



NASSCOM[®]

Building a Career in Software Products – Finding your way

Foreword

Dear Reader,

The IT industry in India has been growing at a tremendous pace and has been fuelling India's growth story. The industry has placed India on the world map with an image of a technological advanced and knowledge based economy.

The IT-ITeS industry is standing at a watershed moment in history. In FY 2012, the industry achieved a stellar landmark of crossing \$ 100 billion in revenues. The market potential of Software Products (SPD) and its impact on other sub-sectors and industries is significant. The SPD sub-sector has grown by almost two times in the last five years to record estimated revenue of \$ 3 billion in exports in FY 2013.

The past decade has seen frequent changes in the movement of the economy and companies are becoming increasingly conscious that in the globally connected world, the "new normal" will be characterized by business volatility. Growth in the IT/ITes industry is based on your performance, skills and hard work.

What attracts these million plus people to this industry? And why should you consider the IT/ITeS industry as a serious career option? This guide answers these and many other questions about a career in this industry.

Choosing a career is one of the most important decisions of your life, and this guide will help you make an informed choice. It tells you about the industry, the verticals it operates in, how to get a job in this industry and what you need to do to build a successful career.

Good luck and much success in whichever career you choose.

Som Mittal

President

This Career Guide answers the following key questions with respect to a career in the SPD industry...

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What is the overview of the IT – ITeS Industry?



The IT-ITeS industry has been fuelling India's growth story. In addition to contributing to the country's Gross domestic Product (GDP) and exports, the industry has played a big role in influencing the socio-economic parameters across the country. The industry has helped provide employment and a good standard of living to millions. It has placed India on the world map with an image of a technological advanced and knowledge based economy. Growth of the IT-ITeS industry has provided India with a wide range of economic and social benefits which includes creating employment, raising income levels, promoting exports and significantly contributing to the GDP of the country. This sector attracts amongst the largest investments by venture capitalist and has been credited with enabling the entrepreneurial ventures of many in the country. The IT-ITeS industry has almost doubled in terms of revenue and contribution to India's GDP over the last six years (2008-2013).

Structure of the IT-ITeS Industry

The organizations within the IT-ITeS Industry are categorized along the following parameters

- Sector the organization is serving
- Type as well as range of offering the organization provides
- Geographic spread of operations and
- Revenues and size of operations

A broad structure of the Industry based on the parameters identified in the Indian context is represented below¹:

Multi-national Companies (MNCs): MNCs organizations have their headquarters outside India but operate in multiple locations worldwide including those in India. They cater to external clients (both domestic and/or global).

Indian Service Providers (ISP): ISPs are organizations that have started with their operations in India. Most of these organizations would have their headquarters in India while having offices at many international locations

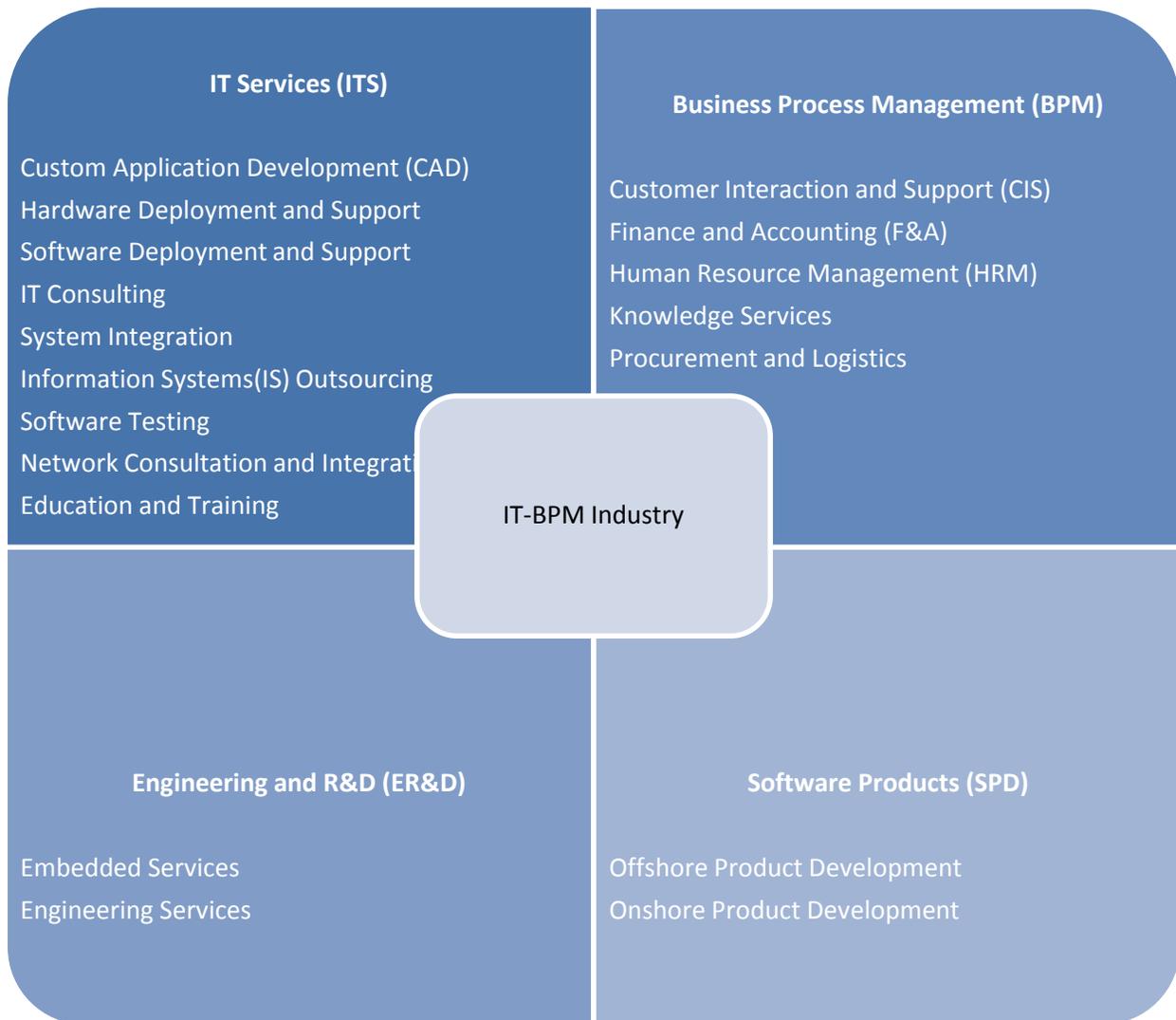
While most have a client base, which is global as well as domestic, there are some that have focused on serving only the Indian clients.

¹ Source: NASSCOM Research

Global In-house Centers (GIC): GIC organizations cater to the needs of their parent company only and do not serve external clients. This model allows the organization the option to keep IT Operations in-house and at the same time take advantage of expanding their global footprint and offering opportunities for innovation in a cost effective manner.

Sub-sectors within the IT-BPM Industry

The IT-BPM industry has four sub-sectors. The subsequent sections provide information and insights for a career in the Software Products (SPD) sub-sector.



What is the Software Products sub-sector?

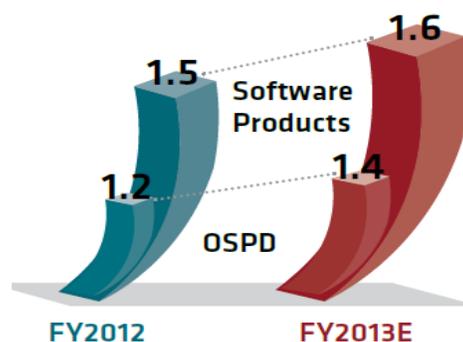


Introduction to the SPD Sub-sector

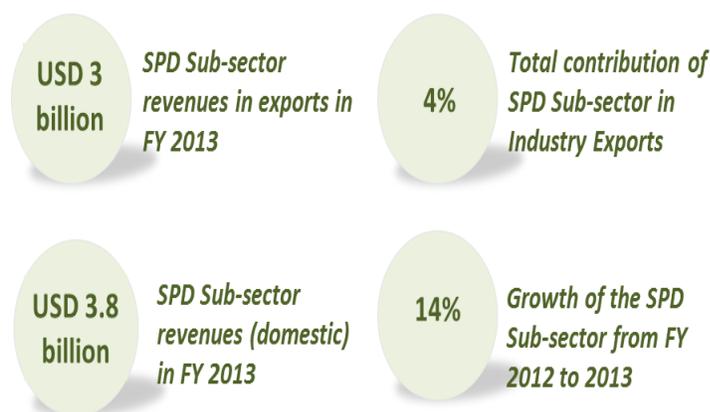
Software Products are programs or code sets of any type, commercially available through sale, lease, rental, or as a service. Packaged software revenues typically include fees for initial and continued right-to-use packaged software licenses. The IT Industry segment catering services to this area – through all or any of the product lifecycles – is referred to as the Software Products sub-sector.

