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FORTÉ INDUSTRY SNAPSHOT:

GUIDE TO BUSINESS ROLES IN THE

# TECHNOLOGY INDUSTRY



Forté

More Women Leading



Find Your Future in

# TECHNOLOGY



The \$4.5+ trillion technology industry is ever-changing. It offers a vast number of non-engineering opportunities for people who demonstrate a digital mindset and a passion for technology as well as a strong business acumen and core analytical, communication, and teamwork skills.

The goal of this primer is to demystify the technology industry, provide a roadmap to potential career paths, and explain some of the technology industry's jargon. This overview will provide a foundation from which you can begin exploring career opportunities at technology firms and the recruiting processes for these positions.

As you will find while reading this overview, there are a variety of functional opportunities available to you within the technology industry. Depending on your chosen path, you will build skills, drive innovation, and see the tangible impact of your efforts while working with talented colleagues in companies known for fun perks.

# HERE AND THERE— TECH IS EVERYWARE

## Industry Overview

The technology industry encompasses a wide range of companies that provide research, development and/or distribution of technologically-based goods and services for both consumers and businesses. Whether large, global Fortune 500 companies or start-ups, these companies can be categorized by type of product or service provided.

Here's a brief overview of some different tech industry sub-sectors:

**Hardware:** firms that produce the equipment used to build the internal and external parts of a computer system such as smart phones, blue tooth devices, memory chips, microprocessors, motherboards, keyboards, monitors, printers, and digital cameras.

**Software:** firms that produce operating systems such as word processors, spreadsheets, presentation software, database management systems, photo and video editing packages, games, desktop publishing, computer-aided design software, e-mail clients, web browsers, security, virtual reality, and cloud computing.

**Content:** firms that produce information and entertainment such as blogs, social media, online books, videos, audio, video games, animation, and paid advertising.

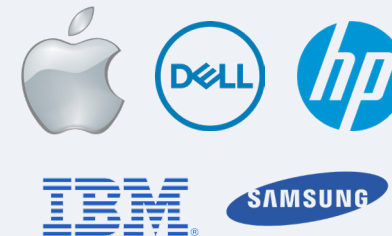
**E-Commerce:** firms that offer online marketplaces for customers and businesses to interact.

**Telecom:** firms that create, maintain and provide products and services that help individuals and businesses exchange information electronically over long distances.

## THE MAJOR PLAYERS

Here are a few of the larger players in each sub-sector\*:

### HARDWARE



### SOFTWARE



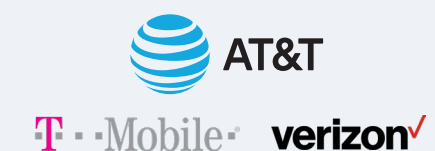
### CONTENT



### E-COMMERCE

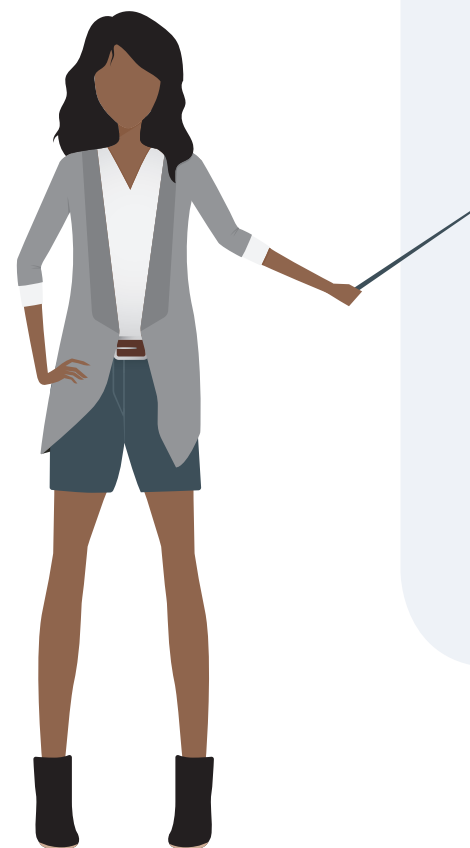


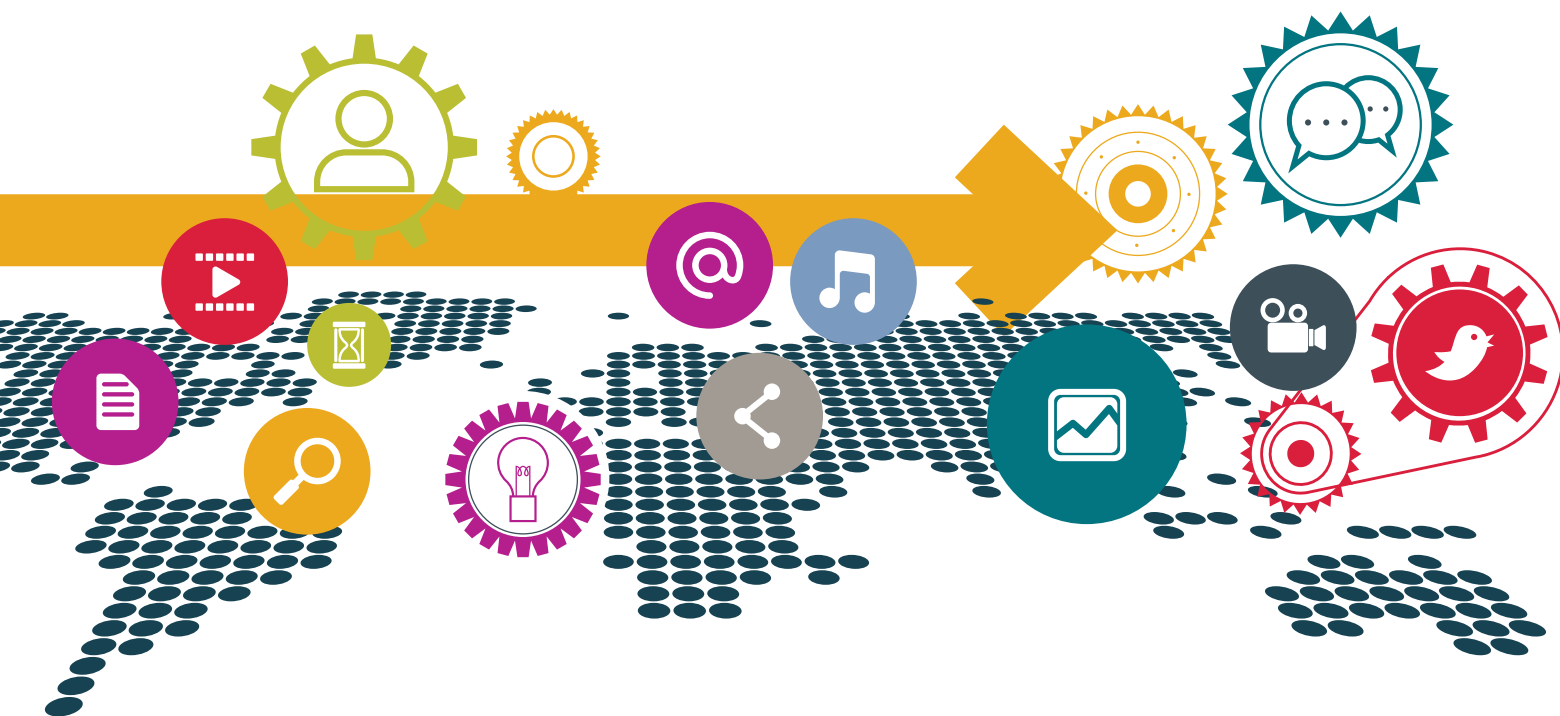
### TELECOM



\*It is important, of course, to recognize that even industry insiders debate the right breakdown of these sub-sectors and the right placement of key players in each category.

In addition, the line between technology and other industries is blurring; firms like Netflix and Hulu are both technology and also media & entertainment companies. Other examples are the EdTech (Coursera, HelpHub) and FinTech (CreditKarma, Stripe) spaces.





## Technology is Everywhere

All companies – tech and non-tech – leverage technology to improve their business operations and meet customer needs. Non-technology companies leverage tech trends to improve their business operations and meet customer needs. So, if you have business acumen and a digital mindset and are also passionate about a certain industry or professional service, there are positions available to you.

