

# EXTENDED LEARNING MODULE K

## CAREERS IN BUSINESS

### Student Learning Outcomes

1. Identify the career field and business specialization in which you are interested.
2. Provide typical job titles and descriptions for your career field.
3. List and describe the IT skills you need to gain while in school.

## Introduction

In the business world, you need to be “a jack of all trades and a master of one.” That means that you need to excel in a particular business functional area (or specialization), such as finance, accounting, marketing, or any of the other many business specializations. It also means that, while your expertise lies within one functional area, you need to be competent in all the other functional areas.

Think about majoring in marketing, for example. You need expertise in consumer behavior, marketing strategies, branding techniques, and many other marketing-oriented concepts. But as a marketing analyst, you need other skills to be successful. You need knowledge of accounting and finance so you can put together a budget and monitor expenses. You need team and employee management skills so you can work effectively in a group and manage other people. You need knowledge of production and operations management so you can understand works-in-progress information and transportation optimization algorithms.

No matter what your career choice, you need knowledge of information technology tools that will allow you to perform your tasks more efficiently and effectively. This textbook isn't about trying to get you to major in information technology or choose MIS as a career. It's about informing you of the role of information technology and MIS in an organization and enabling you to select and use the right IT tools to carry out your tasks.

In this module, we want to explore with you many of the career specializations in business, including:

- Accounting
- Finance
- Hospitality and tourism management
- Information technology
- Management
- Marketing
- Production and operations management
- Real estate and construction management

At your school, there are probably departments devoted to providing degrees in these specializations. While titles and nomenclatures may differ (e.g., production and operations management is often called management science, operations research, statistics and operations technology, or some other variation), those specializations represent the major functional areas in a typical business.

After providing you with a brief introduction to each specialization, we include the following information:

- List of typical job titles and their descriptions
- IT tools you should focus on learning while in school
- Statistics concerning the job market

It is our hope that, after reading this module, you will come to understand that IT and MIS are important no matter what your career choice. You may be taking this class because it's a required part of the business curriculum. It's required because, no matter what career you choose, you need knowledge of IT and MIS. It's similar to taking a human resource management class. While you may not be majoring in human resource

management, you will at some time in your career have to manage people. Knowing how to manage them effectively is a career opportunity for you.

We believe that being able to identify the right technology tools and use them effectively is also a career opportunity for you. We encourage you to take some time to critically evaluate the many specializations in business, select the one you're most interested in, and then identify what information technology tools you need to learn in school to make your business career a success.

## Accounting

Accounting is the language of business. All businesses, for-profit and not-for-profit, need accountants to communicate financial information. Accountants must understand all aspects of business in order to properly communicate the financial information.

There are five broad areas of accounting—public practice, industry, government, non-profit, and education. The first three are the most common. In public accounting, the accountant serves as an outside advisor to business organizations. The primary areas of responsibility are auditing, which involves examining the financial statements of a company to assure compliance with generally accepted accounting practices; and tax advisory services, which involve helping businesses plan the most beneficial structure and practices for applying tax rules and regulations, as well as preparing the actual tax returns.

Industry accounting is working within a company to manage investor relations, banking relations, daily financial affairs, and plan new products or services. Since almost all activities in a company involve either cash inflow or outflow, the accounting function is involved in almost every business decision of an organization.

Government accounting can range from working at the city level to working at the federal level. Typical positions are auditors, revenue managers, and budget analysts. There are also many government agent positions with organizations such as the FBI, ATF, and IRS. These positions involve enforcement of federal laws and regulations. Any accounting position requires knowledge of broad business concepts, government regulations, and the financial implications of both.

### TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in accounting and their descriptions are listed below.

**Chief Financial Officer**—Corporate officer primarily responsible for managing the financial risks of the business or agency. This officer is also responsible for financial planning and record keeping, as well as financial reporting to higher management. Additional duties involve investor relations, banking relations, and long-term financial planning.

**Management Accountant**—Also called cost, managerial, industrial, corporate, or private accountant—records and analyzes the financial information of the companies for which they work. Other responsibilities are budgeting, performance evaluation, cost management, and asset management. Management accountants usually are part of executive teams involved in strategic planning or new product development. They analyze and interpret financial information needed by corporate executives in order to make sound business decisions. They also prepare financial reports for other groups, including stockholders, creditors, regulatory agencies, and tax authorities. Within accounting departments, management accountants may work in various areas, including financial analysis, planning and budgeting, and cost accounting.

**Environmental Accountant**—Helps businesses understand their environmental costs and factor these costs into their financial and other decision-making processes. Helps businesses find ways to save money through environmental protection measures. Using special environmental cost assessment systems, environmental accountants help companies improve their decisions regarding product mixing, manufacturing, waste management options, and other areas.

**Government Accountants and Auditors**—Work in the public sector, maintaining and examining the records of government agencies and auditing private businesses and individuals whose activities are subject to government regulations or taxation. Accountants employed by federal, state, and local governments guarantee that revenues are received and expenditures are made in accordance with laws and regulations. Those employed by the federal government may work as Internal Revenue Service agents or in financial management, financial institution examination, or budget analysis and administration.

**Internal Auditor**—Verifies the accuracy of the organization’s internal records and checks for mismanagement, waste, or fraud. Internal auditors examine and evaluate their firms’ financial and information systems, management procedures, and internal controls to ensure that records are accurate and controls are adequate to protect against fraud and waste. They also review company operations, evaluating their efficiency, effectiveness, and compliance with corporate policies and procedures, laws, and government regulations. Internal auditors also may recommend controls for their organization’s computer system, to ensure the reliability of the system and the integrity of the data.

**Public Accountant**—Performs a broad range of accounting, auditing, tax, and consulting activities for clients, which may be corporations, governments, nonprofit organizations, or individuals. Some public accountants concentrate on tax matters, such as advising companies about the tax advantages and disadvantages of certain business decisions and preparing individual income tax returns. Others offer advice in areas such as compensation or employee health care benefits, the design of accounting and data-processing systems, and the selection of controls to safeguard assets. Still others audit clients’ financial statements and inform investors and authorities that the statements have been correctly prepared and reported. Public accountants, many of whom are Certified Public Accountants (CPAs), generally have their own businesses or work for public accounting firms.

**Tax Accountant**—Responsible for tax planning and tax return preparation. Requires an understanding of tax laws and other regulations for individuals, estates, trusts, and businesses (both large and small). Is frequently consulted for the legal/tax structuring of new business ventures to ensure the most beneficial application of tax regulations.

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in accounting, we recommend that you gain knowledge in the IT tools and concepts listed below and on the next page.

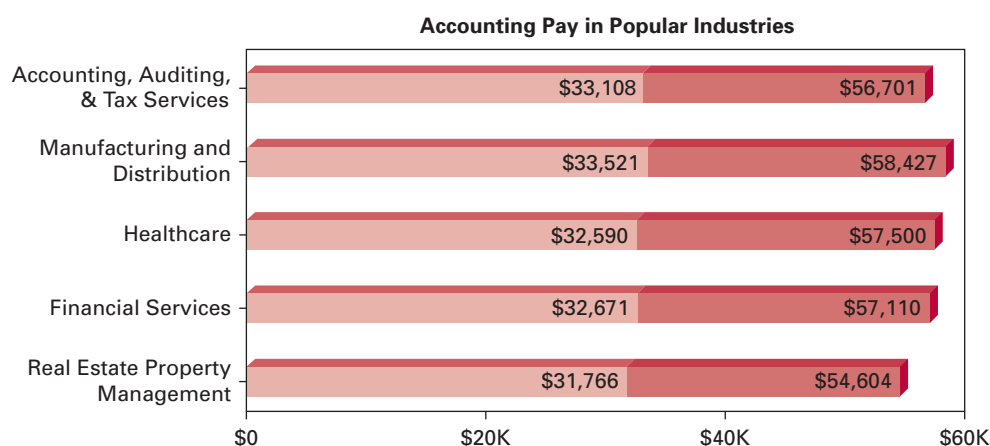
**Accounting Information Systems**—Almost all accounting systems are computerized. The accountant must know how to operate the software and be able to quickly learn new software as the technology changes.

**Database Management**—Many accounting systems require ad hoc reports and structural changes to keep up with changes to the company. The accountant is responsible for keeping the accounting system current. This requires knowledge of database management systems as accounting information is stored in a database.