This sub-sector also encompasses the offshore development of the customer's product or Offshored Software Products Development (OSPD). Responsibility of different aspects of the product lifecycle - R&D, prototype, development, test execution, maintenance, support and development of next generation of products lies with an offshore team/vendor/organization. Offshoring of non-core activities provides an organization the opportunity to save on costs and focus on core activities. As the industry matures, more complicated and critical work is being carried out offshore.

The Indian SPD market is small when compared to the IT services and BPM sub-sectors of the IT-ITeS Industry. However, the market potential of this sub-sector and its impact on other sub-sectors and industries is significant. The SPD sub-sector has grown by almost two times in the last five years to record estimated revenue of \$ 3 billion in exports in FY 2013.



Software Products built on new technologies like Cloud Computing, Social Media and Value Added Services have witnessed growth due to strong support from venture capitalists. As a result, this space has seen a large number of entrepreneurs whose success stories have inspired and drawn many to the field. Many Indian software product organisations have emerged as top vendors globally for products across BFSI as well as telecom sectors. This has contributed to building a much needed brand for all other IT industry sub-sectors in both the domestic as well as global space as India starts to be viewed as a provider of high-end services. Innovation in other sectors is also fostered by this sub-sector as the time to market the product goes down with emerging technologies.



Profile of the SPD Sub-sector

Software Product Development is the fastest growing IT-ITeS sub-sector globally, generating revenue of \$ 278 billion in FY2012 through package software products only. This is also reflected in the Indian market where the average growth of this industry has been in double digits with 14% for FY 2013. While the product development segment has a revenue size exceeding \$ 1.6 billion, the offshore market is estimated at \$ 1.4 billion. The growth in this segment is not a sudden spurt. The sub-sector has been witnessing double digit growth over the last five years, while future growth is estimated at 14%.

Vertical Profile: BFSI is the largest driver in this space claiming majority of SPD revenues. Other Industry verticals, like Healthcare and Education have been on the upswing over the past decade. Education in particular has become a huge revenue driver owing to the Information and Communication Technology (ICT) focus in Education at the State and National levels. An illustrative view of the vertical and horizontal profiles is shown in Figure 38 below.

Service Offering/Horizontal Profile: The industry started with performing work around support and gradually evolved to covering other stages of the product lifecycle, such as testing and providing professional services. The industry has now evolved, with the capability as well as demand for serving the entire product lifecycle, including R&D, product conceptualization and prototyping.

Customer Segment: The increasing permeation of IT across various businesses, irrespective of their size, has resulted in a corresponding diverse customer segment for the SPD sub-sector. Earlier, the large enterprises were adopters of technology and were big revenue contributors. However, the small and medium businesses are the ones that form the core of

the sub-sector; they have contributed to defining the trends in recent times, with this segment witnessing the highest IT adoption. Emerging technologies have created opportunities in the end user segment and many providers are rushing to address this gap.

Market Segment: The Software Products sub-sector closely mirrors the IT-ITeS Industry in general, with USA being the dominant market, and USA and Europe combining to provide over 8% of revenue to the sub-sector. The domestic market is much smaller but is set to grow. With the entrepreneurial scenario in India booming, many new Indian players are also seeking services for developing and bringing to market the conceptualized idea.

Player Segment: 550+ players are estimated to be operating in this sub-sector. However, over half of the revenue generation for the sub-sector happens from the top 5 players². The large players of the sub-sector have resources that enable them to offer end-to-end services through the product lifecycle for clients. The large players also generally provide services in other sub-sectors like IT services and BPM. The mid-range players account for another significant contribution to export numbers (~25%).

The smaller players focus on service lines/geographic lines/industry verticals, providing niche services.

² THE IT-BPM SECTOR IN INDIA, Strategic Review 2013; NASSCOM

Key Trends in the SPD Sub-sector

The SPD sub-sector is currently undergoing significant changes brought about by multiple forces, including market conditions, emerging technologies, evolving customer demands and increasing IT penetration. These forces are shaping the trends in this sub-sector. Some of the dominant trends are shown below:

Diversification of Industry Verticals: The growth of IT-ITeS Industry and the Software Products sub-sector has seen a spread in the number of verticals that are being serviced. This diversification has been driven by growing demand from other verticals as well as a conscious push by the players. Use of IT as a means of controlling costs and improving efficiencies has led to demands from most verticals. The growing size of these verticals has also created huge potential for business, and the need to diversify to reduce sector risk has encouraged the suppliers to diversify.

The small and medium businesses were among the first ones to explore the other emerging sectors. The larger players quickly realized the potential and have been pursuing these areas aggressively. While Financial Services still continues to be the dominant vertical to be serviced and is expanding with growing penetration yielding increasing revenue, the other verticals like Procurement and Customer Relationship Management (CRM) are observing good growth as well.

Movement up the Value Chain: In alignment with the maturing IT industry, the Software Products sub-sector has established its credentials globally and is now seeing players focus on providing high-end services. The sub-sector is also witnessing more work being done in specialized areas like Product Conceptualization and R&D, which was being traditionally done outside the country and at the client end. The providers have also started to offer services in associated areas like integration services and vendor management.

Changing Relationships between Vendor and Customer: Instead of focusing on one or a limited aspect of the product development lifecycle, companies as well as customers are now realizing advantages of the parent company owning the product lifecycle – implementation, testing, maintenance and enhancement. While this provides an opportunity of increased revenue and more protection of the product Intellectual Property (IP), the clients see a quicker resolution time and enhanced quality of updates, among other advantages. The product companies are now in a position to act as advisors to not only the product, but also help in chartering out the organization's technology roadmap and marketing strategy.

Changes in Delivery Model: The dynamic market scenario has led to the demand for changes in the delivery model. Movement from license based to on-demand service has been one of the dominant trends in this direction. This has reflected in changes to revenue models offered by service providers, which provide the customers flexibility to buy products on a need basis. Some of the popular emerging

revenue models are subscription or on-demand, revenue sharing, risk sharing, transaction-based and ad-based models. Disruptive technologies – cloud, mobility, social media and big data/analytics, are playing a significant role in driving growth of OSPD and software products. The Vendor-customer relationship offering is undergoing significant changes as organizations offer product consulting services, technology roadmaps, extended marketing team for clients and co-innovate product, services and technology roadmaps

What are the requirements for being an SPD professional?



Skills

The Software Products sub-sector requires a wide range of skills which vary with the - value stream that the organization is servicing, and at individual level -role and the position. Both Soft skills and Functional skills are crucial in the industry and organisations make a lot of effort in building these capabilities. Major hiring at the Entry Level is done on the basis of communication/soft skills and analytical aptitude.

The sub-sector needs specialized skills and the core talent need is technical in nature. However, like other sub-sectors in the industry, Software Products also house multiple roles which require different competencies. While strong analytical skills are a prerequisite in this sub-sector, strong communication abilities are required in client facing roles like sales, product documentation, testing and product support.

Project management skills and relevant experience are essential for managing various aspects of project delivery. Product Management again is a critical occupation where familiarity with software product development methodologies is important along with technical skills.

Similarly, Sales and Pre-sales roles require a strong technical understanding of the product in addition to domain knowledge.

The need for having strong Intellectual Property (IP) management also demands Legal to be an integral occupation within the Software Products sub-sector, and skills corresponding to the same (such as patent review, preparation, IP strategy development and so on) are also much sought after.

Key Generic skills requirements:

- Good Communication skills
- Analytical skills
- Problem Solving
- Creativity and out-of the box thinking
- Working with influence

Key Functional skills requirements:

- Industry/Domain skills
- SDLC concepts
- Programming skills
- Platform knowledge
- Automated testing
- ERP

Learning Opportunities

Software Products is a knowledge intensive sub-sector and fresh graduates often have a steep learning curve which they need to cover before becoming productive. The constant innovation of technology requires the employees to regularly update their knowledge for them to remain productive. Change in role or projects could also see the employees needing to learn new skills.

