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Feature Article: *Potential Position Descriptions for Information Engineering Professionals*
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This article defines the tasks and responsibilities for up to seven levels of information engineers, plus two levels of management. Suggested position titles include:

- Graduate Information Engineer (Entry Level)
- Associate Information Engineer (Level I)
- Technical Information Engineer (Level II)
- Senior Information Engineer (Level III)
- Designer Information Engineer – (Level IV)
- Consultant Information Engineer – (Level V)
- Senior Consultant Information Engineer – (Level VI)
- Manager of Information Engineering
- Director of Information Engineering

Following is a summary for each job level. As you will see, each write-up addresses: **a**) the job's basic function or focus; **b**) the education and experience preferred; and **c**) the typical or estimated amount of time an individual should expect to stay at each job level before advancing to the next position in the series.

Clearly, these position descriptions are just a guideline to show how an individual might progress through a career path in Information Engineering. Although job titles and levels will vary significantly from one company to the next, this series shows how communications professionals can have a career path with as many levels as software programmers and other types of engineering positions in our industry today.

For a matrix that summarizes job activities for the seven core information engineering levels, click here.

Graduate Information Engineer (Entry Level)

Basic Function & Focus

Normally, this entry-level position is filled by recent college graduates, or by individuals who have been promoted from a different technical career path within the company. They develop an understanding of appropriate company products and procedures, as well as the company hardware and software systems necessary to facilitate the completion of assignments. Usually, engineers at this level participate in some part of the creation or refinement of a broader project.

Graduate information engineers learn to become part of a team, assisting senior engineers with various projects. They become familiar with the company, organization, group, and business unit.

Typical Responsibilities include:

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- Developing online documentation, drafts of paper documentation (guides, manuals, tutorials, brochures, etc.), classroom and online-based training courses, and demonstrations.
- Participating in delivering training for customers and sales personnel.
- Developing an understanding of the company's organizations, processes, products, and information engineering development.

Usually, engineers specializing in courseware (training) or documentation focus on one or more forms of media and learn developmental processes. For education delivery, engineers may focus on assignments that develop and refine instructional techniques, teaching, and development skills.

Education and Experience Preferred

- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience.
- Formal education in development of courseware or documentation and the use and application of computer products.

Estimated Time in Position

- 6-12 months

Associate Information Engineer (Level I)

Basic Function

In this position, engineers are expected to begin performing as individual contributors by developing and/or delivering information products, as well as learning the fundamentals of design and analysis of information products. They continue to learn about the company and information engineering processes, and to develop industry and product expertise. Using the organization's existing processes (documentation, training, etc.), engineers at this level develop training or documentation on at least one form of media or to plan, schedule, and conduct classroom and/or online training sessions. They also continue to develop ongoing technical, industry, and process expertise.

In addition to mastering the activities of the entry-level position, the incumbent is also responsible for:

- Developing online documentation, drafts of paper documentation (guides, manuals, tutorials, brochures, etc.), classroom and/or online-based training courses, and/or demonstrations.
- Delivering training courses for customers, sales personnel, and/or service providers.
- Developing a high level of understanding of the company's products and information engineering development; attend conferences and seminars and provide feedback to management.

As training or documentation specialists, engineers provide assistance with validating information products, including product usability testing. For training delivery, engineers assist with validating new courses by contributing revisions, evaluating techniques, and measuring the effectiveness of course materials.

Education and Experience Preferred

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- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience.
- 9-18 months involvement in information engineering development; experienced in development or delivery.

or

- Development of either training or documentation on one or more types of media.
- 6-12 months experience in information engineering development or delivery as a Graduate Information Engineer.

Estimated Time In Position

- 9-18 months

Technical Information Engineer (Level II)

Basic Function

In this intermediate position, engineers perform as individual contributors in development or delivery and begin to participate in the design and improvement of information products. They develop expertise in products, industry, and/or technologies. In training or documentation development, they become proficient in one or more forms of media.

These engineers also become actively involved in validation, scheduling activities, and facilitating training such as train-the-trainer sessions, pilot courses, or teleconferences. They may begin to learn the fundamentals of project leadership by assisting senior analysts. In addition, they begin to assimilate some aspects of managing their work environment.

Development Focus

In this position, engineers begin to develop skills necessary for leadership. They may assist senior analysts in structuring and executing plans and activities of previously determined project plans. They enhance their quality/customer focus by interfacing with others outside the organization and outside the company.