POSITION	BIG 4 FIRM	OVERALL	TYPICAL EXPERIENCE
Entry Level	\$55,000	\$50,000–\$70,000	First Year
Junior Staff Accountant	\$46,000–\$63,000	\$40,000–\$80,000	1–2 Years
Senior Staff Accountant	\$65,000–\$95,000	\$70,000	3–5 Years
Manager	\$65,000–\$140,000	\$85,000	5–7 Years
Senior Manager	\$72,000–\$160,000	\$115,000	7+ Years
Partner	\$200,000–\$3,000,000	\$150,000	10+ Years

Figure K.1

Employment and Other Information in Accounting<sup>1,2</sup>



**Database Design**—To properly audit an accounting system, the accountant must understand the design of the database and be able to follow transactions through the system.

**Web Research**—Accountants must frequently consult rules and regulations which are available on the Internet. The ability to rapidly search and apply information is a necessity for any accounting position.

**Spreadsheet Modeling**—Financial projections and analyses require extensive use of electronic spreadsheets. Accountants must be expert at these skills to be productive.

**Network Security**—The accountant is responsible for the security of the assets of a company. Knowledge of the computer systems and networks is required to assure the security of the company’s information.

## Finance

Finance plays an integral part in the decision-making process at most companies. There are several distinct areas of study in finance that lead to very different professional job tracks. These tracks, broadly described, are corporate finance, banking, and investments. However, a common thread to each of these tracks is the basic tool kit that you use to aid in decision making. In addition, finance professionals need to have strong interpersonal skills to aid others in making the correct decisions for their companies or their personal finances.

The study of finance draws heavily from three different academic disciplines: accounting, economics (especially microeconomics), and statistics. These disciplines provide

the informational and analytical frameworks with which a decision maker works on a day-to-day basis. Thus, a finance professional must have a background in each of these areas of study. The finance professional can work at a company, aiding in the allocation of resources; or in the banking industry, providing funds for businesses and individuals; or in the investments industry, aiding individuals or institutions with the investment of their resources. In all of these roles, the decision maker must rely on information technology to support the analysis and decisions being made, and in many situations the IT function in a company will be integral to the implementation of the decisions made. Of growing importance is the maintenance of large databases containing information regarding clients, customers, projects, and other areas that are a focus of research by the finance professional. These databases can be either provided by third-party vendors, or created by the finance professional.

In addition, new regulatory schemes such as Sarbanes-Oxley and Dodd-Frank have increased the compliance requirements of companies. The finance function, along with the accounting function, can be responsible for meeting the reporting requirements for these laws. This reporting function requires a significant database management structure and transparency about the operations of the company.

## TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in finance and their descriptions are listed below.

**Corporate Treasurer**—Responsible for controlling the cash needs of the corporation. The cash-budgeting process will identify whether the corporation has a cash surplus or deficit. Any surplus will be invested in short-term, safe investment securities. Any deficit will need to be provided for with bank loans or issues of commercial paper.

**Corporate Financial Analyst**—Aids in the investment of corporate resources. Prepares project reports for the capital budgeting process and helps the various operating units control spending and manage their investment in both short-term and long-term assets. Includes management of inventory investment, accounts receivable investment, and cash management.

**Bank Loan Officer**—Works with individuals, small businesses, and large corporations to provide funds for their spending needs. This can range from the purchase of a car to the financing of a fleet of airplanes. Strong analytical skills as well as interpersonal skills are a requirement in this field.

**Trust Officer**—Works at a commercial bank primarily with two very different groups. First are individuals who establish trusts for estate planning and other reasons. Second are business and municipal issuers of bonds. In this second role, the trust officer serves to ensure that the interests of the investors are met by the issuer.

**Security Analyst**—Works in the markets to provide investment information and sometimes advice to individual and institutional investors. Can work either for a brokerage firm or for an institutional investment company.

**Portfolio Manager**—Typically works for institutions such as mutual funds or insurance companies. Directs the investment decisions for these institutions, choosing which stocks, bonds, and other investments are appropriate. Directs the efforts of several security analysts in this process.

**Stock Broker**—Works primarily with individuals to aid in investment in stocks and bonds. Purchases and sells stocks at the direction of the client. In some circumstances is also responsible for providing information and even an investment strategy for the client.

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in finance, we recommend that you gain knowledge in the IT tools and concepts listed below.

**Spreadsheet Modeling**—An advanced knowledge of spreadsheet modeling is essential to most careers in finance. Forecasting future cash flows and evaluating changes in assumptions will aid the decision maker.

**Statistical Packages**—Statistical analysis helps the decision maker identify and measure the risk inherent in a project. The advanced statistical packages available support this analysis.

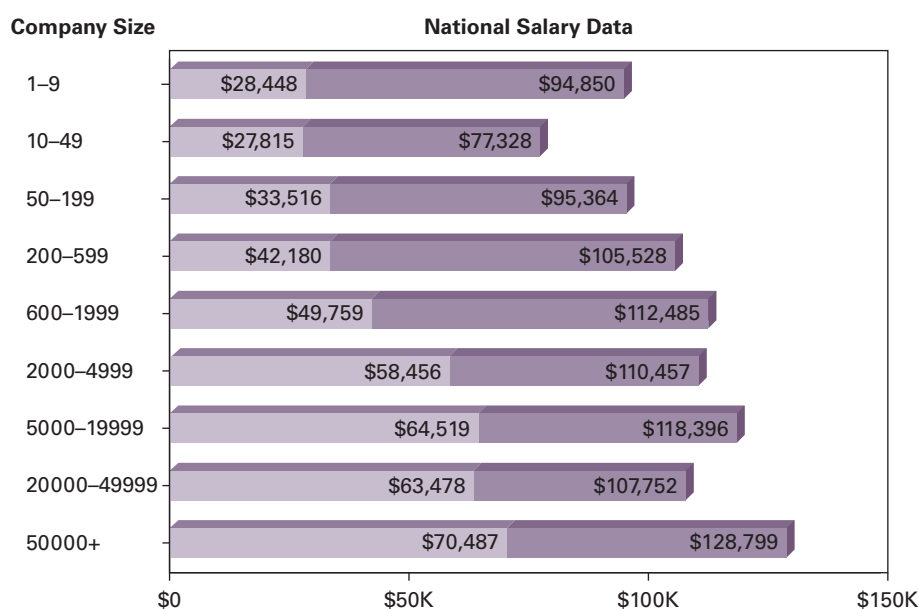
**Database Management**—The ability to create, maintain, and manipulate databases is essential to the decision-making tools in finance. Information such as returns, credit risk measures, and so on are used by investors. Corporate financial managers will utilize significant databases in support of the regulatory compliance required under the Sarbanes-Oxley and Doll-Frank laws.

**Internet and Web Portals**—Corporations use Web sites to provide investors with information regarding the company. Automated bill payment is a means of controlling accounts receivable and accounts payable, both for individuals and businesses.

	Entry Level	Mid Level	Senior Level
Financial Planning	\$34,000–\$40,000	\$50,025–\$71,000	\$67,000–\$105,000
Corporate Finance	\$59,761–\$74,000	\$86,689–\$109,000	\$128,000–\$608,000
Investment Banking	\$50,000–\$110,000	\$185,000–\$375,000	\$300,000–\$1,000,000+

Figure K.2

Employment and Other Information in Finance <sup>3,4</sup>



**Search Engines**—Information is the lifeblood of decision making. Being able to accurately and efficiently gather information is a critical skill.

**Technology Strategy and Innovation**—Banks are innovating new ways to efficiently process customer deposits/withdrawals. Businesses are creating new payment systems via intranets. An understanding of how this innovation affects the company is critical to the finance professional.

## Hospitality and Tourism Management

If you dream about exotic vacations, traveling to alluring destinations, and having fun, a career in hospitality and tourism management (HTM) might be for you. HTM is one of the world's largest, most diverse, and exciting industries. It offers careers grounded in every business discipline, from accounting and finance to management, marketing, and human resources to information technology (IT), statistics, and operations management. Careers can range from hotel general managers, controllers, and revenue managers to restaurant operators, marketers, and event planners to technology developers and electronic commerce specialists. Broadly defined, HTM includes hotels and resorts, cruise ships, casinos, restaurants, catering, tourism visitor bureaus, and more.