Consider these professional services employers:

- **Technology firm's consulting arm** (e.g., IBM Global Business Services)
- **Consulting firms** (e.g., McKinsey, Deloitte, E&Y)
- **Research/advisory firms** (e.g., Gartner Inc)
- **Banks or private equity/venture capital firms**

Working for these types of firms, you would engage directly with technology companies as your clients or as your portfolio companies. You could also help your non-technology clients implement (or purchase) the technology/technical solutions developed by technology firms. While technology IS everywhere, this guide specifically focuses on jobs available within technology firms.

## Innovations

The speed of technological innovation and disruption is accelerating. With increased R&D spending, fierce competition, and short product life cycles, technology is transforming business, driving operating efficiency, and changing the way we work, live and use products across many industries.

### A FEW RECENT INNOVATIONS

**Big Data & Analytics:** the systematic, computational analysis of data or statistics enables organizations to describe, predict, and/or improve business performance. Currently, employees use SQL, NoSQL, Sqoop, and/or Tableau to assist with these processes, but these tools can and will change over time. Developed by technology firms, and used by tech and non-tech companies including: Warby Parker, Nordstrom, and Avis Budget.

**Artificial Intelligence (AI):** the theory and development of computer systems to perform tasks that previously required human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. AI offers increased or new capabilities, faster completion of work, and improved quality and accuracy of work. Used by companies such as: Apple, Nest, Facebook, and Amazon.

**Blockchain:** a database that can store any type of digital information and share it among all network members. Blockchain can create business value because it has the potential to remove technical inefficiencies, simplify business processes, improve customer experiences, and achieve cost savings while reducing risks. Used by companies such as: DeBeers and Volkswagen.

**Cybersecurity & Risk Management:** methods companies are seeking to protect themselves (and their customers) against the criminal or unauthorized use of their hardware, software or electronic data. With new trends in the Internet of Things (connectivity of data), Cloud Computing (accessibility and lack of ownership), and Big Data (more data), it is critical to focus on cybersecurity and risk management protocols. Other trends and innovations include virtual & augmented reality and robotics, which are being used by companies such as: Electronic Arts, Best Buy, Nestle, Zara, TOMS, WalMart, Boeing and Royal Caribbean.

As you can see, regardless of industry, the ability to identify and quickly leverage these innovations while ensuring the reliability of the technology will require the employment of a tech-savvy workforce.

Furthermore, these innovations are changing the business operations and strategies of almost every function within technology and non-technology companies. For example:

**The marketing function** uses data analytics to better understand customers for the purposes of improving product design, personalizing messaging, and improving the customer experience.

**The engineering and product management functions** use AI and data analytics to build better products that meet customer needs.

**The strategy function** uses technological advances such as AI, blockchain and robotics to improve business operations, adapt products/market positioning, and meet business objectives.

**The human resources function** leverages AI, in the form of applicant tracking systems, to make the recruiting and onboarding process more efficient and effective.

**The information technology (IT) function** looks to advancements in cybersecurity to ensure that company data – and that of its customers – are safe.

## Impact of Trends on the Technology Industry

The advent of these new innovations and technologies makes the technology industry ripe for the establishment of start-ups as well as the acquisition of those start-ups by larger technology companies that are seeking to accelerate their growth and/or add to their niche capabilities.

Additionally, changes in how people communicate (there are currently 3.6 billion Internet users), absorb information (Internet advertising spend is \$88 billion+ and time spent viewing videos on mobile devices averages 30 min/day), purchase items and think about the privacy of their data will drive the creation and personalization of product and service offerings by technology companies.

To take advantage of these changes, companies will require leaders with both a deep understanding of business and a digital mindset. Read Forté's *21st Century Leadership Guide* for more insight into these new technologies including how companies leverage them for improved business outcomes and what skills are necessary to position yourself for employment.



## Women & Diversity in the Technology Industry

Women such as Grace Hopper, Radia Perlman, and Anita Borg have been some of the most innovative and pioneering figures in technology. (If you don't know them, look them up!) Yet, historically women have comprised only a small percentage of employees in the technology industry, despite bringing a highly-valued skill set and diverse perspective.

