Great Careers Here, Look No Further

Career Guide - Software Products
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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 technologically advanced and a knowledge-based economy. The Industry has provided great careers to young aspirants and currently employs nearly 3 million people.

Today, the IT-BPM industry is standing at a watershed moment in history. In FY 2012, the industry achieved a stellar landmark of crossing USD 100 billion in revenues. The market potential of Software Products (SPD) and its impact on others and industries is significant. The SPD and the OSPD sub-sector has grown by almost two times in the last five years to record an estimated revenue of USD 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 characterised by business volatility. Growth in the IT-BPM industry is based on your performance, skills and hard work.

What attracts these million plus people to this industry? Why should you consider the IT-BPM 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.

We hope you will be part of our industry pursuing a career of your choice.

Best wishes,

Som Mittal
President
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What is the Overview of the IT-BPM Industry?
The IT-BPM 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 technologically advanced and a knowledge-based economy. Growth of the IT-BPM 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 capitalists and has been credited with enabling the entrepreneurial ventures of many, in the country. The IT-BPM 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-BPM Industry

The organisations within the IT-BPM Industry are categorised along the following parameters:

- Sector the organisation is serving
- Type as well as range of offering the organisation 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 below:

**Multi-national Companies (MNCs):** MNC organisations 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 (ISPs):** ISPs are organisations that have started with their operations in India. Most of these organisations 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 focussed on serving only the Indian clients.
Global In-house Centres (GIC): GIC organisations cater to the needs of their parent company only and do not serve external clients. This model allows the organisation 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.

IT Services (ITS)
- Custom Application Development (CAD)
- Hardware Deployment and Support
- Software Deployment and Support
- IT Consulting
- System Integration
- Information Systems (IS) Outsourcing
- Software Testing
- Network Consultation and Integration
- Education and Training

Business Process Management (BPM)
- Customer Interaction and Support (CIS)
- Finance and Accounting (F&A)
- Human Resource Management (HRM)
- Knowledge Services
- Procurement and Logistics

Engineering and R&D (ER&D)
- Embedded Services
- Engineering Services

Software Products (SPD)
- Offshore Product Development
- Onshore Product Development
What is the SPD Sub-Sector?
Introduction to the SPD Sub-Sector

Software Products are programmes 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 life-cycles – is referred to as the Software Products sub-sector.

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

The Indian SPD market including OSPD is small when compared to the IT services and BPM sub-sectors of the IT-BPM-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 an estimated revenue of USD 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-BPM sub-sector globally, generating revenue of USD 278 billion in 2012 through package software products only. This is also reflected in the Indian domestic market where the average growth of this industry has been in double digits with 14 per cent in INR terms for FY 2013. While the product development exports segment has a revenue size exceeding USD 1.6 billion, the offshore market is estimated at USD 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.

**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.

**Service Offering/Horizontal Profile:** The industry started with performing work around support and gradually evolved to covering other stages of the product life-cycle, such as testing and providing professional services. The industry has now evolved, with the capability as well as demand for serving the entire product life-cycle, including R&D, product conceptualisation 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-BPM Industry in general, with the USA being the dominant market and the US and Europe combining to provide over 8 per cent 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 conceptualised 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 life-cycle 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.

²THE 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-BPM 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 realised 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 specialised areas like Product Conceptualisation 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 focussing on one or a limited aspect of the product development life-cycle, companies as well as customers are now realising advantages of the parent company owning the product life-cycle – 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 charting out the organisation'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 licence-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 organisations 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 organisation 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 specialised 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 pre-requisite 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 Skill Requirements:
- Good Communication Skills
- Analytical Skills
- Problem Solving Ability
- Creativity and out-of the box Thinking
- Working with Influence

Key Functional Skill 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 programmes 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 organisation 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-BPM Industry. In pursuit of this, the SSC is planning to set up accreditation process for training providers and tailoring courses on Occupational Standards that are currently being developed for the industry.

Certified training courses based on Occupational Standards will ensure standardised 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/ specialised 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 the SPD Sub-Sector?

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The job roles 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

Occasion 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 organisation.