Typical responsibilities include:
- Developing online documentation, drafts of paper documentation (guides, manuals, tutorials, brochures, etc.), classroom or computer-based training courses, and/or demonstrations
- Delivering training (classroom, web-based, etc.) for customers, sales personnel, and/or service providers.
- Scheduling activities and facilities for train-the-trainer sessions and pilot courses for classroom training.
- Validating information products through usability testing, course validation, Deployment Readiness Validation, and customer control sites
- Producing master media of information products for manufacturing.
- Interfacing with manufacturers for deliverable media production for all information products, including material for classroom courses

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As education or documentation developers, engineers begin to analyze customer, technical, and sales support needs by conducting surveys or focus groups and by interfacing with customers and marketing organizations. As course deliverers, engineers learn and contribute to the identification and resolution of complex, systems and educational problems for plant, sales, service, and customer groups.

Education and Experience Preferred

- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience.

- 1-2 years in information products development or implementation, depending on experience and performance.

- 9-18 months experience in information products development or training delivery as an Associate Information Engineer, Level I.

Estimated Time in Position

- 12-24 months

Senior Information Engineer (Level III)

Basic Function

In the senior position, engineers possess the skills and knowledge to contribute to complex projects, and they begin to contribute to product design. They may also begin to lead projects, depending on the organization and the number of opportunities. More likely, they begin to assist and coordinate junior engineers in the completion of their assignments.

Senior Information Engineers continue to develop expertise or diversity in products, industry, and/or technologies. They also become more actively involved in validating information products, scheduling activities, and facilitating training, such as train-the-trainer sessions, pilot courses, teleconferences, webinars, and so on. They may also begin to learn the fundamentals of project leadership.

Development Focus

Senior analysts will have mastered most of the developmental skills and processes. They continue to learn and apply leadership skills. They develop and implement project plans and activities. They enhance their customer expertise by interfacing with others outside the organization or managing third-party vendors or contractors.

In addition to mastering the activities of the previous engineering positions, the incumbent is also responsible for most of the following activities:

- Analyzing customer, technical, and sales support needs by surveying customers, conducting focus groups, and extracting requirements from various organizations.

- Designing or building prototypes of information products' content, organization, human interface, and delivery media.

- Developing an Information Engineering Plan for the entire information product set to support and educate customers or sales/support organizations.

- Developing online documentation, drafts of paper documentation (guides, manuals, tutorials, brochures, etc.), classroom or computer-based training courses, and/or demonstrations.

- Validating information products through usability testing, course validation, Deployment Readiness Validation and customer control sites.

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- Planning, scheduling, and conducting pilot courses for classroom and/or online training sessions.
- Interfacing with manufacturers for deliverable media production for all information products, including material for training courses.
- Assuring customer satisfaction with information products through customer involvement in design and post-release feedback surveys.
- Developing, implementing, and maintaining project or departmental processes, standards, or guidelines; research new production tools or technologies for project or departmental use.
- Planning and managing standard information products development and delivery projects; structuring and executing plans and activities throughout the life of the project or product.

Education and Experience Preferred

- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience.
- 2-4 years involvement in information products development or implementation, depending on experience and performance.
- 1-2 years experience in information products development or delivery as a Technical Information Engineer, Level II.

Estimated Time in Position

- 18-36 months

Designer Information Engineer (Level IV)

Basic Function

At the Designer level, engineers use the technological and/or leadership skills they have developed in previous positions. Depending on business unit or marketing group requirements and career goals, they may specialize on analyzing and designing information products, on managing development projects, or on performing any combination of the activities that range from design to project management.

Whether in course or documentation development, designers are likely to be involved in projects without established precedents. Thus, they may have to use problem-solving skills, techniques, and team leadership to bring a project to completion. Planning, organizing, influencing, and leading others are key elements of this position.

Moreover, designers continue to develop expertise or diversity in products, industry, and/or technologies. They plan and manage validation, scheduling activities, training sessions, pilot courses, teleconferences, webinars, and so on.

Development Focus

In this position, designers may specialize in:
- Technology (information, software, or hardware products)
- Product line or type
- Market or industry

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Designers may diversify by focusing on leadership while developing a level of proficiency in one or more of the above areas. They are in positions in which learning and improvement are based on business and career goals. Designers provide work direction to analysts in the form of technical or project leadership. They have good communication and delegation skills, as well as skills in managing conflict and change.

Designers develop and implement project plans and activities. They enhance their quality/customer expertise by interfacing with others outside the organization and by managing others outside the company.