Since the mid- 2010s, there has been pressure on the technology industry to increase diversity and to share the results of their efforts. Companies are investing in recruitment and retention of female staff, working to champion more female role models, and creating more inclusive cultures. Some examples:

**Facebook** adopted a Diverse Slate Approach that mandates that at least one candidate from an underrepresented group be included in each group of prospective candidates for an open role. This led to an increase in the number of women in their workforce from 33% to 35% in one year.

**Google** has tasked senior management and People Operations (human resources) with shared responsibility for meeting diversity objectives. They also introduced a diversity-related curriculum into all their new employee orientations. Participants in their Unconscious Bias @ Work program reported a 16-point rise in awareness following the training.

**Pinterest** has begun to share its yearly diversity goals publicly – holding themselves accountable for change.

The impact of these initiatives can be seen in the now publicly available diversity and gender pay reporting that many technology companies provide: Google (<https://diversity.google/annual-report/>), Facebook (<https://www.facebook.com/careers/diversity-report>), and LinkedIn (<https://careers.linkedin.com/diversity-and-inclusion/workforce-diversity-report>).

**Intuit** developed programs to encourage leadership development among female recruits and establish promotion and evaluation processes based on results vs. time in the office. This led to a workforce of 38% women worldwide (vs. 30% industry average).

In 2016, **Salesforce** ordered a review of the compensation of 17,000 employees and spent an extra \$3 million on payroll to achieve gender equity.

### A FEW SPECIFIC INITIATIVES



# WHATEVER YOU CAN DO, TECH NEEDS IT TOO.

Within technology companies, there are many different employment opportunities for college graduates with a variety of skills and personalities, but this guide focuses on the business roles available in those companies (not the coding/engineering-related roles). There are ample opportunities here. For example, Apple’s career website says: “We’ve always thought of Apple as the intersection of technology and the liberal arts. That’s why we’re looking for great minds from every field of study.”



## Functional Roles— Definition & Description of Projects

Definitions of the work conducted in each function may differ by company. Most technology companies are organized around **product teams** (e.g., Apple’s iPhone or LinkedIn’s tablet app) that are comprised of many different functional roles.

Within a product team, there are those who:

- **Build the product and the team**– business operations explores the product idea; human resources hires the people (talent acquisition); and corporate development acquires technology and people.
- **Develop the product**– research analyzes customers; product management sets vision; project management oversees development; and operations builds the supply chain.
- **Distribute and analyze performance of product**– marketing creates awareness; sales closes deals; and finance tracks performance.

Below is a description of several different functional roles within technology companies. This is not an exhaustive listing of all the non-technical opportunities, but this should give you exposure to much of the business work done at a technology company. It is also important to note that at some companies not all of these roles exist for undergraduates without post-college work experience.

### Business and/or Corporate Development

Professionals in this role help the company identify new partnerships, acquisitions or investments; oversee and negotiate deals; and/or expand relationships with current partners.

**WORK CONTENT**

Analyze opportunities, build relationships and negotiate deals

**SAMPLE PROJECTS**

Acquire a start-up with a specific technology relevant for your employer, support integration of a recently acquired company

**DESIRED SKILLS**

Experience with Excel, PowerPoint, and Microsoft Access; problem solving and analytical and decision-making skills

**POTENTIAL KEYWORDS**

Strategic Partnerships, Corporate Development, or Partnership Sales

### Business Operations/Strategy

This role helps the company with strategic planning at the corporate or business unit level; basically it’s an internal consulting agency.

**WORK CONTENT**

Research questions, gather data, analyze data, and make recommendations to stakeholders

**SAMPLE PROJECTS**

Evaluate market entry opportunity for new product vertical, assess profitability of new product, improve efficiency of internal processes, recommend changes to raise customer satisfaction and conduct competitive analysis

**DESIRED SKILLS**

Analytical problem solving, leadership, communication/presentation skills--prefer quantitative coursework and understanding of Excel

**POTENTIAL KEYWORDS**

Corporate Strategy, Strategic Initiatives, Strategic Planning & Analysis, and Business Operations, Business Analyst

### Corporate Finance

This role supports the functioning of the business and helps with forecasting, accounting, and compliance.

