* Cost - Increased complexity can make more maintenances costs.
* Security – In DDBMS, user can access data both locally and globally across different sites over network whose itself needs to be secured.
* Integrity control more difficult – In DDBMS, the communication and processing costs that are required to enforce integrity constraints may be prohibitive.
* Lack of standards – Although DDBM depends on effective communication, we now see only standard communications. Because of that lack of standards has significantly limited the potentials of DDBMS.
* Lack of experience – General-purpose DDBM has not been widely accepted so that we do not have the same level of experience as centralized DBMS yet.
* Database design more complex - Because DDBMS split into a number of fragments and each fragment is stored on one or more computers across the network, design is more complex.

1. In a homogeneous DDBMS, all sites use the same DBMS product. Homogeneous systems are much easier to design and mange, provide incremental growth, and allow increased performance by exploiting the parallel processing capability of multiple sites.

In a heterogeneous system, sites may run different DBMS products. Heterogeneous stems generally arise when individuals have implemented their own databases and integration is considered at a later stage, so translations are required to allow communication between different DBMSs.

1. We expect DDBMS to have at least the functionality of a DBMS and also to have the following functionalities:

* Extended communication services
* Extended data dictionary
* Distributed query processing
* Extended concurrency control
* Extended recovery services