The sub-sector thus encourages and provides learning opportunities through different sources like certifications, training materials (online/class room), focused learning programs and on the job learning opportunities.

Increasing domain focus is leading to many Software Products organisations looking to acquaint the employees with domain specific (Retail, manufacturing, insurance etc.) knowledge. Similarly, tie ups with institutes or external vendors is used to provide training to employees for specific technical or platform skills.

The industry spends significant amounts of resources on providing learning opportunities. This not only provides for up-skilling of employees to meet business needs, but also helps to position the organization as a preferred employer

Learning opportunities are offered within and outside of the organisations. Some of these options include:

- Advanced technical degree courses like MCA, M. Tech, M.E., M Sc. etc.
- Advanced business courses like MBA/PGDBM
- Domain related certifications in the areas of Software languages, Infrastructure Management, Information Security etc.
- Industry related certifications in various verticals like BFSI, Telecom, and Retail etc.

One of the key objectives of the IT-ITeS SSC NASSCOM is to develop avenues for learning and skill development in the IT-ITeS Industry. In pursuit of this the SSC is planning to set up accreditation process for training providers and tailor courses on Occupational Standards that are currently being developed for the industry.

Certified training courses based on Occupational Standards will ensure standardized formal and non-formal learning opportunities that are accepted and endorsed by the industry

Qualifications, Knowledge and Understanding

Though the sourcing strategy may vary for different companies - barring a few that provide niche/specialized services- the majority hire both laterally and at Entry Level

The bulk of hiring happens at the Entry Level as organisations compete to attract the best talent from engineering colleges. While IT and Computer Science were the traditionally preferred branches, the sub-sector is now open to recruiting from other branches in engineering as well as graduates from other streams like arts, science, law and so on.

For SPD, a majority of the recruitment happens through technical graduates - Engineering institutes BCA/MCA and technical diploma holding candidates.

- Graduates with relevant certifications like Graphics and Media Designing courses, are preferred for Media/UI related tracks within Product Development.
- There is usually an advanced requirement for Occupations like Sales and Pre-sales and Products R&D where candidates with a management degree are usually preferred.
- Increasingly the focus is shifting away from 'formal education' related qualifications to having the right skills to successfully deliver the job responsibilities

Occupations like Project management, Product management, Sales and Pre-sales require additional skills for which hires with an MBA background may also be considered. Lateral hires happen for individuals having relevant experience in the industry.

What are the roles in SPD sub sector?



The job roles in the in the sub-sector have been classified and detailed as follow:

12 unique 'Occupations'

23 unique 'Tracks'

18 unique Job roles at the Entry Level

63 unique Job roles at the Middle Level

21 unique Job roles at the Leadership Level

Occupation is a set of job roles, which perform similar/related set of functions in an industry.

Tracks are a sub-set of occupations having similar set of functions under the larger gamut of the occupation they belong to

Unique Job-roles defines a set of functions that together form a unique employment opportunity in an organization

Entry Level: 0-2 yrs.

Middle Level: 2-10 yrs.

Leadership Level: >10 yrs.

Occupations and tracks within the within the IT Services Sub-sector



- Product Research and Design

Product Research and Design

- Product Packaging

Product Packaging

- Product Support

Product Support

- Product Marketing
- Product Pre-sales/Sales (includes inside sales)
- Relationship Management/Alliance

Sales and Marketing/Business Development

- Automated Testing
- Manual Testing
- QA

Testing and Quality Assurance

- Software Transition
- Transition Communication

Transition

Leading way to 'Integration and Deployment'



Integration and Deployment

Integration and Deployment involves development and implementation of solutions and coordinating applications across the enterprise or its units/departments. Professionals in this occupation are responsible for planning and managing project related activities for the integration of new hardware and software to the client site as well as migration to the desired platform.

Deployment services include activities, expertise and systems that provide the customer with proper installation and configuration of all packaged and customized Software Products. Deployment professionals are responsible for ensuring that hardware and software systems are fully deployed, implemented and functioning.

Hardware Deployment and Support: Hardware Deployment and Support roles are responsible for the installation and support of a specific hardware device. The service is focused on the device and its components rather than on the software that is running on the device. Installation activities can include hardware staging and configuration, testing and debugging, site preparation and physical installation of the device.

Software Deployment and Support: Software Deployment and Support roles are responsible for providing the customer with proper installation and configuration of all packaged Software Products as well as with appropriate ongoing support, access to resources, and distribution of software product releases, updates and upgrades.

Role of Integration and Deployment Professional

- Evaluates existing components or systems to determine integration requirements and to ensure final solutions meet organisational needs
- Reuses components when possible and assist management in buy/build decisions
- Tracks internal resources and external vendor activities to the integration of new technologies in drive hardware, drive firmware, and the factory test process to ensure successful execution in all phases of product development

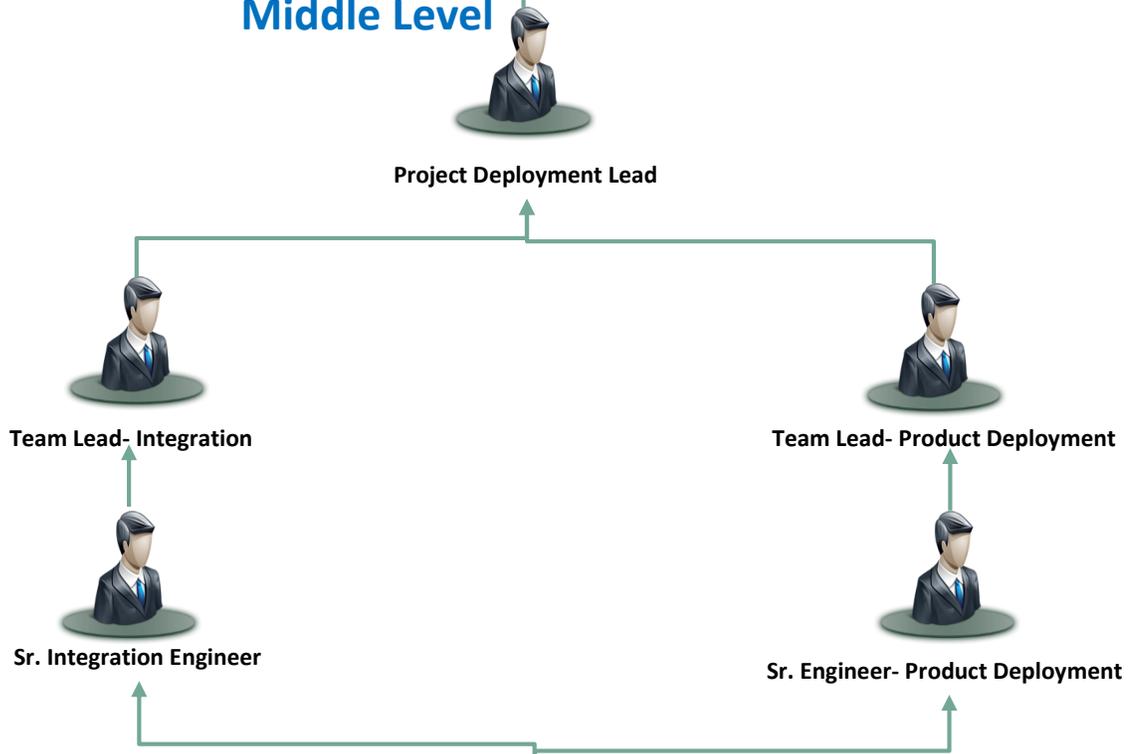
Qualifications and Skills

- BCA/MCA or Engineer with certification in relevant areas
- Knowledge of/Certifications in hardware and networking is preferred
- Experience of implementing IT projects – deployment or maintenance
- Knowledge and experience with SDLC and different methodologies
- Strong communication skills

Leadership Level



Middle Level



Support Engineer

Engineer Trainee

Entry Level

Integration (Software and Hardware)

Product Deployment

Integration and Deployment

Leading way to 'Legal'



Legal

The Legal occupation within the SPD sub-sector is responsible for drafting and maintaining licensing and commercial agreements to ensure protection of the company's intellectual property/patent. They are responsible for providing legal support for different business entities and contribute towards moulding the business strategy by highlighting the legal aspects of the options being considered.