Entry Level: 0-2 yrs.
Middle Level: 2-10 yrs.
Leadership Level: >10 yrs.
Occupations and tracks within the IT Services Sub-Sector

Integration and Deployment
- Integration (Software and Hardware)
- Product Deployment

Legal
- Legal

Product Documentation
- Technical Writing/Documentation
- Language Translation

Product Development and Delivery
- Software Development Management
- Functional Development
- UI Development
- Media Development
- Web Development

Project/Program Management
- Product Lifecycle Management

Product Research and Design
- Product Research and Design

Product Packaging
- Product Packaging

Product Support
- Product Support

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

Testing and Quality Assurance
- Automated Testing
- Manual Testing Development
- QA

Transition
- Software Transition
- Transition Communication
Occupation: 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 customised 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 focussed 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 assists 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
Career Map for Integration and Deployment

Leadership Level
- Head of Company
- Head Products Division/Offering/Domain
- Head-Integration and Deployment
- Project Deployment Lead
  - Team Lead-Integration
  - Team Lead-Product Deployment
  - Sr. Integration Engineer
  - Sr. Engineer-Product Deployment

Middle Level
- Support Engineer (SSC/Q 6101)
  - Engineer Trainee (SSC/Q 0507)

Entry Level
- Integration (Software and Hardware)
- Product Deployment

Tracks

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Occupation: **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 manages internal queries with respect to Product IP issues
- Prepares and/or reviews 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 Life-cycle

### 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
Career Map for Legal

- Head Legal
- Head Product IP
- Manager IP
- IP Consultant
- Sr. IP Executive
- IP Executive (SSC/Q 6201)
- Legal

Leadership Level
Middle Level
Entry Level
Occupation: **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
Career Map for Project/Program Management

Entry Level

- Project/Program Management
- PMO Associate
- Module Leader
- Project Manager
- Program Manager
- Solution Director
- Head Products Division/Offering/Domain
- Delivery Head
- Head of Company

Middle Level

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

Leadership Level

- Track
Occupation: **Product Management**

Product Management involves handling the product through the entire Life-cycle - 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 life-cycle of a product from its conception, design, manufacture, service to disposal. P.M. integrates people, data, processes and business systems and provides a product information backbone for companies and their extended enterprise. P.M. systems help organizations to cope with the increasing complexity and engineering challenges of developing new products.

P.M. 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 life-cycle stages  
- Evaluates landscape and decides on roadmap and strategy of the product  
- Maintains log of product performance, client response, risk factors, regulatory compliances, opportunities, 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
Product Research and Design

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

Professionals in these roles contribute during all aspects of software development life-cycles, 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
- Translates 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 specialised 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 performs 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

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
Occupation: **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 customisation 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 communication skills
Career Map for Product Packaging

- Head of Company
- Head Products Division/Offering/Domain
- Packaging Lead
- Principal Consultant-Packaging
- Packaging Consultant
- Packaging Specialist
- Engineer Packaging (SSC/Q 6901)
- Product Packaging
Occupation: **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 customised 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 organisation 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-based 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
Career Map for Product Support

Entry Level:
- Product Support

Middle Level:
- Technical Support
- Sr. Executive - Non-Voice
- Technical Support Executive - Non-Voice (SSC/Q 7201)
- Technical Support Executive - Voice (SSC/Q 7202)
- Technical Support Sr. Executive - Voice

Team Lead - Customer Support:
- Shift Supervisor - Voice
- Shift Supervisor - Non-Voice
- Technical Support Sr. Executive - Non-Voice

Head Product Support:
- Product Support Lead

Leaderhip Level:
- Head Products Division/ Offering/ Domain
- Head of Company
Occupation: Sales and Marketing/ Business Development

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

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 life-cycle.

Pre-sales and Sales professionals develop and present technical products and services of an organisation to customers. They ensure the customers get a clear understanding of the technical capabilities the product and organisation can provide, technical questions are answered and the presentation approach demonstrates the technical excellence of the organisation. 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 maximise 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
- 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

- Post-graduate in Technology/ Management related areas with graduation in Technology areas
- Graduates can move laterally into pre-sales and sales after developing experience and requisite skills set
- Good command over English language
- Action orientation and a go-getter spirit are the key skills needed in a pre-sales and sales profile
Career Map for Sales and Marketing/ Business Development

Leadership Level
- Head of Sales
- GU Sales Lead
- Regional BD/Sales Lead
  - Senior Product Marketing Manager
  - Pre-Sales/Sales Manager
  - Market Research Associate (SSC/Q 6302)
  - Management Trainee (SSC/Q 6301)
- KAM-Key Account/Alliance Manager
  - Sr. Manager-Pre-Sales/Sales
  - Pre-Sales/Sales Executive (SSC/Q 6303)
  - Sr. Manager-Customer Relationship
  - Customer Relationship/Alliance Manager

Middle Level
- Product Marketing Manager
- Sales/Pre-Sales Executive (includes inside sales)

Entry Level
- Product Marketing
- Product Pre-Sales/Sales

Tracks
Occupation: 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 organisation, QA professionals may be responsible only for laying out Quality Assurance processes and programmes 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 organisation. These implement quality norms like TQM, ISO, etc. and conduct audits and compliance-related activities. Depending upon the organisation, 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 coordinates test plans
- Checks documents, reports and tracks for software defects manually using testing software
- Conducts software compatibility tests with programmes, hardware, operating systems, or network environments

