Data warehousing

If we were to look at the BIFHE scenario before any integrated systems are put in place, we would see that each department is probably organising their data in a traditional file environment. This will either involve hardcopy's in filing cabinets, data stored on stand-alone computers, or both. This can cause many problems such as: data redundancy, programme-data dependency, inflexibility, poor data security and an inability to share data between applications and departments. A properly implemented database system would irradiate many or all of these problems.

The data from all departments within the organisation can be brought together and centralised therefore minimising redundant data and maximising accessibility. Users with different levels of access would be able to share information with colleagues and other departments much more efficiently. Essentially, a database makes the provision of information much easier as it can be accessed from anywhere within the organisation and as long as users have the appropriate access levels it no longer needs to be distributed.

a centralised system, all the data processing is performed by one central host computer or mainframe, which is accessed by many users through terminals or PC's which carry out virtually no processing. DISTRIBUTED SYSTEM In a distributed system, the data processes and interface components are distributed among the computers in a network. For example, the server may hold all the data centrally but each users machine by means of a locally stored interface would carry out all the processing of that data.

The later of these systems is by far the most popular, as it is much more efficient and therefore would be well suited for implementation within BIFHE. This would give every user the power to manipulate and process data and information at their own workstations without having to worry about a busy or congested server holding them up. Expert systems and Artificial Intelligence Expert systems are an extension of decision support systems, which would be used by the strategic level Management team in an organisation.

They basically capture the knowledge of a human expert decision-maker. It then uses this data to make decisions and learn from the outcomes of those decisions, i. e. experience. The system compares expected outcomes with actual outcomes in much the same way as a human would, and then modifies its knowledge base and rules accordingly. Simply uses the information entered to conduct a search of the rule base and arrive at a conclusion. Forward chaining systems are often called " production" systems. Each of the rules is actually a miniature procedure called a production.

It is used primarily for diagnosis, for all other purposes forward chaining is only feasible when the number of possible outcomes is small. Only then would there be little or no advantages to using backward chaining. Behaves more like a problem solver by starting with a hypothesis and searching for more information until it is proved or disproved, by assuming a wanted outcome and then checking to see if the rules are met. This requires fewer operations and therefore makes a more efficient expert system. Below is a diagram of a typical AI system used for speech recognition, which clearly shows how complex these systems are.