According to the World Travel and Tourism Council ([www.wttc.org](http://www.wttc.org)), the travel and tourism industry, of which HTM is one particular and very large segment, is both a leading global economic engine and employer. In 2010, this industry collectively employed over 235.8 million people or 8.1 percent of the global employment. In terms of Gross Domestic Product (GDP), the travel and tourism industry contributed 9.2 percent or \$5.75 trillion of the global GDP in 2010 despite difficult economic times and a number of other factors that adversely impacted business and people's abilities and/or desires to travel. Going forward, the industry is expected to grow at a rate of 4.4 percent per year, and by the year 2020, World Travel and Tourism Council forecasts value travel and tourism to be an \$11.2 trillion industry that employs one out of every 11 people.<sup>5</sup> Thus, the prospects and potential for employment in this sector are promising and worth considering.

Hospitality and tourism businesses make money by serving guests and creating for their guests unique, personal, and memorable experiences. These businesses are especially challenging to operate because of the intangible nature of what consumers purchase and the perishability of the services or products sold (for example, revenue from rooms not sold today or cruise ships that sail away not filled can never be recouped). Adding to the challenge are the heterogeneity of the customers (each customer has different needs and expectations), the simultaneous production and consumption of the services, the dependence on labor, and the ease with which products and services can be copied. Because of the complexities of the business, IT is often used as a tool to help managers run their businesses more effectively and efficiently with an eye toward reducing operating overhead, improving internal controls, creating new revenue-generating opportunities, and creating service experiences that are tailored to individual guest needs.

The economic downturn has been tough for this industry, but it has also put more emphasis on technology as a tool to help run businesses better and, in general, do more with less. The resulting effects have created more demand for people with strong analytical and technology skills to help in areas such as business analytics, revenue management, Web site development, search engine optimization, and mobile applications.

Hospitality businesses are particularly complex and difficult to manage due to a large perishable inventory, localized and fluctuating demand curves, high turnover, and the need to manage labor and operating costs very closely.



## TYPICAL JOB TILES AND DESCRIPTIONS

A sampling of typical job titles found in hospitality and tourism management and their descriptions are presented in Figure K.3. Salary ranges for the 25th to 75th percentiles are also included. These salary ranges are based upon national averages, but they can vary greatly depending upon a number of variables such as property type, size, segment served, and geographic location.

As you will quickly see from Figure K.3, IT is an important and inescapable aspect of everyone’s job responsibilities. Therefore, to be effective in any hospitality business role, you must have a solid grounding in concepts related to IT because of its pervasiveness throughout and impact on every aspect of the business. It is not enough to understand only one business discipline (e.g., marketing, finance, accounting, human resources, etc.), but rather you must understand at least that one business discipline and especially the roles that technology plays to enable (or sometimes constrain) that discipline.

IT has become an indispensable tool for any business, but especially the tourism and hospitality business. Going forward, you should be looking at how IT converges with a business discipline and how IT can be used to help serve business and its strategic goals and priorities, and therefore the career opportunities that this convergence may present. Today, practically every business decision affects or is affected by IT, and every IT decision impacts the business. This is especially so in hospitality and tourism. It is never wise to entrust all IT-related activities and decision-making responsibilities to only the IT experts. Everyone must be sufficiently knowledgeable about IT to help contribute to the discussion of how IT should be used in the organization and how resources should be allocated in this regard.

**Figure K.3**  
IT Is an Integral  
Component of Everyone’s  
Job Responsibilities<sup>6,7</sup>

Position	Brief Description of Duties	IT Knowledge Requirements	National Average Salary Range
General Manager (GM)	Responsible for overseeing the entire operation.	<ul style="list-style-type: none"> <li>Operational systems, business intelligence, and reports to manage, control, and direct the business</li> <li>Technology to track and communicate with customers, suppliers, employees, regional and corporate management, and owners</li> <li>Balanced scorecard</li> <li>Big picture knowledge related to all aspects of the business and systems used throughout the business in order to make decisions and determine how best to allocate resources</li> <li>Microsoft Office</li> </ul>	\$67,000–148,000

Position	Brief Description of Duties	IT Knowledge Requirements	National Average Salary Range
Controller	Responsible for the accounting and financial aspects of the operation. Establishes and manages budgets, maintains the books, prepares financial reports, acquires funding for capital projects, and controls against theft and waste.	<ul style="list-style-type: none"> <li>• Spreadsheet</li> <li>• Data analytical tools</li> <li>• Business intelligence tools</li> <li>• Balanced scorecard</li> <li>• Project management software</li> <li>• Back-office accounting system</li> <li>• Security surveillance and audit trails</li> <li>• Time and attendance</li> <li>• Payroll</li> <li>• Intranet</li> <li>• Microsoft Office</li> </ul>	\$57,600–\$101,000
Director of Rooms Operations	Responsible for all guest service functions in a hotel; including front desk, reservations, bell staff, housekeeping, concierge, and telephone operators.	<ul style="list-style-type: none"> <li>• Property management system</li> <li>• Reservation system</li> <li>• Revenue management system</li> <li>• Distribution and channel management</li> <li>• Customer relationship management and loyalty program</li> <li>• Telephone and call accounting systems</li> <li>• Guest lock system</li> <li>• Guest response system</li> <li>• Concierge system</li> <li>• In-room guest amenities (e.g., movies, high-speed Internet access, mini bars, guest safes, etc.)</li> <li>• Microsoft Office</li> </ul>	\$62,000–\$86,400
Revenue Manager	Responsible for setting rates, restrictions, and selling strategies for hotel rooms and managing room inventory allocated to the various distribution channels used by the hotel.	<ul style="list-style-type: none"> <li>• Revenue management system</li> <li>• Reservation system</li> <li>• Distribution and channel management</li> <li>• Property management system</li> <li>• Sales and catering system</li> <li>• Business intelligence</li> <li>• Microsoft Office</li> </ul>	\$54,200–\$81,000
Director of Sales and Marketing	Oversees the sales and marketing activities of the operation and its advertising and	<ul style="list-style-type: none"> <li>• Sales and catering system</li> <li>• Lead generation and tracking databases</li> </ul>	\$60,700–\$108,000

Position	Brief Description of Duties	IT Knowledge Requirements	National Average Salary Range
	promotion materials; typically responsible for group business (i.e., corporate accounts, meetings, and conventions).	<ul style="list-style-type: none"> <li>• Sales force automation</li> <li>• Customer relationship management and loyalty program</li> <li>• Web site and e-commerce</li> <li>• Reservation system</li> <li>• Content management system</li> <li>• Social media</li> <li>• Distribution and channel management</li> <li>• Revenue management system</li> <li>• Meeting room layout and design software</li> <li>• Microsoft Office</li> </ul>	
Director of Human Resources	Responsible for all aspects of staffing and team building. Duties include hiring and termination decisions, benefits administration, payroll, policy compliance, training, promotions, special programs, and succession planning.	<ul style="list-style-type: none"> <li>• Human resources information system</li> <li>• Labor forecasting and scheduling</li> <li>• Time and attendance</li> <li>• Payroll</li> <li>• Benefits</li> <li>• Online training</li> <li>• Intranet</li> <li>• Microsoft Office</li> </ul>	\$53,000–\$87,000
Food and Beverage Director	Oversees all food and beverage operations. Manages day-to-day operations, purchasing, and inventory management.	<ul style="list-style-type: none"> <li>• Point-of-sale technology</li> <li>• Inventory management</li> <li>• Recipe management</li> <li>• Purchasing and receiving system</li> <li>• Table management</li> <li>• Restaurant reservations</li> <li>• Labor forecasting and scheduling</li> <li>• Microsoft Office</li> </ul>	\$61,200–\$96,000
Director of Security	Oversees the security operations for the organization to ensure the safety of guests and workers alike.	<ul style="list-style-type: none"> <li>• Access control systems and guest locking system</li> <li>• Surveillance systems</li> <li>• Fire alarm system</li> <li>• Biometrics</li> <li>• Microsoft Office</li> </ul>	\$44,000–\$70,000

Position	Brief Description of Duties	IT Knowledge Requirements	National Average Salary Range
Director of Engineering	Oversees the facility, maintenance, and equipment.	<ul style="list-style-type: none"> <li>• Heating, ventilation, and air conditioning (HVAC) system</li> <li>• Energy management system</li> <li>• Preventative maintenance system</li> <li>• Work order management system</li> <li>• Microsoft Office</li> </ul>	\$44,000-\$75,000
Director of Housekeeping	Oversees the cleanliness of the facility, including all public space, administrative offices, and guestrooms.	<ul style="list-style-type: none"> <li>• Property management system</li> <li>• Labor forecasting and scheduling</li> <li>• Microsoft Office</li> </ul>	\$37,000-\$58,000
IT Manager	Oversees, maintains, and secures the various computer systems used throughout the organization; provides support to end-users; and assists with the selection, procurement, and implementation of computer applications and hardware.	<ul style="list-style-type: none"> <li>• Operating systems</li> <li>• Hardware platforms</li> <li>• Programming languages</li> <li>• Network and communications architecture (both wired and wireless)</li> <li>• Project management software</li> <li>• Electronic mail (e-mail) server</li> <li>• Systems security</li> <li>• Antivirus and malware detection tools</li> <li>• Backup and recovery</li> <li>• Database administration</li> <li>• Report writer tools</li> <li>• Technology trends</li> <li>• All systems used throughout the business</li> <li>• Microsoft Office</li> </ul>	\$57,000-\$82,200

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in hospitality and tourism management, we recommend that you gain knowledge in the IT tools and concepts listed below.