**WORK CONTENT**

Examine data, turning it into recommendations, produce financial analysis, and support business partners during forecasting/reporting cycles

**SAMPLE PROJECTS**

Predict profitability of global expansion, develop index of competitors for pricing benchmarks, identify key risks that could negatively impact cash flow, analyze financial impact of company-wide cost reduction initiatives, and build interactive revenue dashboard

**DESIRED SKILLS**

Problem solving capabilities, quantitative horsepower/forecasting, and verbal/written communication--prefer finance, accounting, economics or business undergraduate degrees, and internship experience in finance

**POTENTIAL KEYWORDS**

Financial Analyst

### Operations

These roles support the procurement, manufacturing, fulfillment and logistics for the firm’s product lines.

**WORK CONTENT**

Make forecasts, design systems, and engage with suppliers

**SAMPLE PROJECTS**

Analyze resource utilization, build operations model for delivery system, establish demand planning process, negotiate cost savings with vendors and reduce production times

**DESIRED SKILLS**

Communication/negotiations, modeling--prefer degrees in operations or supply chain

**POTENTIAL KEYWORDS**

WW Operations, Sales Operations, Pathway Operations, Sales & Operations

### Product Management

Product managers collaborate across function to develop and design new products.

**WORK CONTENT**

Learn about your audience, develop new concepts, create product blueprints, and work with cross-functional teams and review metrics

**SAMPLE PROJECTS**

Design a product strategy and roadmap, prioritize the technical and business requirements of a product, develop a go-to market strategy, design user interface (UI) for product, conduct A/B testing, launch product, and gather user feedback

**DESIRED SKILLS**

Technical understanding, leadership experiences, problem solving ability, communication skills, curiosity and comfort with failure--depending on the company, some roles in this function are more technical in nature and may require a computer science or engineering background

**POTENTIAL KEYWORDS**

Product Management, Associate PM, Product Marketing Manager

### Product Marketing

Marketers make sure that customers are aware of their products.

**WORK CONTENT**

Collaboratively engage with partners, identify market research needs, monitor competition, problem solve multi-faceted issues

**SAMPLE PROJECTS**

Drive ongoing improvements in maximizing marketing spend, enhance marketing efficiency, help partners build business plans, develop go-to-market channels, influence campaigns, and marketing activities

**DESIRED SKILLS**

Creative problem solving, communication/persuasion, ability to translate quantitative and qualitative data into solid customer insights, and customer-focused approach--prefer marketing, communications, psychology or other related undergraduate degree

**POTENTIAL KEYWORDS**

Product Marketing, Channel Marketing, Marketing Communications, Marketing Strategist

### Sales

Employees in this function will drive sales and spur product adoption while engaging directly with customers.

**WORK CONTENT**

Research opportunities, talk with prospective or current customers, give demos, and close deals

**SAMPLE PROJECTS**

Devise sales campaigns, develop product solutions for clients, and create strategies for the education of sales teams

**DESIRED SKILLS**

Analytical problem solving, communication/persuasion, resourcefulness, customer focus, team player--prefer degree in communications or business

**POTENTIAL KEYWORDS**

Account Manager, Field Sales, Customer Success, Sales Operations, Partner Sales Partner Development

As you can see, the day-to-day responsibilities in each of these business functions are different, but the employees in each function need to rely upon each other in order to meet customer needs. Other functions within a technology company can include analytics and human resources (people operations).