Role of Legal Professional

- Maintains IP related databases and manage internal queries w.r.t. Product IP issues
- Prepares and/or review contracts, letters of agreement and other documents to ensure Intellectual Property (IP)/Patents legal compliance
- Provides ongoing legal counselling in the areas of intellectual property, website operations, consumer law, technology, digital media and regulatory compliance
- Manages product portfolio across the patent lifecycle

Qualifications and Skills

- Degree in Law with technical undergraduate background (Science and Engineering)
- IPR knowledge and Patent law with certification
- Excellent analytical, written and verbal skills
- Attention to detail and research abilities

Leadership Level



Middle Level



Entry Level



Leading way to 'Project/Program Management'



Project/Program Management

Project Management includes the set of activities to plan, implement, monitor, and control projects. It includes managing project financials, overseeing delivery, reporting and stakeholder management.

The scope of Project Management will vary depending on the project nature – product

design, integration or end-to-end development etc.

Program Management involves managing multiple smaller projects under the gamut of a larger 'program'

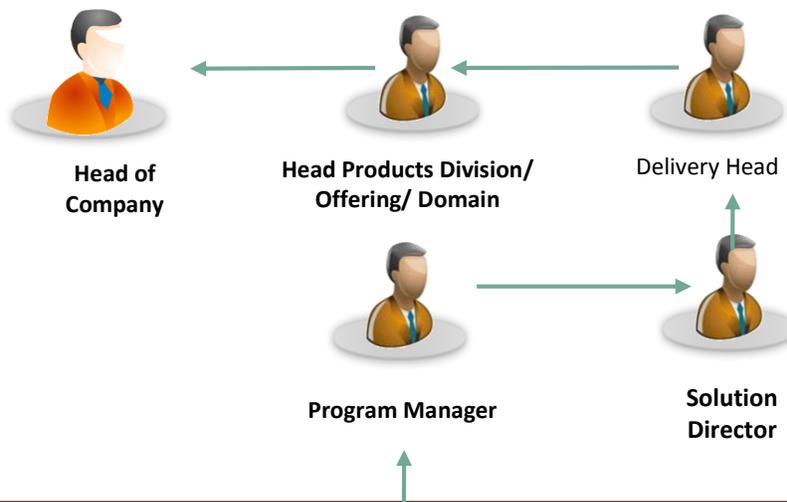
Role of Project/Program Management Professional

- Leads the planning and implementation of projects/programs
- Manages project budgets, timelines and resource allocation
- Manages implementation deadlines, quality of deliverables, communication and escalations
- Monitors, manages and reports on execution of deliverables through all program/project phases
- Manages performance reviews of resources and project
- Manages internal and external stakeholders to ensure smooth completion of project

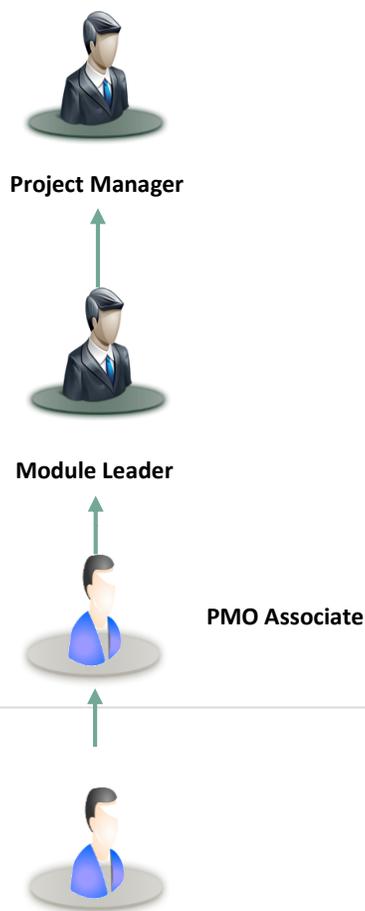
Qualifications and Skills

- Graduate/Postgraduate in any stream; B. Tech plus MBA candidates are preferred
- Experience in managing Software Products projects
- Excellent communication and presentation skills
- Strong Leadership and stakeholder management skills

Leadership Level



Middle Level



No entry-level roles for this occupation.
Entry to this occupation is usually through
Product
Development, Testing, and QA, etc. through
Product Development, Testing, and QA,
etc.

Entry Level

Project/Program Management

Leading way to 'Product Management'



Product Management

Product Management involves handling the product through the entire lifecycle – from inception to its phasing out – performing associated tasks with each phase.

Professionals in this occupation manage different versions/releases of products and support customers.

Product Management has been further divided into four key occupations:

- a) Product Lifecycle Management
- b) Product Research and Design
- c) Product Development and Delivery
- d) Product Documentation

Each of these has been described in detail followed by the Occupational Map and Career Paths for Product Management as a whole.

Product Lifecycle Management

Product Lifecycle management is the process of managing the entire lifecycle of a product from its conception, design, manufacture, service to disposal. PLM integrates people, data, processes and business systems and provides a product information backbone for companies and their extended enterprise. PLM systems help organisations to cope with the increasing complexity and engineering challenges of developing new products.

PLM roles involve, but are not restricted to research, representing and advocating products to the customers and marketplace, product market opportunity identification, competitive landscape analysis, developing partnership/ alliance opportunities with third parties, facilitating contractual, product positioning and pricing strategies.

Role of Product Lifecycle Management Professional

- Acts as an interface between various teams to provide transitions through the product lifecycle stages
- Evaluates landscape and decides on roadmap and strategy of the product
- Maintain log of product performance, client response, risk factors, regulatory compliances, opportunity etc.
- Works with Finance teams to ensure product line profitability and decide on pricing models
- Collaborates with corporate marketing to decide on marketing strategies
- Works with the Sales team to understand client requirements and gathering responses
- Communicates with the R&D team for product enhancements, initial testing etc.
- Works with internal and external stakeholders to assess partnership opportunities

Qualifications and Skills

- Postgraduate in Technology/Management related areas with graduation in technology background
- Good understanding of business operations, strong technical as well as domain knowledge
- Strong communication skills and ability to manage stakeholders

Product Research and Design

Product Research and Design involves conceptualizing and developing a product based on customer/market needs.

Professionals in these roles contribute during all aspects of software development lifecycles, including requirements analysis, design, implementation and testing.

Role of Product Research and Design Professional

- Maintain and evolves the software architecture
- Validate product for intended functionalities and quality before delivering to the customer
- Provide technical guidance/oversight towards development of new Software Products
- Design customisations of existing software to meet the business process design and application requirements
- Translate functional gaps/requirements to technical specifications for product enhancement/development

Qualifications and Skills

- BCA /MCA or Engineer with certification in relevant areas
- Strong understanding of the technical concepts and hands-on coding ability
- System thinking ability
- Strong critical thinking and troubleshooting skills

Product Development and Delivery

Product Development and Delivery is the set of functions, job roles and activities involved in the development of a software product.

It includes the development of relevant software, graphics, media and documentation required to make the product ready to be implemented and used.

Software Development roles are responsible for developing software applications as well as enhancements to existing packaged applications as part of the development of a software product.

Professionals involved in software development use specialized knowledge of software programming languages, software integration and delivery platforms to build Software Products and deliver business solutions. The job also involves application enhancement, debugging, maintenance and documentation.

Web Development: Web Development roles are responsible for designing and maintaining web-based applications including static and dynamic content. These may be standalone or work along with application/functional developers as part of the overall solution that includes a web-based component.

User Interface Development: User Interface (UI) Development roles are responsible for designing UIs for the developed application. These may be standalone or work along with application/functional developers to include specific functionalities in the UI as part of the overall solution.

Media Development: Media Development roles are responsible for designing and improving the look and feel, functionality and graphic appeal of the developed application. These may work standalone or along with application/functional developers to improve the aesthetics of the application being developed.