**Personal Computer (PC) Applications**—Proficiencies in Microsoft Office applications, electronic mail, and the Internet are essential to every professional position in the hospitality and tourism industry.

**Hospitality-Specific Applications**—There are numerous systems required to run a hospitality and tourism operation. Some of the core systems include the hotel property management system (to manage hotel room inventory and check in/out guests), the central reservations system (for hotel bookings), the point-of-sale system (for food, beverage, and gift shop sales), the revenue (yield) management system (for managing

hotel rates, restrictions, and selling strategies to maximize hotel revenues), the sales and catering system (for selling and planning banquets, meetings, and events), the accounting system (for maintaining the books), and the guest history/loyalty system (for guest preferences, past purchases, frequent travel program management, and CRM).

**Database Management**—The underlying technology behind most hospitality applications is a database management system. This allows information to be collected, stored, managed, and reported.

**Project Management**—Hospitality businesses are complex entities with many variables that must be carefully managed, especially when technology applications are involved. Important responsibilities of any manager (not just an IT manager) are to be able to simultaneously manage many activities (tasks or projects) and multiple personnel, budget for and allocate resources, and deliver results by holding people accountable and managing scope. To do this, strong project management skills are an absolute must.

**Business Analysis**—Because the impacts of technology are far-reaching within the organization and impact job skills/duties, business processes, and information flows, it is important to have a strong analytical mind to understand how and where to use technology, the potential implications (both good and bad), and the resource needs. A large part of any business person's role is to be able to see problems and opportunities and to match technology where appropriate to solve problems and capitalize on opportunities.

**Decision Support Systems/Executive Information Systems**—Hospitality and tourism operations are fast paced and information intensive. Managers must be able to use software applications to analyze and interpret information, model the business under different scenarios, and make informed and timely decisions.

**Computer/Network Security**—Given our dependence upon technology, both as individuals and as business organizations, and the many potential threats that come with using technology and conducting business digitally (e.g., exposure to viruses and worms, hacking, computer outages, etc.), managers must be well versed (at least from a macro level) about these vulnerabilities, educate their employees, and be prepared to take preemptive action, that is, develop and implement strategies, practices, and policies to protect the organization so that systems, data, identities, and assets are not compromised.

**Electronic Commerce**—Electronic commerce goes beyond hotel and restaurant bookings and merchandise or gift certificate purchases, etc. Hospitality and tourism professionals must know how to use the Internet to effectively and cost-efficiently reach consumers, serve them, and gain their loyalty. It is important to understand Web site design principles, interactive or electronic marketing, Web positioning strategies, and search engine optimization. Increasingly important is tapping into Travel 2.0, a term coined to reflect the next generation of Internet developments occurring in the travel space. Adapted from the concept of Web 2.0, Travel 2.0 reflects the growing interactive, multimedia experience of the Web and increased consumer empowerment as a result of the democratization of information, consumer-generated content, social networking, comparison-shopping tools, mashups (the combining of content from multiple Web sites into a single display), and more.

**Mobile Commerce**—With the proliferation of smartphones, people are becoming accustomed to having access to the Internet and a number of useful tools on the fly, wherever they are. There is now increased demand for mobile applications and optimized Web pages that will help travelers get the most out of their travel experiences,

and hospitality companies are eager to exploit these mobile devices as service delivery vehicles and extensions to their own service teams.

**Distribution Channel Management**—One of the most complex aspects of the hospitality and tourism business today is distribution channel management. Having the ability to build and manage channel relationships, synchronize channel information, track channel productivity, integrate the various technologies, and maintain the technology infrastructure required to support the many available distribution channels is a competitive necessity.

**Revenue Management**—One of the greatest career growth areas is revenue management, which involves analyzing and forecasting supply and demand patterns and trends and setting appropriate room rates, sell strategies, and room inventory allotments to maximize hotel revenues. This area brings together statistics, marketing, and finance.

**Customer Relationship Management (CRM)**—At the heart of any hospitality and tourism firm is the guest, the primary reason for being in business. Taking a guest-centric view of the business to provide unique and personalized experiences is fundamental to building guest loyalty and maintaining a competitive edge.

**IT Strategy**—It is important for business executives to understand how to align IT with the business strategy and allocate resources appropriately to achieve business goals and create competitive advantage. One must be able to assess risk factors, evaluate costs versus benefits, and build convincing business cases to win the necessary approval, support, and resources to launch IT project initiatives.

## Information Technology

Information technology (IT) tools and management information systems (MIS) are now so pervasive in business environments and every aspect of your life that it's hard to imagine how the world would operate without them.

As this book is about IT and MIS, we have often discussed the varied careers in this specialization. Careers in this field range from the very managerial—such as the chief information officer (CIO) who oversees the use of information as an important organizational resource—to the very technical such as network security specialists who develop security and encryption algorithms and fight the never-ending battle protecting network resources from viruses and worms. Regardless, all IT people need to possess a solid understanding of the business environment and need to possess people-oriented and communications skills. IT specialists work daily with business colleagues in other functional areas to develop IT systems that meet business needs. IT people must, therefore, be able to communicate clearly and articulately and understand how the IT system serves the greater good of the organization.

### TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in information technology and their descriptions are listed below.

**Programmer**—Responsible for taking technical design documents concerning a new IT system and writing the software. Requires tremendous expertise in any of the many popular software programming languages such as Java, ASP, and C++ . May also require expertise in development tools such as Rational Rose.

**Business Analyst**—Responsible for working with end users to determine the logical requirements for a new IT system and then building the technical design documents

that a programmer will use to write the software. Requires tremendous people skills for soliciting and understanding end user requirements. May also require expertise in development tools which can create a repository of design documents for an IT system.

**Database Designer/Developer**—Responsible for working with end users to determine information requirements for a new IT system and then designing and implementing a database solution. Requires expertise in data modeling (such as E-R diagramming) and the use of popular DBMS tools such as Oracle and DB/2.

**Web Services Expert**—Facilitates the development of network-based IT systems that support e-commerce activities for an organization. Requires expertise in a number of IT tools and concepts including databases, security, and Web Services programming languages and tools such as ASP, XML, ASP.Net, XML.Net, C#, and Visual Studio.Net.

**Network Engineer**—Responsible for a wide range of activities associated with the design, development, implementation, and maintenance of IT networks. May include expertise in security and encryption methodologies. Usually requires expertise in the development of methodologies to stop, eliminate, and/or quarantine viruses and worms.

**Data Warehouse Analyst/Developer**—Responsible for working with end users to determine information requirements for new IT systems and then designing and implementing a data warehouse solution. Requires expertise in both database modeling and data warehouse information modeling. Requires expertise in the use of popular data warehousing platforms such as Cognos and Informatica.

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in information technology, we recommend that you gain knowledge in the IT tools and concepts listed below.

**Programming Languages**—Programming languages are special-purpose languages that programmers use to write the actual software code. While you may not be a programmer, you must understand both basic and advanced programming constructs to understand what a proposed system can and cannot do.