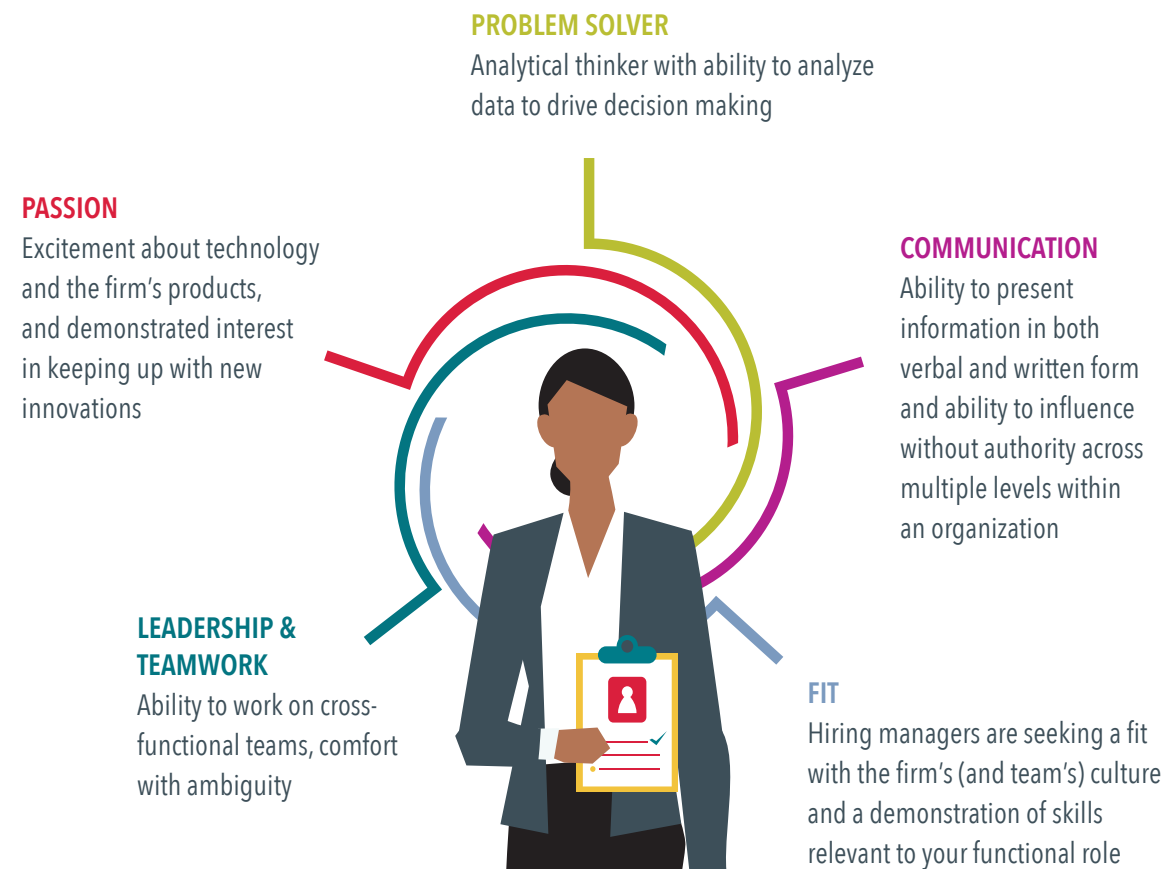
## Career Path & Exit Opportunities

It is also important to note that once you are within a technology company, there are opportunities to switch functions. For example, salespeople go into business development roles and marketers can become product managers. You can also move up within a function from analyst or associate to manager, senior manager, director and vice president – of course, your career path is going to depend on the company need and, structure, as well as your individual performance and interests.

The skills gained working in a technology company can also help position you for advancement within that or another company, for starting your own company, and/or for applying to an MBA program.

# WHAT TO KNOW BEFORE YOU GO

## INTERVIEWING FOR A JOB IN TECH



### In Addition...

Within all business roles in a technology company, hiring managers look for leadership & teamwork skills, passion, communication and problem solving abilities, and a good fit with the organization's culture.

*For more details about the skills required for employability in the future, review Forté's 21st Century Leadership Guide.*

## Interviews

The technology companies will evaluate candidates on these skills and attributes through a rigorous interview process that may include fit, behavioral, case and technical questions. To understand your target company and the competencies and experiences expected for your desired role, review the job description and the employer's website, LinkedIn page and YouTube for clues.

**The BEHAVIORAL QUESTIONS will focus on specific examples where you demonstrated target competencies such as:**

- Tell me about a time you worked on a team.
- Tell me about a time you had a conflict with a team.
- Tell me about a time you solved a complex problem.
- Tell me about a time you leveraged data to make a business decision.
- Tell me about a leadership experience.
- Tell me about a time you failed.
- Tell me about your biggest accomplishments.

The most effective approach to answering these behavioral questions is to recount a specific example and tell the interviewer about the situation/problem you encountered, the actions you took and the outcome of the situation.