Qualifications and Skills

- BCA/ MCA or Engineer with certification in relevant areas
- Strong communication skills – written and verbal
- Good command over English language
- Attention to detail and perseverance are the key skills to success at Testing roles
Occupation: 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 communication skills
Career Map for Transition

Leadership Level

- Head of Company
- Head Products Division/Offering/Domain
- Head of Transitions
- Project Transition Lead

Middle Level

- Team Lead-Software Transition
- Sr. Engineer-Software Transition
- Engineer-Software Transition (SSC/Q 7101)
- Engineer Trainee (SSC/Q 0507)
- Software Transition

- Team Lead-Communications
- Sr. Associate Communications
- Communication Analyst (SSC/Q 7102)
- Transition Communication

Entry Level

Source: NASSCOM Research

Career Guide - Software Products
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 skill-set. The level of joining varies highly with the organisation. 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 organisation'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-sector and industries have been highlighted on the following page.
<table>
<thead>
<tr>
<th>Occupation</th>
<th>Horizontal Movements</th>
<th>To other Sub-Sectors</th>
<th>To other Industries</th>
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<tbody>
<tr>
<td>Integration and Development</td>
<td>Product Lifecycle Management, Testing and QA, Product Packaging</td>
<td>ITS, BPM, ERD</td>
<td>ITS specific roles in any industry</td>
</tr>
<tr>
<td>Legal</td>
<td>NA</td>
<td>ITS, BPM, ERD</td>
<td>Legal roles in any industry esp. BFSI, Media, Telecom Etc.</td>
</tr>
<tr>
<td>Project Documentation</td>
<td>Product Support</td>
<td>ITS, BPM, ERD</td>
<td>IT specific roles in any industry</td>
</tr>
<tr>
<td>Product Development and Delivery</td>
<td>Product Lifecycle Management, Project Management, Sales and Pre-Sales Testing and QA, Integration and Development, Product Support</td>
<td>ITS, BPM, ERD</td>
<td>IT specific roles in any industry</td>
</tr>
<tr>
<td>Project Management/Program Management</td>
<td>Sales and Pre-sales, Product Life cycle Management, Product Development and Delivery, Product Packaging</td>
<td>ITS, BPM, ERD</td>
<td>All Services Industries</td>
</tr>
<tr>
<td>Product Lifecycle Management</td>
<td>Sales and Pre-Sales, Project Management, Project Development and Delivery, Product Packaging</td>
<td>ITS, BPM</td>
<td>FMCG, Telecom</td>
</tr>
<tr>
<td>Product R&amp;D</td>
<td>Product Packaging, Integration and Development</td>
<td>ERD, BPM</td>
<td>IT specific roles in any industry</td>
</tr>
<tr>
<td>Product Packaging</td>
<td>NA</td>
<td>BPM, ERD</td>
<td>Marketing roles in a product focussed industry</td>
</tr>
<tr>
<td>Product Support</td>
<td>IT Consulting, Project Management, Sales and Pre-sales, Testing and QA Application Outstanding, Hardware Deployment, Application IT Support Services, Information Security</td>
<td>SPD, BPM, ERD</td>
<td>Infrastructure department in all industry, ESP, Media, Telecom, BFSI, etc.</td>
</tr>
<tr>
<td>Sales and Marketing/ Business Development</td>
<td>Product Life-cycle Management, Project Management, Product R&amp;D, Product Support</td>
<td>ITS, BPM, ERD</td>
<td>Sales and Pres-sales in all industry</td>
</tr>
<tr>
<td>Testing &amp; QA</td>
<td>Product Lifecycle Management, Project Management, Sales and Pre-sales, Product Development and Delivery, Integration and Deployment, Product Support</td>
<td>SPD, BPM, ERD</td>
<td>IT specific roles in any industry</td>
</tr>
<tr>
<td>Transition</td>
<td>Integration Deployment, Testing and QA</td>
<td>ITS, BPM</td>
<td>IT specific roles in any industry</td>
</tr>
</tbody>
</table>
Some Success Stories in the SPD Sub-Sector
Entry to IT-BPM 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. Two 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 three 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-BPM INDUSTRY

- Confidence in own abilities and willingness to take on challenges
- Work life balance is important
- Passion
Entry to IT-BPM INDUSTRY
After completing BE electronics from Pune University in 1998, I started working with Modular systems making power supplies as a trainee. Thereafter, 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 and Trainings
- 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 Standardisation 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-BPM INDUSTRY
- Analyse your options.
- Seek counsel of mentors and others both inside and outside organisation.
- Never take a job based solely on pay or promotion.
Entry to IT-BPM 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 tester, 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 customisation team and was involved in discussing functional and customisation requirements of Finacle with the clients.

Certifications and Trainings

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-BPM 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.