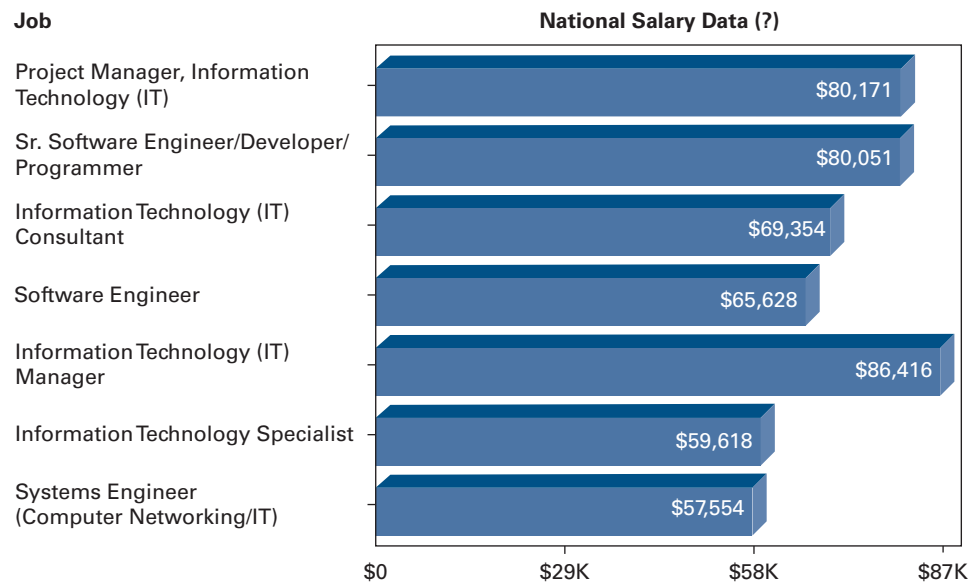
**Development Platforms**—Development platforms are support software tools for logical and technical modeling and writing software. Not only do they provide a repository of project information, they also often support the automated translation of logical requirements into technical requirements and/or technical requirements into various platforms of implementation.

**Databases**—Databases are central to the information management activities of any organization. Databases support the design and implementation of logically related information. Database-stored information can then be used, manipulated, and massaged according to the needs of the end user without regard to the physical storage characteristics of information.

**Data Warehouses**—These support the management and assimilation of information for decision making and important business analysis activities. Data warehouses summarize and aggregate information in multiple dimensions or perspectives, giving end users the ability to “slice and dice” their way through the information to see patterns, identify problems, and identify competitive advantage opportunities.

**Networks and Security**—These include a vast array of technologies including communications protocols, telecommunications hardware such as routers, and architectures such as 2-tier and 3-tier (i.e., client/server networks).

**Figure K.4**  
 Employment and Other Information in Information Technology<sup>8,9</sup>



TOP 5 STATES BY SALARY	
Washington, DC	\$97.6k
New Jersey	\$96.0k
Maryland	\$93.7k
Connecticut	\$91.3k
Virginia	\$91.3k

BOTTOM 5 STATES BY SALARY	
Idaho	\$62.2k
Maine	\$60.3k
South Dakota	\$59.6k
Vermont	\$58.3k
Nevada	\$53.9k

**Multimedia Tools**—This tool set includes a variety of hardware and software associated with the capturing, creating, and manipulating of information in forms other than text and numbers. Such information includes audio, video, still photos, art, and so on.

## Management

Managers play a critical role in shaping the future of U.S. businesses. Managers must be well-educated, creative, and effective. Managers hold over 3 million jobs in the United States and are in every industry. Managers plan, organize, direct, control, and coordinate the operations of organizations and major departments or programs. Organizations today operate in an increasingly complex and fast-changing environment, and managers depend increasingly on the use of technology to carry out their responsibilities. Successful managers possess a broad range of interpersonal, technical, and analytical skills.



The management major is one of the most eclectic disciplines in all of academia. *Administrative services managers* perform a broad range of duties in virtually every sector of the economy. They coordinate and direct support services to organizations as diverse as insurance companies, computer manufacturers, and government offices. *Product marketing managers* develop the firm's detailed marketing strategy. Along with *product development managers* and *market research managers*, they determine the demand for products and services offered by the firm and its competitors. *Project managers* plan, executes, and finalize projects according to strict guidelines and within budget. The project manager also defines the project objectives and oversees quality control. *Public relations managers* direct publicity programs to targeted audiences. They sometimes specialize in a specific area, such as crisis management—or in a specific industry, such as health care. *Sales managers* direct the firm's sales program. They assign sales territories, set goals, and establish training programs for the sales representatives. As computers are increasingly used to record and organize data, *financial managers* are spending more time developing strategies and implementing the long-term goals of their organization. *Human resources managers* handle all aspects of human resources work, including employment, compensation, benefits, and employee relations. *Management analysts*, or *management consultants*, analyze and propose ways to improve an organization's structure, processes, efficiency, or profits.

## TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in management and their descriptions are listed below.

**Business Development Manager**—Is a team leader. The team is responsible for developing meaningful and profitable relationships with business partners. The manager recruits, trains, and enables subordinates to identify and exploit revenue opportunities with business partners. The manager coordinates and updates all ongoing relationships using the company's information technology system.

**Entrepreneur**—Entrepreneurs begin businesses and become their own boss. They usually start by creating and operating a small business. Sometimes, they purchase a franchise as a way to start. Increasingly, entrepreneurs are starting their first business on the Internet using e-commerce applications. Successful entrepreneurs face many options, including selling their business for large profits or equity in larger corporations, for example, the owners of Ben & Jerry's Ice Cream.

**Human Resources Manager**—Human resources (HR) managers serve as a link between management and employees. The HR Manager provides specialized services to members of the organization. The manager's goal is to foster positive relationships, increase job satisfaction, and make sure all customers' or clients' needs are met. The HR manager's responsibilities include: administration, recruitment, compensation and benefits, training and development, health and safety, and employee relations.

**Management Analyst**—Management analysts define the nature and extent of problems and develop solutions. The individual analyzes relevant data including annual revenues, employment, and expenditures. They interview managers and employees while observing their operations. In recent years, information technology and e-commerce have provided new opportunities for management analysts. Companies hire management analysts to develop strategies for entering and remaining competitive in the new electronic marketplace.

**Project Manager**—The project manager has direct accountability for all aspects of assigned projects including development of strategy and tactical plans. The individual creates

timelines for implementation; identifies resources required for the project; and oversees actual execution through to the final analysis. This position typically requires a master's degree; however, a bachelor's degree in business, with certification, is often sufficient.

**Retail Manager**—Retail managers are responsible for day-to-day management of a department or store. A major responsibility is to make sure that sales targets are met by ensuring that products and services are available and finding the best ways for selling them quickly and profitably. Primary goals of retail managers are to improve the economic performance of the company; increase customer satisfaction; and provide for continued growth.

**Supply Chain Manager**—The supply chain manager is responsible for managing and improving the supply chain of products and information flow. The individual builds relationships and linkages with customers and integrates them throughout the organization. The manager also assesses financial feasibility and impacts on businesses processes. The supply chain manager develops metrics for assessing supply chain value and links them with corporate revenue management. Managers use relevant feedback to improve the supply chain processes.

**Management Consultant**—The management consultant analyzes and evaluates operating procedures and then makes recommendations. These professionals are often hired to solve a specific organization problem.

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in management, we recommend that you gain knowledge in the IT tools and concepts listed below.

**Database Management and Integration**—Project managers use IT to develop various requirements, budgets, and schedules for projects. They schedule and coordinate projects using IT. Project managers develop projects that upgrade the firm's information security and other resources.

**Internet and Web Portals**—IT tools are invaluable resources for managers. They are able to access information critical to organizational success. HR managers use the Internet to link with employees, recruiters, and other organizations.