In addition to mastering the activities of previous positions, the incumbent is also responsible for most of the following activities:

- Define, develop, implement, and maintain project or departmental processes, standards, or guidelines; research, recommend, and implement new production tools or technologies for project-level or departmental use.
- Define vocational requirements for project or departmental Information Engineering professionals and provide the tools, programs, or processes for meeting those requirements.
- Establish and maintain relationships with local universities to enhance recruiting capabilities, influence curriculum, or develop joint R&D programs; establish and/or improve quality process relationships with business partners.
- Champion human interface development and human factors within the business unit or marketing group; where applicable, lead or participate in human interface teams to design and develop product interfaces or implement processes or standards.
- Plan and manage standard or moderately complex information products development projects, which may include documentation and/or educational development; structure and execute plans and activities throughout the life of the project or product.
- Develop and implement organizational plans, strategies, processes, and working environments necessary to develop and deliver world-class information products; influence the integration of information engineering development processes with all hardware or software development processes.

Whether involved in development or delivery, Information Products designers participate in the definition of new standards, processes, and tools. They continue to develop skills to advance to higher developmental positions.

Education and Experience Preferred
- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience.
- 4-7 years involvement in information products development or implementation, depending on experience and performance.
- 1-3 years experience in information products development or delivery as a Senior Information Engineer, Level III.

Estimated Time in Position

- Minimum 36 months

Consultant Information Engineer (Level V)

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Basic Function

Consultant engineers provide a high level of subject matter expertise or functional skill required by business units, marketing groups, or organizations. They may

- Lead or initiate advanced projects for implementation beyond the organization's boundaries.
- Champion the information products industry with outside organizations, such as universities, third-party vendors, or peer companies.
- Lead or participate in the development of new technologies and processes.
- Provide consultation on efforts already in progress or on customer service problems.

Typically, consultants are involved in projects without established precedents, using design, development, organization, and problem-solving skills and team leadership to manage complex or multi-organizational projects. Planning, organizing, influencing, and leading others are key elements of this position.

Development Focus

In this position, consultants maintain technical or vocational expertise in one or more of the following areas:

- Technology (information, software, or hardware architecture)
- Product line or type
- Market or industry
- Complex or multi-organizational project management

They keep abreast of new and changing technologies, processes, and cultures. Assignments in this position vary widely. As technical experts, they are architects, role models, mentors, advisors, researchers, or coordinators. As leaders, they are developers, implementation specialists, and change agents for large or complex projects or processes.

At this level of expertise, they may also represent either their company or the communications industry in general as an expert in their field.

In addition to mastering the activities of previous positions, the incumbent is also responsible for one or more of the following activities:

- Designing information products.
- Developing, maintaining, and supporting information products.
- Validating information products.
- Producing information products.
- Delivering information products through training.
- Manufacturing information products.
- Assuring customer satisfaction.
- Defining, developing, and improving processes, standards, tools and technologies.
- Providing tools, programs, and processes for vocational skills development.
- Developing and maintaining product and technical expertise and professional discipline.
- Establishing and maintaining strategic relationships with universities and business partners.

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- Championing human-interface design within business units or marketing groups.
- Managing projects.

Education and Experience Preferred

- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience
- 7-10 years involvement in information products development or implementation, depending on experience and performance
- At least 3 years experience in information engineering development or delivery as a Designer Information Engineer, Level IV.

Suggested Time in Position

- Minimum 24 months

Senior Consultant Information Engineer (Level VI)

Basic Function
Senior Consultant Information Engineers are individuals who have developed a very high level of subject matter expertise or functional skill. They provide technical or vocational leadership, coordination, or services to large, multiple, or staff organizations. They may:

- Lead or initiate advanced projects for implementation across organizational boundaries or throughout the corporation.
- Champion the information products industry with outside organizations, such as universities, third-party vendors, peer companies, or strategic partners.
- Pioneer the development of new technologies and processes for large organizations or the entire corporation.
- Develop tactical or strategic plans for information products.
- Provide consultation or problem resolution on technical, process, customer, and application-related issues.

Development Focus

In this position, senior consultants research and develop advanced technical or vocational expertise in one or more of the following areas:

- Technology (information, software, or hardware architecture)
- Product line or type
- Market or industry
- Complex or multi-organizational project management

They quickly develop a level of expertise in new and changing technologies, processes, and trends in their fields. As technical experts, they are scientists, researchers, architects, advisers, teachers, and/or coordinators in highly specialized or advanced efforts. As leaders, they are change agents and implementers for new or complex technologies or processes.