**CASES OR MINI-CASES** tend to be less comprehensive and time consuming than consulting cases but are going to assess your communication skills (ability to be clear and concise), your problem-solving skills (ability to think in a structured and creative way), and your knowledge (industry-specific understanding).

Finally, with technology companies, you need to show you get their culture; check the firm's dress code and ask others who know the firm before you arrive to the interview in a business suit.

**The FIT QUESTIONS will focus on understanding traditional questions like:**

- Tell me about yourself/walk me through your resume.
- Why are you interested in this job? Why are you interested in technology/our company?
- What makes you different from other candidates?
- What are your short- and long-term goals?
- How do you stay abreast of industry trends?
- What do you do in your free time?
- What challenges have you faced at school or at work and how did you overcome them?
- Which of your skills or experiences would be assets in the role and why?
- What is your favorite product of ours and why? What would you change about it?



# FEATURES AND BUGS OF A JOB IN TECH

The technology industry offers a dynamic career path that presents intellectual fulfillment, cross-functional teamwork, and opportunities for growth and advancement; but it is also demanding in terms of hours, constant deadlines and stress, as your employer competes with its rivals.

As you consider whether a technology company is the right fit for you, think about the following pros and cons of working in this industry. It is also important to recognize that—given the breadth of the technology industry (sub-sectors, market share, number of employees, projected growth rates, leadership teams, established firm/start-up and culture)—your experience working at specific companies could vary greatly.

## PROS

Tech jobs are characterized by the excitement of being an integral part of a large cross-functional team that is changing the world one product at a time.

**1** There is no denying a certain “cool” factor to working at technology companies and working with tech products – you are on the cutting-edge and are helping design the next big thing. The pace of innovation enabled by new technologies and the development of life-changing products offers optimism, intellectual challenge, a sense of purpose and variety.

**2** The industry is growing, and thus, there are job opportunities in both technical and non-technical roles in established companies as well as in start-ups. Opportunities are currently centered in technology hubs like Silicon Valley, Boston and Austin, but we will see growth of technology company employment in many new markets in the coming years, such as with Amazon opening a second headquarters.

**3** You can find a job in many different functions depending on which one best suits your interests and your skills. Whether you work in marketing, finance, operations or sales, you will still engage with other areas of the business. And you don’t need to be an

engineer or have coding skills, although it is helpful to have an understanding of them in order to contribute to growth within the organization. The number of MBAs going into tech companies has been steadily increasing year-over-year; in 2018, Stanford’s Graduate School of Business sent 43% of its MBA graduates to work at tech companies; University of Chicago sent 20%; Harvard Business School, 19%; and Wharton, 15%.

**4** Many technology companies are flat meritocracies that value your skill set and contribution as well as your fit with their culture over your educational pedigree and years of experience. This, along with a company experiencing tremendous growth, can offer you rapid advancement and a broad scope of impact.

**And finally,** many of these (larger) technology companies have a reputation for offering less formal, flexible work environments (no suits required, jeans are appropriate), generous perks (free meals/dry cleaning, on-site medical care and massages) and, in some cases, substantial salaries and equity options.

## CONS

With all of the positives associated with a career in the technology industry, it is not the right choice for everybody. It can be a challenging career with stressful milestones and product launches that require well-functioning cross-functional teams and in-depth understanding of ever-changing technology. Here are some things to consider as you evaluate whether working in the technology industry is the best option for you.

**1** It can be difficult and stressful to meet constant product launch timelines and to work with cross-functional teams that have competing priorities. It can also be disappointing to deal with product cancellations,

schedule revisions and delays that can cause months of work to become irrelevant.

**2** The technology is complex, and you must continue to master new skills and stay on top of industry trends and product iterations to be relevant and maintain your effectiveness. If you are not passionate about the industry and your company’s products, advancing within the organization will be a challenge.

**3** While many technology companies are focused on efforts to increase diversity and create inclusive cultures, reported progress has been slow. According to research published by Statista in March 2018, the percentage of women in the workforce has grown to 46.8%, but at many tech companies, female employees make up between 26 and 43% of their overall workforce (and an even smaller percentage of the technical workforce at these companies). More specifically, according to a 2017 Reveal study, women are still missing from the executive ranks at tech companies; LinkedIn reported only 38% women in leadership roles, Square 36%, eBay 31%, Amazon 22%, Apple 19% and Google 12%.