Role of Product Development and Delivery Professional

- Captures data and translate and transform it into a processing language
- Develops codes from relevant information, and perform the tasks required for scheduling, processing and monitoring them
- Tracks all defects and provides bug fixes
- Media developers, Web developers and UI developers use software to develop front-end applications with smart graphics and enhanced look and feel and usability features

Qualifications and Skills

- Product Developers in the identified tracks require significantly different entry level qualifications and skills
- Software Developers, Functional Developers and UI Developers** require relatively higher end qualifications and skills:
 - BCA/MCA or Engineer with certification in relevant areas
 - Problem solving and strong analytical capability
 - Knowledge of programming logic and SDLC is essential
 - Functional skills like software languages (Java, C/C++, dot net, Perl) are highly essential for professionals in the Software/Functional Development tracks
- Media and Web Developers:**
 - Any graduate/diploma course with a specialist training program in Media designing; for a relevant skill, even undergraduate candidates are eligible
 - Knowledge of programming logic and SDLC is desirable
 - Creative thinking and attention to detail are the key skills for these roles

Product Documentation

Product Documentation involves understanding the audience and developing a range of documentation including technical manuals, user manuals, help documents and training material in order to meet specific transition/education needs.

Product Documentation is usually the last set of activities in the Product Development and Delivery process and aims to capture the technical and usability related specifications of the developed product.

Technical writing/Documentation: Technical writing roles are responsible for creating technical documentation related to an application; for example, job aids, help documents and training materials. These documents serve the core purpose of transferring knowledge between the application development teams and the user teams.

Translation: Translation roles are responsible for translating software applications into end-user languages. These extend beyond regular translator roles as they require understanding of the software languages and platforms.

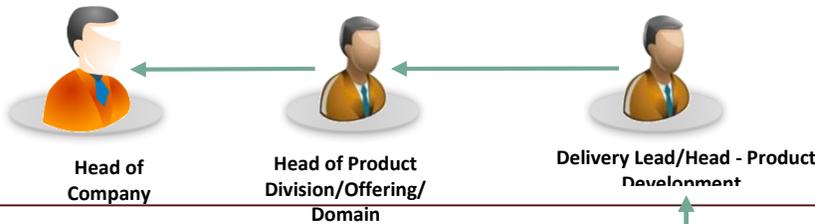
Role of a Product Documentation Professional

- **Language translator**
 - Works to translate codes in multiple end languages. For example translating Microsoft Windows into local Indian languages. With the advent of Uni-code compliant applications, this role is slowly becoming obsolete
- **Technical Writer**
 - Creates job aids and other technical documents, highlighting specifications and usability features of the applications developed
 - Provides product development, design and marketing documentation support

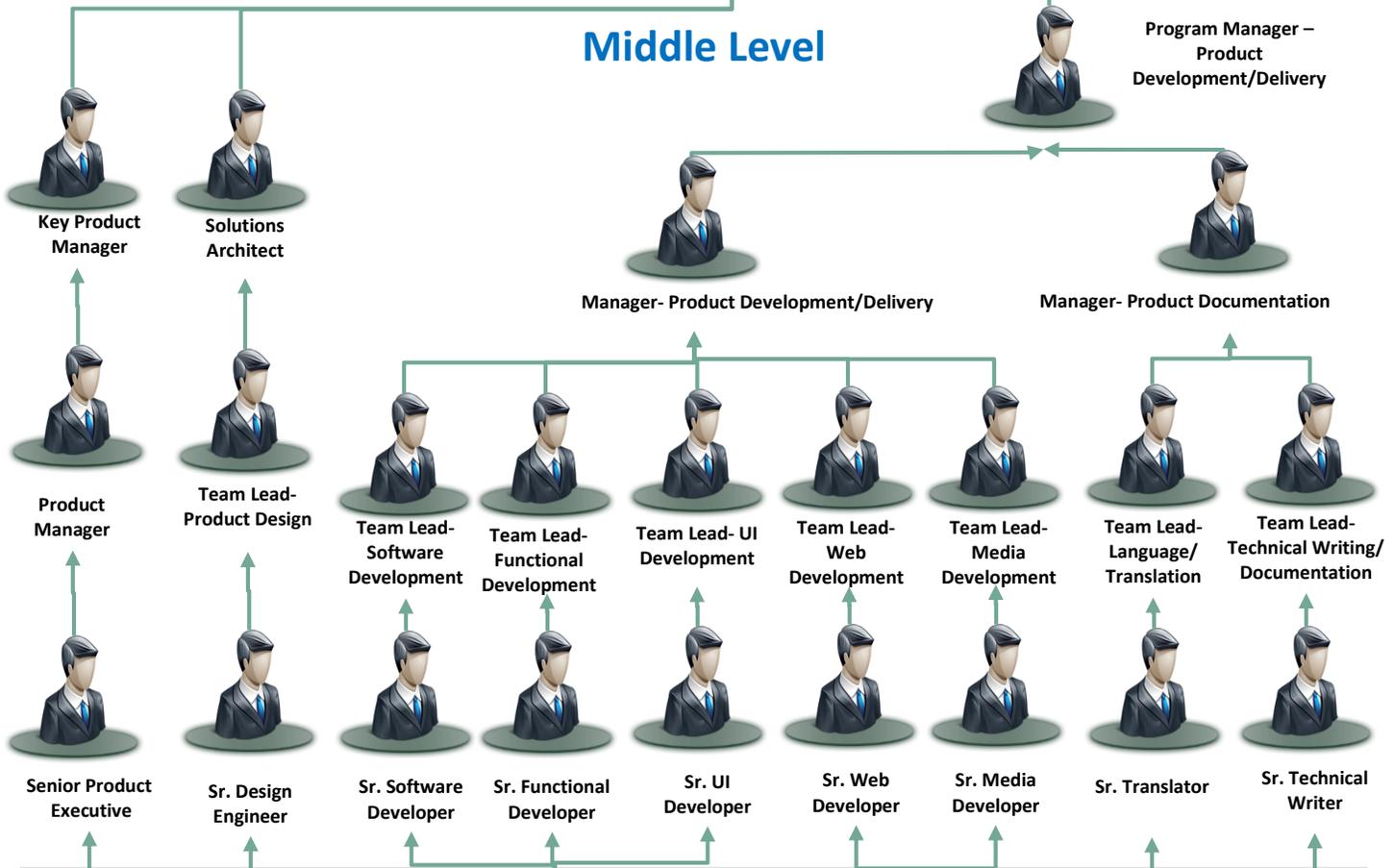
Qualifications and Skills

- **Technical writing/Documentation**
 - Any graduate/diploma course; for a relevant skill, even undergraduate candidates are eligible
 - Knowledge of programming logic and SDLC is desirable
 - Attention to detail and accuracy are the key skills for these job roles.
- **Language/Translation**
 - Any graduate/diploma course; for a relevant skill, even undergraduate candidates are eligible
 - Knowledge of programming logic and SDLC is desirable
 - Certified language courses

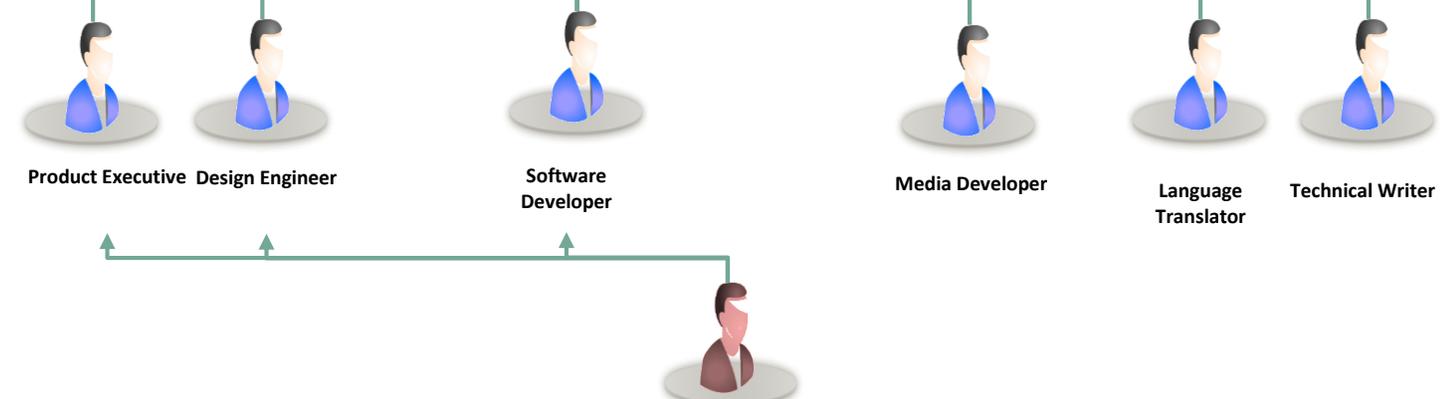
Leadership Level



Middle Level



Entry Level



Product Lifecycle Management Product Research and Design Software Development Functional Development UI Development Web Development Media Development Language/ Translation Technical Writing/ Documentation

Leading way to 'Product Packaging



Product Packaging

Product Packaging involves creating a new, company-specific or industry vertical-specific image of a software product before releasing it. The benefits are easier implementation,

reduced customizations efforts and lower total cost of ownership.