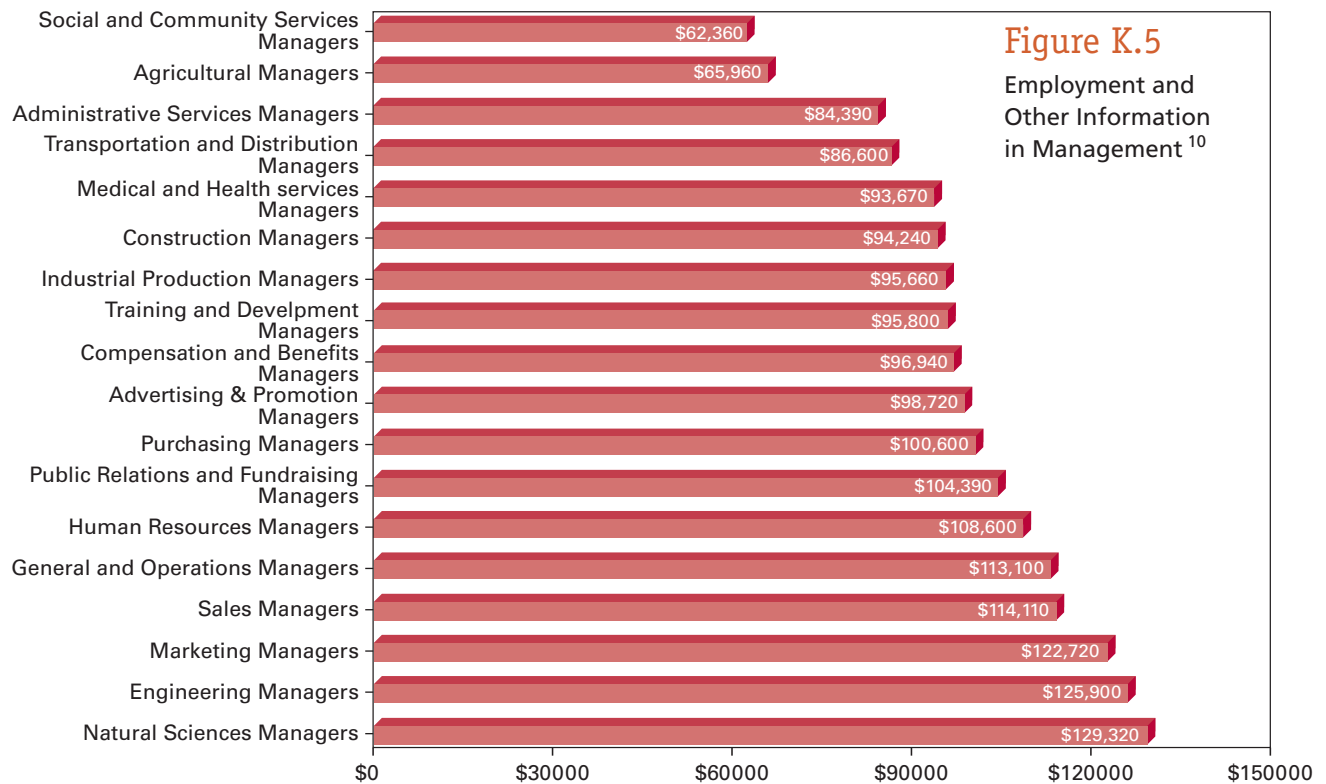
**Spreadsheets**—Spreadsheets help managers to organize work; calculate value; develop bar graphs or pie charts to display financial and other data; and determine the comparative cost of employee benefit programs and selected projects under consideration.

**Enterprise Resource Planning (ERP)**—In many corporations, managers recognize the need for a corporatewide system for communicating and sharing information. ERP provides an IT-based approach for creating and managing such a system.

**Database Management**—Managers create a centralized database relating to customers and the nature of contacts. The database includes client information, concerns, and resolutions. The database is available to relevant organization members.

**Geographical Information Systems (GIS)**—Managers that depend on natural resources such as fisheries for their business use GIS to identify, protect, and manage these resources. GIS is used to determine the habitats and migration patterns of various species, for instance.

**Electronic Commerce (E-Commerce)**—Business-to-Business and Business-to-Customer transactions via the Internet have accelerated the need for business managers to understand the potential of IT. Managers need the skills required for success in e-commerce.



## Marketing

Marketing as a career field and business specialization encompasses a broad range of activities including marketing, product development, advertising, public relations, promotions, and sales. Combined, these activities are undertaken to market and sell a company's products and services in a profitable way and give the company a competitive advantage in the marketplace.

Marketing programs in a business school often have the largest number of student majors because of the vast array of marketing positions and because of the perceived glamour of the field. While the field may be glamorous, it is also highly competitive, requiring a unique blend of people skills and technical skills. Marketing professionals work extensively with technology in many ways. They use statistical and data-mining tools to better understand consumer buying behaviors and make decisions regarding target marketing. They often interface with supply chain management (SCM) and customer relationship management (CRM) systems to enable the company to integrate and capitalize on its vast chain of suppliers and customers. Many marketing professionals use sophisticated personal computer applications to develop marketing and promotional material such as flyers and other forms of advertisements. Marketing is most often the primary interface to the company's customers as marketing includes sales, promotions, advertising, and even customer service.

### TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in marketing and their descriptions are listed below.

**Creative Marketing Specialist**—Designs creative marketing solutions for all forms of advertising including print, Web-based, radio, and television. Possesses a tremendous

knowledge of how people perceive and react to different types of advertising and promotional campaigns.

**Marketing Coordinator**—Manages and directs all marketing and advertising campaigns. Works closely with brand managers to uniquely identify and describe each “brand” within a company.

**Account Manager**—Develops, coordinates, and executes marketing strategies aimed at a select number of customers, with some account managers being responsible for only one customer. Develops very personal one-to-one relationships with key executives within the account.

**Market Research Analyst**—Designs, implements, and analyzes the information gathered from market research surveys and other instruments. Analyzes a variety of customer and consumer demographic information to determine competitive advantages in new marketing and advertising campaigns and new product development.

**Market Development Manager**—Contributes to the definition and development of new market opportunities for the company. May focus on products, geographical regions, and/or customer segments. Responsible for determining how best for the company to launch into a new area.

**Brand Manager**—Drives branding strategies and ensures that all external communications convey the message of the brand. Works closely with marketing communications and market development professionals to help the company achieve a competitive advantage through its branding efforts.

**Product Development Manager**—Responsible for acquiring insight into customer wants and needs and translating that insight into product specifications and quality. Works extensively in the field with focus groups of customers and often with product engineers in product design.

**Product Manager**—Charged with a product line and its contribution to the total sales of the company. Works to increase the profitability of existing products and to develop new products. Manages the entire product line life cycle from strategic planning to tactical and implementation activities.

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in marketing, we recommend that you gain knowledge in the IT tools and concepts listed below.

**Customer Relationship Management (CRM) Systems**—Marketing professionals are the primary interface to a company’s customers. Knowledge of CRM software is essential for managing the relationships established with customers.

**Budget Analysis/Impact Software**—Marketing professionals spend much of their time evaluating the financial feasibility of new products and services, advertising campaigns, promotional strategies, and the like. Budget analysis/impact software allows marketing professionals to explore a variety of “what if” scenarios for a given situation or campaign.

**Database Management**—Marketing professionals work with vast amounts of information stored in the form of a database. Knowledge of the logical organization of a database and how the information can be accessed is essential.

**Data Warehouses and Data-Mining Tools**—These tools offer marketing professionals a way of summarizing large amounts of information and viewing it from different perspectives. This is often the first step in understanding the relationships inherent (but often hidden) in large amounts of information. Although marketing professionals usually do not design and build the actual data warehouse, they must understand the



**Figure K.6**  
Employment and  
Other Information  
in Marketing <sup>11,12</sup>

#### Projections for Employment, 2018

TITLE	2008 EMPLOYMENT	2018 PROJ. EMPLOYMENT	NUMBER CHANGE	PERCENTAGE CHANGE
Advertising and Promotions Managers	44,600	43,900	-800	↓2
Marketing and Sales Managers	522,400	596,200	73,700	↑14
(Only) Marketing Managers	175,600	197,500	21,900	↑12
(Only) Sales Managers	346,900	398,700	51,800	↑15
Public Relations Managers	56,700	64,100	7,300	↑13

process and must also be well versed in using the data-mining tools for extracting information from a data warehouse.

**Communications Support Software**—This may include simple e-mail software but also extends to contact management software that enables marketing professionals to track their contacts with customers.

**Desktop Publishing Software**—Many marketing professionals are responsible for the development of “copy” material that will eventually become some form of paper-based advertisement such as a flyer or an insert in a newspaper. These documents must be developed using desktop publishing software to yield the highest quality.

## Production and Operations Management

In general terms, production and operations management is a specialization that deals with the production, manufacturing, warehousing, and transportation of physical products and also the operations of some business environments such as how to schedule nurses in a hospital. So, production and operations management encompasses such aspects as inventory management, production design and control, logistics and transportation, raw materials acquisition and storage, employee scheduling, and so on. Along with finance and accounting, production and operations management is one of the most analytical and technical specializations in business.