In addition, in January 2019, employees and shareholders at Alphabet Inc.’s Google wrote a resolution to Alphabet’s board calling for reform in areas including racial and gender diversity and asking the board to consider tying these metrics to executive bonuses.

**4** Since the innovation and growth in many technology companies come from the engineering side of the business, decision making and leadership is often driven by that function.



**Just as with any career choice, it is important to understand your goals, strengths, passion, and preferences so you can best determine if a job in the tech industry is right for you.**

### Agile

A style of product development and project management that divides work into small, manageable chunks, so it's easy to reevaluate and readjust frequently.

### Artificial intelligence

A constellation of technologies—from machine learning to natural language processing—that allows machines to sense, comprehend, act, and learn.

### Big Data

A term for collections of data that are so large they can't be processed through traditional data processing systems.

### Blockchain

A digitized, decentralized, public ledger of transactions.

### Content Management

A collection of tools, software and processes that allow you to collect, manage and publish information on any medium.

### Cloud computing

The delivery of on-demand computing services—from applications to storage and processing power.

### Customer Relationship Management

A set of processes, tools, technologies, and software that helps businesses

manage their relationships with their customers.

### Disruptive Technology

First coined by Clayton Christensen, a Harvard Business School professor and best-selling author, disruptive technology refers to a new technology that surprisingly displaces an already established one.

### Iteration

Testing, reevaluating, and changing the plan frequently throughout a project.

### Lean

A process used by startups that involves testing products early and being strategic about growth so that a company can start making money before it runs out of money.

### Minimum Viable Product (MVP)

The most basic, trimmed down version of a product needed to test whether it's going to pay off.

### Scope

The size of a project in terms of cost, hours, and resources invested.

### Scalability

The measure of whether a practice or system will be effective if a company grows.

### Traction

The difficult-to-measure concept of how well an idea or business is taking off.

### Quality Assurance (QA) or Quality Control (QC)

A way of preventing mistakes or defects in manufactured products and avoiding problems when delivering solutions or services to customers.

### Internet of Things (IoT)

The interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data.

### Programming Languages

Formal constructed language designed to communicate instructions to a machine, particularly a computer. Programming languages can be used to create programs to control the behavior of a machine or to express algorithms.

### Search Engine Optimization (SEO)

The process of affecting the visibility of a website or a web page in a search engine's unpaid results—often referred to as “natural,” “organic,” or “earned” results.

### UX (user experience)

Specialists do a lot of research and testing to consider every element of how the user will interact with the company and website, coordinating with developers and UI designers.

### UI (user interface)

How the user controls/engages with a software application or a hardware device. A good UI allows the user to interact with software or hardware in a natural and intuitive way.

### Virtual Reality

The computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.

### Wireframes

Sketches of the key information that goes on each page of a website, essentially showing the site or page “skeleton.”



# THERE'S ALWAYS MORE TO LEARN

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## RESOURCES

As this industry changes on a daily basis, you must stay educated and ensure your skills are relevant. Publications such as the following can be helpful resources:

**TechCrunch**  
[techcrunch.com](https://techcrunch.com)

**Business Insider: Silicon Valley**  
[businessinsider.com/sai](https://businessinsider.com/sai)

**Stratechery**  
[stratechery.com](https://stratechery.com)

**Re/code**  
[recode.net](https://recode.net)

**Mary Meeker's Internet Trends Report**

**Crunchbase**  
[crunchbase.com](https://crunchbase.com)

You can also view **Forté's 21st Century Leadership Guide** for advice on updating your technical skills and digital mindset.



Considering the rapid pace of innovation in the technology industry and the numerous functional roles within these companies, the opportunity for both college graduates and MBA graduates to build the foundation of a robust career and make an impact is immense.

# NOTES

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Forté's community of motivated and inspiring women—100,000 and counting—is changing the balance of power in the workplace. Our powerful alliance of talented women, influential companies, leading undergraduate and MBA schools, and pioneering donors is working together to advance women in business.



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