It could also involve adding a collection of related application or utility software.

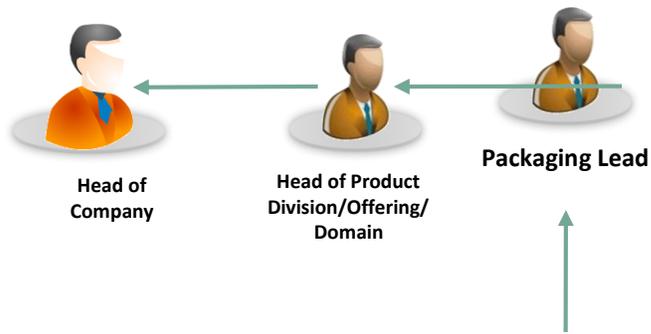
Role of Product Packaging Professional

- Adds company-specific or industry vertical-specific features and functionalities.
- Tests, fixes and packages software packages with integrated software packaging tools for error-free deployments
- Optimises packaging time
- Prepares software for deployment

Qualifications and Skills

- Knowledge of company and industry vertical
- Good understanding of software engineering and development using SDLC methodology
- Creativity and out-of-the box thinking are essential for these roles
- Excellence in oral and written communications skills

Leadership Level



Middle Level



Entry Level

Product Packaging

Leading way to 'Product Support'



Product Support

Product Support includes help-desk services and desk-side support. Customer Relationship Management (CRM) entails all aspects of interaction that a company has with its customer, whether sales or service-related, through any media. It is primarily the process of managing and resolving all client queries and issues.

Product Support professionals form the primary layer of contact with the customer. They are required to have a broad understanding of the industry and domain as well as the product and services portfolio to aid and enable quick and effective resolution of queries

Customer Care (Non-Voice) - email & chat: The professionals engaged in this occupation perform query resolution and customer care over web-chat or email. Responses may be made on either pre - existing email templates or may be framed mails customized to the requirement of the query. For slightly complex queries/situations, this may require greater interaction.

Customer Care (Voice): This activity involves managing and resolving client queries/issues primarily through telephonic calls. They are required to resolve queries and direct unresolved queries to the appropriate group. These professionals are required to have a broad understanding of all the products/services portfolio of the organization to aid in responding to queries. An illustrative list of this process may include companies across sectors like banking, financial institutions, insurance firms, hardware/software vendors, utilities, travel & tourism, automotive etc.

Role of Product Support Professional

- Provides client support and resolves technical issues through phone, email or other electronic media
- Maintains complaint logs accurately and escalates critical issues that need resolution from other teams
- Monitors, gathers information and tracks resolution of complaints
- Maintains and updates knowledge of the products through knowledge base articles

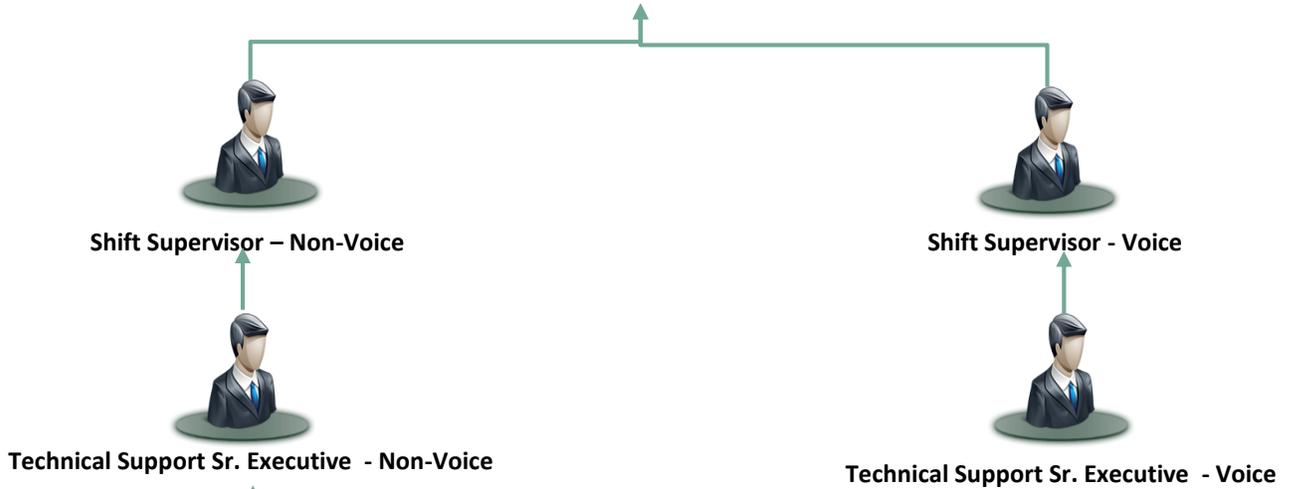
Qualifications and Skills

- Graduate/PGs/Diploma holders equivalent to graduates from any discipline
- Engineers from other non IT related streams like Agriculture and Civil are also considered
- Strong verbal and written communication skills
- Ability to understand requirements as well as analyse and interpret technical procedures and knowledge articles to apply for resolving customer queries

Leadership Level



Middle Level



Entry Level

Product Support

Leading way to 'Sales and Marketing/ Business Development



Sales and Marketing/Business Development

Sales and Marketing/Business Development generates and develops business for the organization. This involves developing business relationships, marketing, managing brands and driving sales for the organization.

These professionals develop a go-to-market strategy with entity Leadership and OU/Industry leads for assigned territories and the Strategic Accounts within it. This could include build-outs for inside sales, field marketing and alliance activities

Product Marketing involves detailed market research to create product backlog or product funnel. The professionals working in this profession gather data and undertake exhaustive analysis including competitive analysis, to gather intelligence and provide inputs to teams involved in design, manufacturing or management of product lifecycle

Pre-sales and Sales professionals develop and present technical products and services of an organization to customers. They ensure the customers get a clear understanding of the technical capabilities the product and organization can provide, technical questions are answered and the presentation approach demonstrates the technical excellence of the organization. In the Software Products sub-sector, this includes the set of activities from pre-bid stage leading to the conclusion of the bidding process. Pre-sales teams collaborate heavily with Delivery teams to prepare the solution and bring in industry perspective

Relationship Management/Alliance Management: Relationship management involves developing and maintaining relationships with key clients to ensure development and implementation of plans, resources and processes for the effective delivery of services. This requires proven project management skills. Relationship management also covers change management, contract management and customer loyalty with the aim to maximize business opportunities. The Alliance Management part covers managing these relationships with key alliance partners like ERP vendors and product organisations to co-develop sales relationships

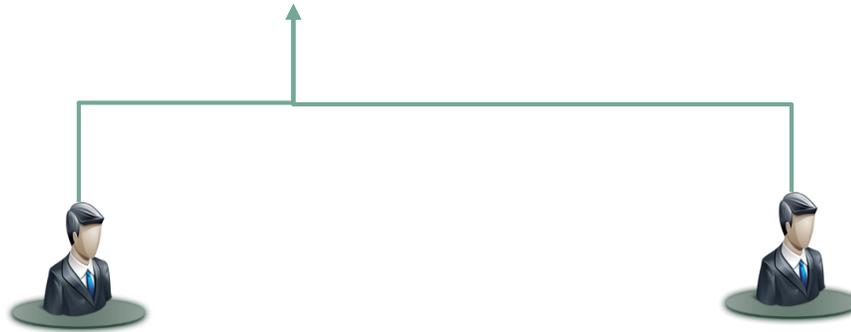
Role of Sales & Marketing/Business Development Professional

- Gathers information about new/changed technical offerings from Business Model & Strategy and Technology Integration and summarises as per client requirements
- Manages alliances and relationships with sales partners like ERP product organisations
- Develops demonstrations of the technical and functional capabilities of the organisation to develop sales
- Supports key accounts by conducting demonstrations and defining special agreements with the clients
- Provides inputs about client requirements to product development teams

