

9.3: Information-Systems Operations and Administration

Another group of information-systems professionals is involved in the day-to-day operations and administration of IT. These people must keep the systems running and up-to-date so that the rest of the organization can make the most effective use of these resources.

9.3.1: Computer Operator

A computer operator is a person who keeps large computers running. This person's job is to oversee the mainframe computers and data centers in organizations. Some of their duties include keeping the operating systems up to date, ensuring available memory and disk storage, and overseeing the computer's physical environment. Since mainframe computers have increasingly been replaced with servers, storage management systems, and other platforms, computer operators' jobs have grown broader and include working with these specialized systems.

9.3.2: Database Administrator

A database administrator (DBA) is the person who manages the databases for an organization. This person operates and maintains databases, including database recovery and backup procedures, used as part of applications or the data warehouse. They are responsible for securing the data and ensuring that only users who are approved to access the data can do so. The DBA also consults with systems analysts and programmers on projects requiring access to or creating databases.

- **Database Architect:** Database architects design and create secure databases that meet the needs of an organization. They work closely with software designers, design analysts, and others to create comprehensive databases that may be used by hundreds, if not thousands, of people. Most organizations do not staff a separate database architect position. Instead, they require DBAs to work on both new and established database projects.
- **Database Analyst:** Some organizations create a separate position, Database Analyst, who looks at databases from a higher level. He analyzes database design and the changing needs of an organization, recommends additions for new projects, and designs the tables and relationships.
- **Oracle DBA:** A DBA that specializes in Oracle database. Oracle DBA's handle capacity planning, evaluate database server hardware, and manage all aspects of an Oracle database, including installation, configuration, design, and data migration.

9.3.3: Help-Desk/Support Analyst

Most midsize to large organizations have their own information-technology help desk and are the most visible IT roles. The help desk is the first line of support for computer users in the company. Computer users who are having problems or need information can contact the help desk for assistance. Often, a help-desk worker is a junior-level employee who does not necessarily know how to answer all of the questions that come his or her way. In these cases, help-desk analysts work with senior-level support analysts or have a computer knowledgebase at their disposal to help them investigate the problem at hand. The help desk is a great place to break into IT because it exposes you to all of the company's different technologies. A successful help-desk analyst has conflict resolutions, active listening skills, problem-solving abilities, and a wide range of technical knowledge across hardware, software, and networks.

9.3.4: Trainer

A computer trainer conducts classes to teach people specific computer skills. For example, if a new ERP system is installed in an organization, one part of the implementation process is to teach all users how to use the new system. A trainer may work for a software company and be contracted to come in to conduct classes when needed; a trainer may work for a company that offers regular training sessions, or a trainer may be employed full time for an organization to handle all of their computer instruction needs. To be successful as a trainer, you need to be able to communicate technical concepts well and have a lot of patience!

9.3.5: Quality Support Engineers

A quality engineer establishes and maintains a company's quality standards and tests systems to ensure efficiency, reliability, and performance. They are also responsible for creating documentation that reports issues and errors relating to the computer and software systems.

9.3.6: Change Management Roles

As we have discussed in previous chapters, people play a critical role in the functioning of an information system. Whenever a new information system is introduced, change management professionals are responsible for leading the organization through the transition process. They create plans for communication, training, and user adoption strategies. It is crucial to consider the needs of employees affected by the new system and ensure that they feel supported and prepared throughout the process. Failure to provide proper training or to gain employees' support for significant changes, including major software adoption, often results in failed implementations that can be costly for companies and even lead to job losses.

9.3.7: Change Management Models

Frameworks like [Kotter's 8-Step Change Model](#) and [Lewin's Three-Stage Model](#) provide guidance for leading organizational change. Common steps include creating urgency, forming a coalition, developing a vision, training employees, empowering action, and institutionalizing change. Understanding and applying established change management models can increase success when implementing major IT initiatives.

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