Production and operations management touches on many major business initiatives. For example, to determine the right levels of inventory and timing of shipments, people in production and operations management must understand the needs and desires of customers, so customer relationship management is very much a part of production and operations management. People in production and operations management are often in charge of creating a tight supply chain with suppliers and customers, as well, so supply chain management is essential to effective production and operations management. Statistical and data-mining tools are also very important to a person in production and operations management. Many initiatives in this specialization focus on the “bottom line,” that is, increasing bottom-line net profits by reducing costs. For this reason, people in production and operations management use highly sophisticated statistical and data-mining tools to explore every opportunity to drive costs out of the production, manufacturing, warehousing, and transportation functions.

### TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in production and operations management and their descriptions are listed below.

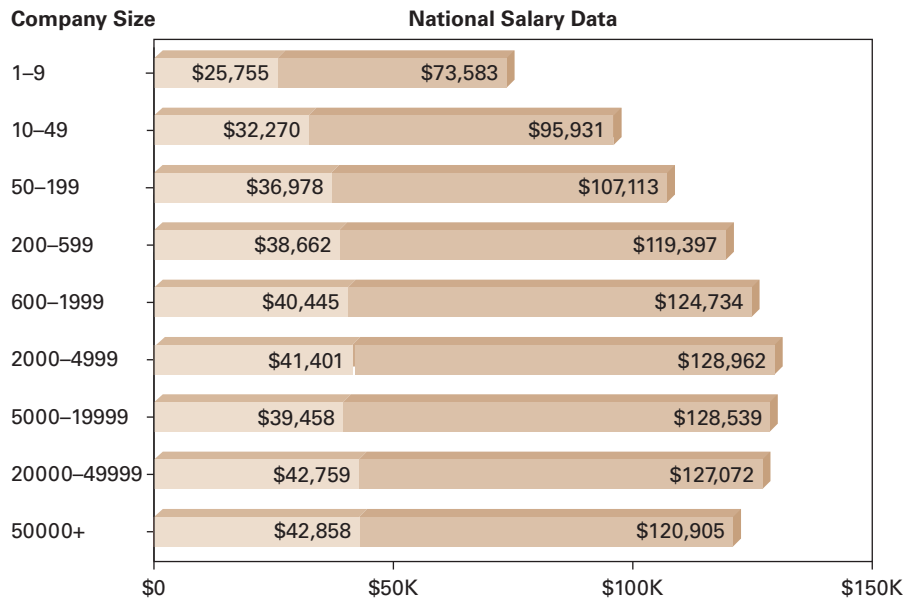
**Production Scheduler**—Usually found in a manufacturing environment focusing on preparing production schedules. Generates late-order reports, prioritizes operations and materials flow, and determines human resource allocations within a manufacturing environment. A knowledge of ERP (enterprise resource planning) systems is usually required.

**Inventory Manager**—Facilitates the planning for and procurement of inventory items including indirect materials and direct materials. Maintains accurate inventory counts and determines the optimal inventory levels to keep. Monitors inventory for potential stock-outs, oversupplies, and inventory obsolescence. Often helps to determine master schedule for production and manufacturing processes.

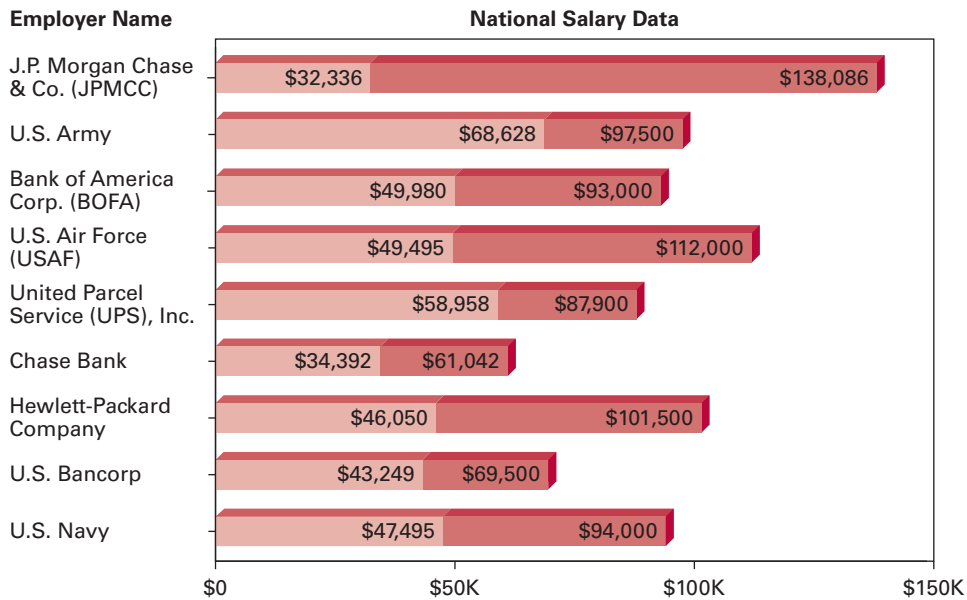
**Quality Assurance Analyst**—Works with all departments to ensure that QA/QC (quality assurance/quality control) guidelines are followed and metrics are met. Manages and oversees quality specifications for raw materials, processing, and packaging. Performs quality audits periodically to help the organization maintain its desired quality levels.

**Purchasing Manager**—Works directly with suppliers to develop programs that result in the low-cost acquisition of high-quality materials. Negotiates terms of contracts with suppliers.

**Operations Analyst**—Analyzes a variety of business operation segments including marketing, sales, purchasing, distribution, and warehousing. Makes recommendations concerning how to optimize business operations by reducing costs. Often works with



**Figure K.7**  
 Employment and Other Information in Production and Operations Management<sup>13, 14</sup>



sales and marketing groups to make recommendations on product performance, price adjustments, and product eliminations.

**Statistical/Research Analyst**—Analyzes a variety of business operation segments using sophisticated statistical and data-mining tools to determine how best to improve a company’s operations. May include determining market segments for new or existing products, setting prices, and a variety of other business issues that require significant statistical analysis.

**Logistics Analyst**—Focuses on the development of optimal solutions for logistical issues including cargo weight solutions, locations for distribution centers, and routing schedules for transportation modes such as trains and fleet trucks. Works extensively with supply chain management (SCM) systems to integrate logistics solutions within the company’s supply chain activities.

## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in production and operations management, we recommend that you gain knowledge in the IT tools and concepts listed below.

**Statistical Tools**—For most careers in production and operations management, a detailed knowledge of statistics is essential, including the use of popular statistical software tools such as SAS and STATISTA.

**Advanced Decision Support Spreadsheet Functions**—Spreadsheet decision-support functions such as goal seeking, optimization, and statistical tools provide support for the many careers in production and operations management.

**Supply Chain Management (SCM) Systems**—A knowledge of supply chain management (SCM) systems allows a person in this specialization to work with every department in a company, integrating solutions to maximize customer value.

**Production and Inventory Control Software**—There are many types of vertical market software relating to production and inventory control. These are essential for this career as most jobs require the use of such tools.

**Material Requirements Planning Software**—This is often called enterprise resource planning (ERP) software and allows a production and operations manager to understand the operations of a business from beginning to end and to optimally model those operations.

**Data-Mining Tools**—As data warehouses are becoming more widespread, production and operations managers can use data-mining tools to find new relationships in data warehouse information and employ a variety of statistical techniques to explore data warehouse information.

**Scheduling Software**—Scheduling software facilitates the optimal scheduling of a variety of resources within a business environment including people, plant equipment, transportation modes, and manufacturing operations.

### Real Estate and Construction Management

Often when people think of the real estate industry, they think only of residential real estate agents selling homes. In fact, real estate is an approximately \$3 trillion per year industry encompassing residential, office, retail, industrial, and many other property types. People in the real estate industry are developers, brokers, investors, Wall Street analysts, pension fund advisors, and many others.