Qualifications and Skills

- Postgraduate in Technology/Management related areas with graduation in Technology areas
- Graduates can move laterally into pre-sales and sales after developing experience and requisite skillset
- Good command over English language
- Action orientation and a go-getter spirit are the key skills needed in a pre-sales and sales profile

Leadership Level



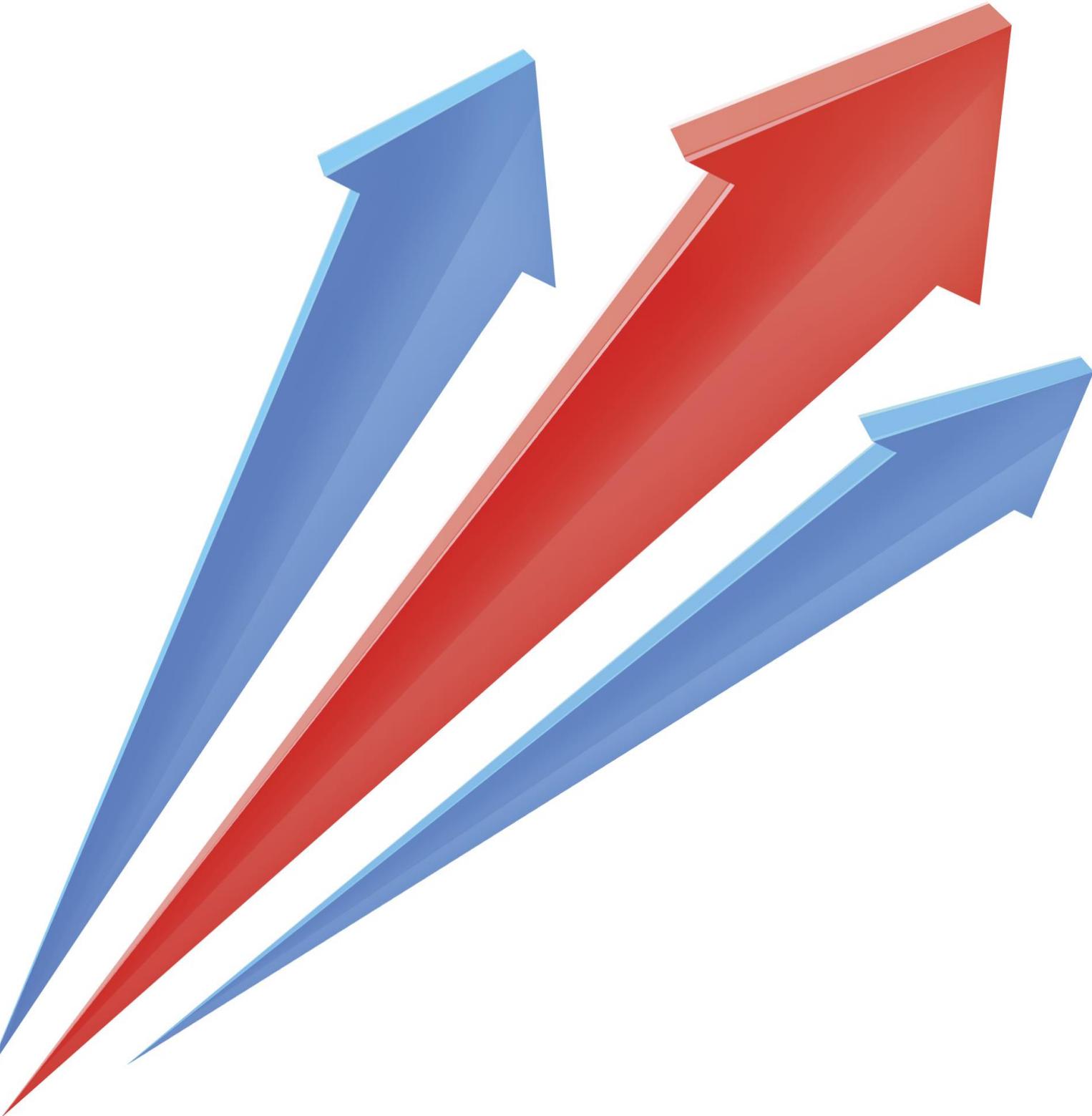
Middle Level



Entry Level

Sales and Marketing/Business Development

Leading way to 'Testing and QA'



Testing and Quality Assurance (QA)

Testing and QA includes conducting scheduled

and unscheduled tests in the areas of Integration, Performance and Application etc. Testing and QA professionals act as the final check between the solution developed by the Application Developers and go-live.

Depending upon the structure of the organization, QA professionals may be responsible only for laying out Quality Assurance processes and programs like TQM, ISO etc. QA teams conduct periodic audits and drive compliance

Functional Testing: Functional Testing roles are responsible for testing the software/products as end-users. They test all functional features of the product without evaluating its internal structure to ensure desired results. They do not understand internal code or design and typically do not resolve them as well.

Technical Testing: Technical Testing roles develop and automate test cases. They understand the internal code and workings of the software or product and can resolve and fix bugs. These roles require extensive knowledge of the software language to ensure that they detect and in some cases, resolve the bugs.

Quality Assurance (QA): QA roles are responsible for setting quality standards for products, systems and processes within the organization. These implement quality norms like TQM, ISO etc. and conduct audits and compliance related activities. Depending upon the organization, they may be responsible for conducting a final quality check on every application that is delivered to the client.

Role of Testing and QA Professional

- Develops and coordinate test plans
- Checks documents, reports and tracks for software defects manually using testing software
- Conducts software compatibility tests with programs, hardware, operating systems, or network environments

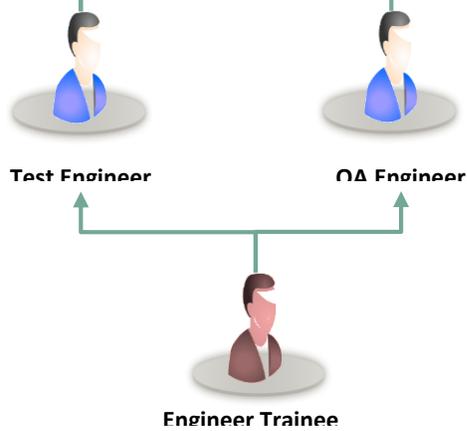
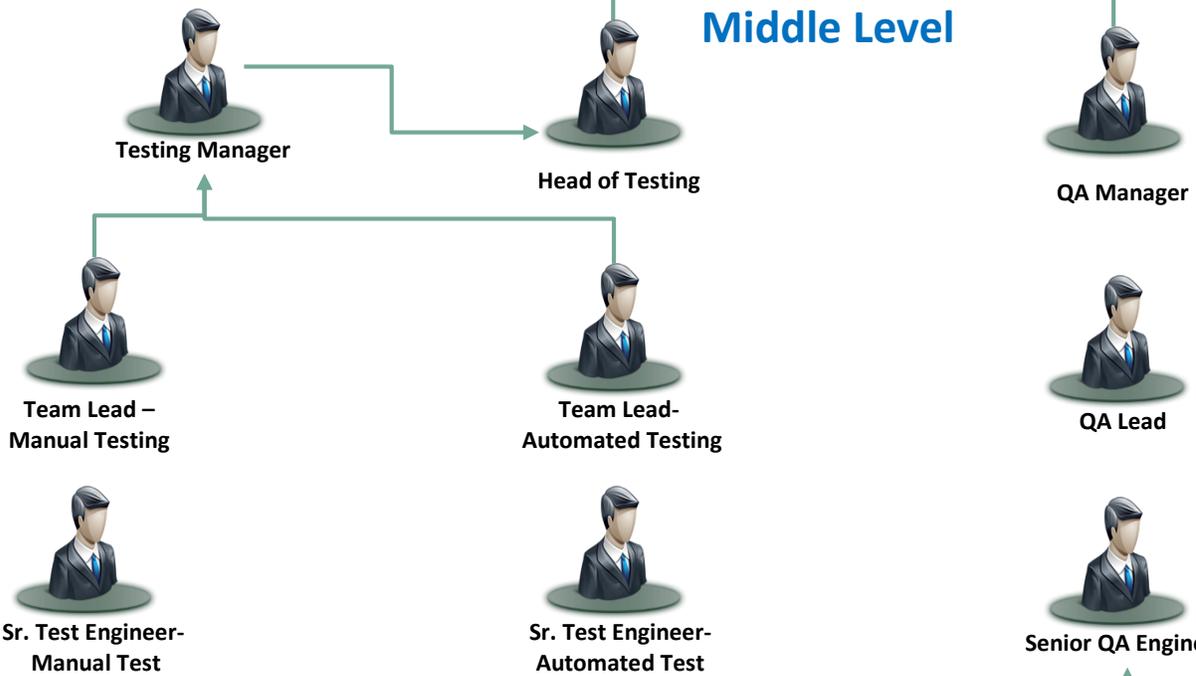
Qualifications and Skills

- BCA/MCA or Engineer with certification in relevant areas
- Strong communication skills – written and verbal
- Attention to detail and perseverance are the key skills to success at Testing roles

Leadership Level



Middle Level



Entry Level

Testing and QA

Leading way to 'Transition'



Transition

Transition involves the shifting or phasing out of one process and the implementation of another. Transition professionals are involved in the phasing out strategy creation, change management for implementing new products and the intended communication to all stakeholders.