At this level of expertise, a consultant may also represent either the company or the communications industry in general as experts in their fields.

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In addition to mastering the activities of the previous positions, the incumbent is also responsible for one or more of the activities listed below:

- Analyzing information products needs for hardware, software, or service products.
- Designing information products.
- Validating information products.
- Producing information products.
- Manufacturing information products.
- Delivering information products through training.
- Assuring customer satisfaction.
- Defining, developing, and improving processes, standards, tools, and technologies.
- Providing tools, programs and processes for vocational skills development.
- Developing and maintaining product and technical expertise and professional discipline.
- Establishing and maintaining strategic relationships with universities and business partners.
- Championing human-interface design within business units or marketing groups
- Managing projects.

Education and Experience Preferred

- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience.
- 9-11 years involvement in information products development or implementation and proven technical expertise in one or more areas.
- At least 2 years experience in information engineering development or delivery as an Consultant Information Engineer, Level V.

Suggested Time in Position

- No minimum or maximum time

Manager of Information Engineering

Basic Function

In this job series, managers direct information engineering professionals in performing their responsibilities and developing their skills. They research and implement cost-effective solutions to information products' needs. In addition, managers are also responsible for plans, budgets, assets, departmental operations, developmental processes, personnel management, and administrative operations.

Development Focus

In addition to displaying leadership and technical ability in previous positions, the incumbent is responsible for the following activities:

- Analyzing information products needs for hardware and software products.
- Designing information products.

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- Developing, maintaining and supporting information products.
- Validating information products.
- Producing information products.
- Manufacturing information products.
- Delivering information products through training.
- Defining, developing, and improving processes, standards, tools and technologies.
- Providing tools, programs, and processes for vocational skills development.
- Developing and maintaining product and technical expertise as well as professional discipline.
- Establishing and maintaining strategic relationships with universities and business partners.
- Championing human-interface design within business units or marketing groups.
- Performing the leadership and administrative functions of a technical development organization.

Education and Experience Preferred

- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience
- 6 or more years involvement in information products engineering or implementation along with 2 years leadership experience.
- Cross-functional assignments.

Suggested Time in Position

- No minimum or maximum time

Director of Information Engineering

Basic Function

Directors in this job series oversee the overall activities of one or more Information Engineering organizations. They manage plans, budgets, assets, as well as departmental, personnel, and administrative operations. They interact with functional peers throughout the business unit, division, group, and company. As functional heads of Information Engineering organizations, they are responsible for assuring that information products are on schedule, within budget, and meet all customer needs. They use their managerial and technical strengths to influence, motivate, and cultivate employees to their best abilities.

Development Focus

Directors of Information Products focus their development efforts on broadening their business knowledge, fully understanding the customer, and applying information engineering techniques, procedures, and processes. They explore business opportunities, provide vision, shape the organization, and support the strategic direction. They mentor, sponsor, and prepare promising individuals for key roles with the company. They use their influence to shape and achieve division and corporate goals.

Directors must continue to develop, maintain, and improve their technical and managerial skills. They are more concerned with the feasibility of using a technology than with the technology

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itself. Key areas include:

- Benchmarking
- Cost/benefit analysis
- Cost of quality
- Customer knowledge and satisfaction
- Managing advanced or multiple projects
- Marketing
- Productivity

Because directors work through others, effective leadership is an important skill. Motivating, influencing, decision making, and directing are among the most important skills. Other areas include:

- Fostering employee development and satisfaction
- Appraising and improving group performance
- Managing time and stress
- Teamwork and team building

In addition to displaying leadership and technical ability in previous positions, the incumbent is ultimately responsible for the following activities:
- Analyzing information products needs for hardware and software products
- Designing information products.
- Developing, maintaining and supporting information products.
- Validating information products.
- Producing information products.
- Manufacturing information products.
- Delivering information products through training
- Defining, developing, and improving processes, standards, tools and technologies.
- Providing tools, programs, and processes for vocational skills development.
- Developing and maintaining product and technical expertise and professional discipline.
- Establishing and maintaining strategic relationships with universities and business partners.
- Championing human interface design within business units or marketing groups
- Performing the leadership and administrative functions of directing a technical development organization.

Education and Experience Preferred
- Bachelor's or first degree in technical communication, instructional design and technology, training and development, or equivalent experience
- 8 or more years involvement in information products development or implementation, along with 2 years managerial experience
- Cross-functional assignments

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Suggested Time in Position

- No minimum or maximum time