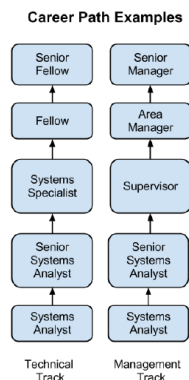


## 9.6: Career Path in Information Systems

The job descriptions described in the previous sections do not represent all possible jobs within an information system organization. Larger organizations will have more specialized roles; smaller organizations may combine some of these roles. Many of these roles may exist outside of a traditional information-systems organization, as we will discuss below.



Working with information systems can be a rewarding career choice. Whether you want to be involved in very technical jobs (programmer, database administrator) or want to be involved in working with people (systems analyst, trainer), there are many different career paths available.

Often, those in technical jobs who want career advancement find themselves in a dilemma: do they want to continue doing technical work, where sometimes their advancement options are limited or do they want to become a manager of other employees and put themselves on a management career track? In many cases, those proficient in technical skills are not gifted with managerial skills. Some organizations, especially those that highly value their technically skilled employees, will create a technical track that exists in parallel to the management track to retain employees who are contributing to the organization. Today, most large organizations have dual career paths - the Managerial and Technical/Professional.

Then there are people from other fields who want to get into IT. For example, a writer wants to become a technical writer, and a salesperson may want to become a quality tester.

People have many different reasons for transitioning into the IT industry, and the timing couldn't be better. The IT industry is facing a massive shortage of workers, both domestic and international, and there are many employment opportunities at every level.

Figure 9.6.1: Jobs in Information Systems - Image is licensed [CCO-PD](#)

### Sidebar: Are Certificates Worth Pursuing?

As technology is becoming more important to businesses, hiring employees with technical skills is becoming critical. But how can an organization ensure that the person they are hiring has the necessary skills? These days, many organizations are including technical certifications as a prerequisite for getting hired.

Certifications are designations given by a certifying body that someone has a specific knowledge level in a specific technology. This certifying body is often the vendor of the product itself, though independent certifying organizations, such as [\[1\] CompTIA](#), also exist. Many of these organizations offer certification tracks, allowing a beginning certificate as a prerequisite to getting more advanced certificates. To get a certificate, you generally attend one or more training classes and then take one or more certification exams. Passing the exams with a certain score will qualify you for a certificate. In most cases, these classes and certificates are not free and, in fact, can run into the thousands of dollars. Some examples of the certifications in the highest demand include [Microsoft](#) (software certifications), [Cisco](#) (networking), and SANS (security), Oracle (database, SQL).

For many working in IT (or thinking about an IT career), determining whether to pursue one or more of these certifications is an important question. For many jobs, such as those involving networking or security, the employer will require a certificate to determine which potential employees have a basic level of skill. For those already in an IT career, a more advanced certificate may lead to a promotion. However, other cases, when experienced with a certain technology, will negate the need for certification. For those wondering about the importance of certification, the best solution is to talk to potential employers and those already working in the field to determine the best choice. Perusing different job websites to see the trend of hot IT jobs and associated requirements is a good place to start.

### 9.6.1: Organizing the Information-Systems Function

In the early years of computing, the information-systems function (generally called data processing) was placed in the organization's finance or accounting department. As computing became more important, a separate information-systems function was formed. However, it was still generally placed under the CFO and considered an administrative function of the company. In the 1980s and 1990s, when companies began networking internally and then linking up to the Internet, the information-systems function was combined with the telecommunications functions and designated the information technology (IT) department. As

information technology's role continued to increase, especially the increased risk over security and privacy, its place in the organization also moved up the ladder. In many organizations today, the head of IT (the CIO) reports directly to the CEO or COO. There are still places where IT reports to a VP of finance.

IT is often organized into these functions:

- IT support (call support)
- Security
- Database
- Network
- Applications to support end-user apps (i.e., Office) or enterprise apps (ERP, MRP).

The size of each function varies depending on the level of outsourcing a company decides to do.

Not all IT-related tasks are done directly by IT staff. Some tasks may be done by other groups in a firm such as Marketing or Manufacturing. For example, marketing or engineering groups may choose their own vendor to support and provide cloud services for the company's products or services. Collaboration with IT is critical to avoid creating confusion for end-user support and training. Some IT tasks can also be outsourced to external partners.

### 9.6.2: Outsourcing

Outsourcing- using third-party service providers- to handle some of your business processes became a popular business strategy back in the '80s and 90's to combat rising labor costs and allow firms to focus on their core functions. For example, an early function that firms outsourced is payroll. With the Internet boom and bust in 2000-2001 and the rise of the global marketplace, outsourcing is now a common business strategy for companies of all sizes.

Popular outsourcing models like Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) allow organizations to pay for only the IT resources and capabilities they need. IaaS provides networked storage, servers, and virtualization, while PaaS delivers development tools, middleware, and databases. Leveraging these cloud-based services can offer greater flexibility and scalability.



Figure 9.6.2 Outsourcing. Image by [Jireh Gibson](#) is licensed [Pixabay](#).

If an organization needs a specific skill for a limited period of time, instead of training an existing employee or hiring someone new, the job can be outsourced. Outsourcing can be used in many different situations within the information-systems function, such as designing and creating a new website or the upgrade of an ERP system. Some organizations see outsourcing as a cost-cutting move, contracting out a whole group or department. In some cases, outsourcing has become a necessity - the only feasible way to grow your business, launch a product, or manage operations is by using an outside vendor for certain tasks.

### 9.6.3: Job Outlook

IT jobs and demand for computer and information systems managers are projected to grow due to continued increase in cloud computing, cybersecurity concern, and firms' expansion, from both computing and non-computing industries, to adopt new technologies and digital platforms. According to US bureau of labor Statistics, employment growth is projected to result from the need to bolster cybersecurity in computer and information systems that businesses use.

According to the [Bureau of Labor Statistics](#), jobs in computer and information system managers are projected to grow 16% from 2021 to 2031, and 12% for operation specialists managers.

#### 9.6.4: Training and Change Management

Implementing new information systems often requires training end users and facilitating organizational change. IT should partner closely with Human Resources and organizational development to provide training programs and guide employees through transitions. Change management is an essential competency for those in IT management roles.

#### 9.6.5: References

*Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Computer and Information Systems Managers.* Retrieved November 13, 2020, from <https://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>

*Careers in IT.* Retrieved November 13, 2020, from <https://www.itcareerfinder.com/it-careers/mobile-application-developer.html>

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