Role of Transition Professional

- Scopes requirements and estimates efforts required for transitions
- Develops and implements the transition plan
- Defines roles and responsibilities of all stakeholders involved in transition
- Creates checklists and plans to handle contingencies
- Manages internal and third party stakeholders
- Develops communication plans for external and internal stakeholders

Qualifications and Skills

- Postgraduate in Technology/Management related areas with graduation in Technology areas
- Good understanding of software engineering and development using SDLC methodology
- Excellence in oral and written communications skills

Leadership Level



Head of Transitions

Middle Level



Project Transition Lead



Team Lead- Software Transition



Team Lead- Communications



Sr. Engineer- Software Transition



Sr. Associate Communications



Engineer- Software Transition



Communications Analyst



Engineer Trainee

Entry Level

Transition

Movement to Other Occupations, Sub-sectors and Industries

Software Products sub-sector and the occupations within, provide ample opportunities for movement outside the core occupation.

Individuals can move freely in 'related' occupations within the sub-sector at a similar level by displaying the relevant skillset. The level of joining varies highly with the organization. While some organisations ensure parity in terms of providing similar vertical level role others have defined Entry Level criteria for specific occupations.

For example: an individual, from a Team- Lead Software Development willing to move to Sales and Pre-sales may join at a Sales and Pre-sales Executive or Sales Manager depending upon the organization's grade structure

The horizontal career movements from one occupation to another occupation within the sub-sector, to another sub-sector or to another industry occurs typically at Middle or Leadership levels after a professional has acquired expertise in one particular occupation or more than one related occupations at Entry Level.

A detailed map indicating possible career movements to related occupations sub sectors and industries have been highlighted on the following page:

Occupation	Horizontal Movements		
	To other Occupations	To other sub-sectors	To other Industries
Integration and Deployment	Product Lifecycle management, Testing and QA, Product Packaging	ITS, BPM, ERD	IT specific roles in any industry
Legal	NA	ITS, BPM, ERD	Legal roles in any industry esp. BFSI, Media, Telecom etc.
Project Documentation	Product Support	ITS, BPM, ERD	IT specific roles in any industry
Product Development and Delivery	Product Lifecycle Management, Project Management, Sales and Pre-sales, Testing and QA, Integration and Deployment, Product Support	ITS, BPM, ERD	IT specific roles in any industry
Project Management/ Program Management	Sales and Pre-sales, Product Lifecycle Management, Product Development and Delivery, Product Packaging	ITS, BPM, ERD	All Services Industries
Product Lifecycle Management	Sales and Pre-sales, Project Management, Project Development and Delivery	ITS, BPM	FMCG, Telecom
Product R&D	Product Packaging, Integration and Deployment	ERD, BPM	IT specific roles in any industry
Product Packaging	NA	BPM, ERD	Marketing roles in a product focused industry
Product Support	IT Consulting , Project Management, Sales and Pre-sales, Testing and QA, Application Outsourcing, Hardware Deployment, Application Deployment, IT Support Services, Information Security	SPD, BPM, ERD	Infrastructure department in all industry. Esp. Media, Telecom, BFSI etc.
Sales and Marketing/Business Development	Product Lifecycle Management ,Product R&D, Product Support	ITS, BPM, ERD	Sales and Pres-sales in all industries
Testing & QA	Product Lifecycle Management, Project Management, Sales and Pre-sales, Product Development and Delivery, Integration and Deployment, Product Support	SPD, BPM, ERD	IT specific roles in any industry
Transition	Integration and Deployment, Testing and QA	ITS, BPM	IT specific roles in any industry

What are the success stories in SPD?





Narasingha Panigrahi
Principal Consultant, SAP Labs

Entry to IT-ITeS Industry

In 2005 I joined Tech Mahindra as a graduate hire, I joined in the position of a Technical Associate. At Tech Mahindra I was able to improve and get the best of training in both the skills. This provided me with a perfect platform to launch my professional career.

Certifications and Trainings

Although I did not do any certifications I undertook trainings in various technologies like Siebel CRM, Siebel Incentive and Compensation Management, SAP ABAP, SAP Workflows, SAP CRM in addition to other trainings.

Career Movement and Growth

During my initial days at Tech Mahindra I got trained in multiple technologies, but finally started working on projects as a Siebel CRM consultant. I got an opportunity to move to SAP CRM. I was able to ramp up quickly as a SAP CRM technical consultant. 2 and half years later, I joined SAP CRM Deloitte in 2008 as a Senior Analyst During my stay in Deloitte I worked in multiple projects and was able to grow as a SAP CRM expert.

In August 2008 I moved to IBM as a Package Solution Consultant and further enhanced my skills as a SAP CRM. After spending 3 and half years in IBM I moved to SAP in 2012 as a Principal Consultant where I am working currently.

Learnings for people looking forward to enter the IT-ITeS Industry

- Confidence in own abilities and willingness to take on challenges
- Work Life balance is important
- Passion



Ravtish Sharma
Area Manager, DELL

Entry to IT-ITeS Industry

After completing BE electronics from Pune University in 1998, I started working with Modular systems making power supplies as a trainee, there after I switched over to ADG technologies which was into software development. I joined Dell in 2001 at Bangalore as TSR and since then have worked across all Dell sites in India in various roles.

Presently I am working as Area Manager for India Tech Support process at Gurgaon.

Certifications/Trainings Undertaken

Dell BPI Green Belt Certification

CBI Certification

Career Movement and Growth

Worked as an effective team player and participated in all activities relating to the team. Maintained healthy competition amongst team across the floor and excelled in all areas.

I was responsible for handling a team of highly charged and motivated Team members at Bangalore. I was pivotal in assessing the individual team member's performance against the deliverables. I was made responsible for bigger teams, driving Process improvement strategies, monitoring and auditing the deployed processes for effectiveness and efficacy and preparing performance reports.

Instrumental in transitioning the Entire L2 Process at Dell Hyderabad, 24/7 Chennai and Dell Chandigarh. Part of the Standardization Process - a key initiative run across all Dell sites. Running six sigma methodologies to fix the issues. Worked for Global Deployment of Windows

Learnings for people looking forward to enter the IT-ITeS Industry

- Analyze your options.
- Seek counsel of mentors and others both inside and outside organization.
- Never take a job based solely on pay or promotion.

LIPI DAS

System analyst, ANZ technologies and operation

Entry to IT-ITeS Industry

I joined Infosys Technologies Ltd in Oct 2005 after completing my B.Tech as a Software Engineer. As a part of my role as a functional teste , I was involved in functional testing of asset products, impact analysis and follow up with product team for fixing of the functional issues. Later I was a part of the customization team and was involved in discussing functional and customization requirements of Finacle with the clients.

Certifications/Trainings Undertaken

Internal Certifications in Basic banking fundamentals.

Career Movement and Growth

In August 2012, I joined ANZ Technology and Operations as a System Analyst. I am a part of the Transaction Banking team and my role involves preparation of Business Requirements Documents and specifications for business requirements which is further an input for estimates and technical build and testing. Having started as a software engineer and tester in functional design team in Finacle in Infosys Technologies. I have grown into a Business Analyst role and am looking forward to grow in this direction as a domain expert

Learnings for people looking forward to enter the IT-ITeS Industry

- Business is the driving force for any industry and exploring the domain space more and more helps to grow professionally apart from technical expertise or skills of a person.
- Even after spending 7 yrs. in Banking domain, the fact that there is still huge opportunity and space to explore more is the factor that still drives me in the industry.

