DATA REDUNDANCY. In ad- dition, the integrity (i.e., the accuracy and completeness) of the data was suspect be-cause there was no control over their use and maintenance by authorized end users. Thus, a lack of standards caused major problems in application program develop- ment and maintenance, as well as in the security and integrity of the data files needed by the organization. End users had to extract the required information manually from the various reports produced by each separate application and then prepare cus-tomized reports for management. In file processing systems, major components of a system--the organization of files, their physical locations on storage hardware, and the application software used to access those files--depended on one another in significant ways. Having data in independent files made it difficult to pro-vide end users with information for ad hoc requests that required accessing data stored in several different files. For example, application programs typically contained references to the specific format of the data stored in the files they used. In file processing systems, it was easy for data elements such as stock numbers and customer addresses to be defined differently by different end users and applications. DATA DEPENDENCE .