The field of real estate and construction management (RECM) is inherently interdisciplinary. Feasibility and development analysts must understand urban economics, consumer behavior, and finance and regulatory issues. Appraisers estimate the value of property using systematic procedures, judgment, and statistics and may also be called on to provide expert testimony in legal proceedings. Construction lenders need to understand money and credit, to be sure, but they must also understand construction project scheduling, estimating, and contracts. A corporate real estate professional must understand the corporation's core business and how real estate assets can contribute to both the "top line" and "bottom line." Real estate developers epitomize this interdisciplinary approach. The real estate developer coordinates and directs the activities of many professionals and consultants, from the time the development project is simply a concept, through construction, occupancy, and the eventual disposition of the property.



## TYPICAL JOB TITLES AND DESCRIPTIONS

The typical job titles found in real estate and construction management and their descriptions are listed below.

**Commercial Real Estate Loan Officer**—Responsible for soliciting and servicing a variety of commercial real estate loans, including large and complex transactions for real estate investments, development, and construction. Requires familiarity with financial analysis and modeling as well as other concepts, practices, and procedures in the field.

**Commercial Real Estate Appraiser**—Examines and evaluates commercial property to estimate a fair market value for loan collateral. Analyzes local and national market trends and investment valuation using a variety of techniques. Prepares very complex and detailed reports and is called upon to testify in court proceedings and act as a consultant.

**Real Estate Broker**—Responsible for working with both buyers and sellers. Brokers act as a liaison between purchaser and seller to ensure a fair trade.

**Property Manager**—Responsible for the financial and physical maintenance of commercial, industrial, or residential properties including oversight of leasing of properties in the portfolio. Responsible for analyzing information on operating costs as well as preparation of the annual budget for the properties.

**Real Estate Development Manager**—Directs the activities of firms that acquire real property for development or redevelopment. Leads the company in these endeavors as the head of the development team.

**Real Estate Development Representative**—May acquire land for new development or older properties for redevelopment. Assists the company in these endeavors as a part of the development team.

**Construction Manager**—Responsible for the overall management of construction projects and may oversee multiple projects. Ensures construction projects are completed on time, within budget, and to the client's satisfaction. Performs a variety of tasks and leads and directs the work of others.

**Construction Field Superintendent**—Oversees the daily construction activities at the work site, including project scheduling, delivery of equipment and materials, and progress of the project. Resolves contract disputes and arranges any necessary order changes. Requires a familiarity with a variety of construction management concepts, practices, and procedures.

**Real Estate Financial Analyst**—Responsible for building and maintaining complex financial models. Prepares look-back analyses of acquisitions and developments, draws conclusions, and makes recommendations. Analyzes capital markets alternatives, derivatives, and their impact on the company's financial position and earnings outlook. Examines capital investments and their impact on the company's financial position and earnings outlook as well as key expenses for potential cost savings.

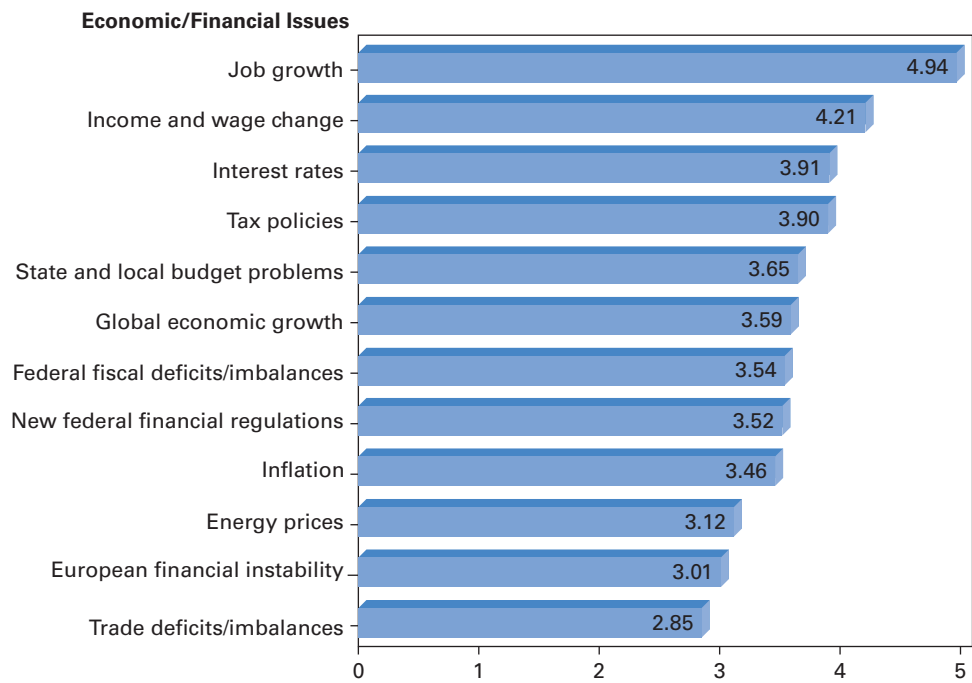
## INFORMATION TECHNOLOGY SKILLS YOU SHOULD PURSUE

To be effective in real estate and construction management, we recommend that you gain knowledge in the IT tools and concepts listed below.

**The Internet and Web Portals** —The use of Web portals, or virtual project sites, allows professionals to store and share project documents, schedules, and other information 24 × 7 in a real-time environment.

**Real Estate Search Engines**—Multiple Listing Services (MLS) are used by real estate professionals and typically are proprietary. Other publically available search engines for

**Figure K.8**  
 Employment  
 Information in Real  
 Estate and Construction  
 Management <sup>15,16</sup>



**Selected RECM Positions and Salaries**

Position	Base Salary Range		
	High	Median	Low
Top Research Executive/ Director	\$165,900	\$129,400	\$93,100
Lease Administrator	\$57,900	\$50,000	\$43,200
Property Accountant	\$57,400	\$50,000	\$42,100
Senior Financial Analyst	\$92,400	\$75,500	\$65,300
Financial Analyst	\$71,700	\$58,800	\$51,500
Asset Manager	\$125,000	\$83,300	\$70,300
Senior Property Manager	\$124,200	\$97,500	\$85,000
Building Engineer	\$68,300	\$57,800	\$47,100
Maintenance Supervisor	\$80,800	\$70,200	\$58,000
Typical Leasing Agent	\$80,000	\$41,200	\$28,700
Development Manager	\$137,500	\$120,000	\$108,300
Project Manager	\$93,200	\$81,000	\$72,000
Construction Manager	\$125,600	\$116,000	\$91,200
Construction Onsite Manager	\$99,500	\$92,000	\$85,100
Development Director	\$177,500	\$144,400	\$129,300
Research Associate	\$69,100	\$57,000	\$45,000

real estate include Zillow.com, Trulia.com, and Realtor.com. Commercial real estate practitioners typically look to sites such as Loopnet.com and REIS.com for market data.

**Geographic Information Systems (GIS)**—GIS aids in site selection, feasibility analysis, and investment strategy by combining spatial and tabular information allowing the real estate professional to use maps that are alive and relevant.

**Database Management and Integration**—Supports the varied needs of accounting, lease administration, finance, and property management, allowing the entire project team to share information and support the client’s needs.

**Spreadsheet Modeling**—Allows the real estate analyst to efficiently perform discounted cash flow analysis, ratio analysis, and underwriting analysis, and to measure the sensitivity of various assumptions.

**Computer Aided Design (CAD)**—CAD provides for digital imaging of architectural designs allowing users to test the results of changes in layout and design on the functionality and efficiency of the building.

**Project Scheduling**—Construction project scheduling involves estimates of timing, precedence, and critical path essential to the completion and success of development projects.

**Automated Valuation**—An Automated Valuation System (AVS) uses statistical and other analyses to automate the loan underwriting process, loan origination, collateral scoring, and appraisal.

**Customer Relationship Management (CRM) Systems**—Combines contact management, calendars, schedules, and client information into a database providing a centralized repository of contacts in which all team members share one contact record and subsequent relationship activity.

**Specialty Software**—ARGUS Valuation DCF is the industry standard commercial real estate cash flow projection, transaction analysis, and asset valuation solution. Argus Developer is an addition to the Argus suite for real estate development pro forma modeling. CoStar is a comprehensive database of independently researched information including commercial real estate for sale, property for lease, verified comparable sales transactions, and tenant information.

## ■ ASSIGNMENTS AND EXERCISES

There is only one assignment and exercise for this module, and it’s all about you. What you’ve just read is a summary and broad overview of the many career opportunities in the business world. It’s now your turn to think seriously about your future career and perform some research.

