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RECRUITING
GUIDE

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INTRODUCTION



Preface

Why Does This Guide Exist?

This guide serves as an introduction to the technology industry and give undergraduate students an idea of what they can expect working in the field. The Queen's Technology & Media Association (QTMA) understands that the space can be difficult to navigate. Thus, we have created this guide to give students one centralized document that answers all their questions. Any information we have failed to cover in depth can be accessed through additional resources we have linked throughout the guide.

Since inception, QTMA has recognized a serious underrepresentation of tech in the Queen's Commerce program. We feel students fail to get proper exposure to the industry and they typically are unaware of work opportunities available and the skills required to be successful. In response, QTMA created this guide to help answer some of your questions and increase the pipeline of Commerce students entering the space.

Who Should Use This Guide?

It is important to note that this guide dives primarily into **non-technical** roles within the technology industry. If you are looking to recruit for roles such as software engineer, developer, and data scientist, we recommend consulting technical resources - such as Cracking the Coding Interview - that can walk you through the skills and prep required to nail these interviews.

This guide is perfect for students coming from non-technical backgrounds - primarily in Commerce - who are curious about startups and want to learn about business development, operations, strategy, analytics, and product management roles.

Who is QTMA?

QTMA is Queen's University's premier technology association that is committed to enabling Queen's students to have the experience and education that prepares them for the technology industry. Our goals are threefold:



Product Management
Launchpad



Be Thought Leaders



Break Into Tech

We achieve these goals through two functions: research and product development. The research team develops independent insights and provides students with regular updates on the tech industry. The product development teams develop and pitch their software applications throughout the school year. For more info, click [here!](#)





THE TECH LANDSCAPE

Industry Overview

This section of the guide will seek to provide a high-level overview of the technology sector, the appeal of selecting tech as a career path, and a few key sub-segments for Commerce students.

Technology 101

At its broadest level, technology about applying scientific knowledge for practical means. The definition of what constitutes as a "tech" job has drastically changed and broadened throughout the past decade. As business and technology continue to converge, becoming more synonymous each day, non-technical roles in tech have blossomed, with the technology industry now having 3 non-technical workers for every technical worker (LinkedIn, 2018). Technology firms are actively seeking students that have a business acumen and are interested in tech. As both the industry and the jobs in tech continue to evolve, there has been an increasing number of opportunities for undergraduate business students in tech.

Throughout history, technology has acted as a catalyst for innovation and improved living conditions over the timeline of human existence. By inherent nature, the tech industry is one based on innovation and challenging the status quo. It is this foundation that draws many to work in tech, as most companies in the space have a purpose of driving progress and meaningful change in society. The innovation-focused cultures in tech companies has caused many to have relatively flat organizational structures, as there is a notion in tech that creative ideas can come from any level. As such, junior employees frequently have the opportunity to have their ideas heard at meetings and can make a lasting impact.

A key pull factor to many tech companies is the commitment towards a proper work-life balance. Relative to other popular commerce career paths (Consulting, Accounting, Finance, etc.), most tech offer more reasonable hours, casual dress codes, strong employee benefits. A youthful, energetic culture, particularly at smaller firms, makes tech firms an appealing place to work.

Industry Overview Cont.

While the opportunities in tech are quite broad, we wanted to outline a few of the popular paths in tech for Commerce students in particular:

FinTech

Financial technology (FinTech) seeks to disrupt traditional financial services and institutions through the use of innovative technology. FinTech is a broad, expanding segment that includes everything from mobile banking and peer-to-peer lending applications to rising technologies such as robo-advisors and cryptocurrencies. This industry is of particular interest to Commerce students that have a passion for both technology and finance. Examples include:

1. [Wealthsimple](#)
2. [RBC Ventures](#)
3. [Scotiabank's Digital Factory](#)
4. [Wave Financial](#)
5. [Freshbooks](#)

Internet

Today's society is dominated by the Internet. This sector enables everything from social media to e-commerce. At certain firms, such as Shopify, Commerce students are specifically targeted for roles in internal strategy. Enterprise software companies, with heavy Business-to-Business (B2B) sales components, also require the interpersonal skills of Commerce students in various positions. Examples include:

1. [Shopify](#)
2. [Google](#)
3. [Facebook](#)
4. [Flipp](#)
5. [500px](#)

Industry Overview Cont.

Cybersecurity

Cybersecurity firms work to protect internet-connected hardware, software and electronic data from attacks. This sector includes everything from designing secure network systems to managing vulnerabilities through customized software. As information and privacy becoming increasingly valuable, this industry has experienced rapid growth in recent years, growing at a 11% annual rate through 2022. Cybersecurity will continue to evolve in the coming years, as cyberattacks (from both nation-states and Artificial Intelligence) are becoming increasingly sophisticated. Examples include:

1. [Trend Micro](#)
2. [McAfee](#)
3. [Cisco](#)
4. [Cytelligence](#)
5. [IBM Security](#)

Segmenting the Space

This section is designed to break down the tech industry into its main components and outline the different culture, compensation, and recruiting practices of each segment.

Companies in the tech are typically categorized by their size. The smallest firms are start-ups, while the largest are referred to as giants. Mid-sized firms lay in between, and they share different characteristics in terms of culture, compensation, recruiting processes, and exit opportunities.

Startups

Start-ups typically have between 1 and 50 employees, with only one or two offices. They have limited funding, possibly having received only seed financing from the founder or angel investors (affluent individuals who invest in start-ups). Larger start-ups may have up to Series B funding, which means that they have already secured a certain amount of investment from institutional financiers and are thus have track-record of operational success.

Companies at this stage are filled with entrepreneurial and ambitious personalities. Tasked with building a company from scratch, start-ups suit Commerce students who are comfortable with risk and taking on responsibility early in their careers. Individuals often seek freedom, and thus are given a wide amount of autonomy in their day to day roles. With limited resources, training on the job is often hands-on through working, and roles and hierarchies are not clearly defined. As a result, hours can be intense, around the 60-70 a week for very small firms and 50+ for larger start-ups, according a VC associate at Pritzker Group with previous start-up experience.

Compensation greatly varies by role, location, and skillset. According to AngelList, a website which aggregates start-up data, the average salary across all positions in Toronto is \$67,000 for start-up sized technology companies, with Engineering Managers clocking in at \$100,000 and Business Development professionals rounding out the low end at \$52,000.

Segmenting the Space Cont.

Generally, recruiting happens with these firms on an ad-hoc basis when needed. Considering their limited size, many smaller firms lack the personnel, time, or resources to host formal recruiting cycles. For Commerce students, this means that opportunities to get a role at a start-up will often come up through networking or at hackathon/entrepreneurship events.

Exit opportunities in the start-up space are limited primarily to other start-ups unless the company experiences explosive success. That being said, many employees at start-ups are offered equity in their compensation, enabling them to become part owners in the company. This enhances the value of the work, allowing early grads to build up a company and potentially experience a large payoff if the company finds success. With successful exits, founders and early-stage employees can move into venture capital, Fortune 500 strategy or management. Examples include: [Swept](#), [Vidyard](#), and [Bench](#).



Mid-Sized

Mid-sized companies typically have between 50 and 1,000 employees, with a few offices spanning across a single or multiple countries. These companies are usually well-capitalized, with a history of operational success or heavy venture capital and private equity funding to back them up. This additional size often means increased salaries when compared to start-ups, as well as more resources able to be dedicated to projects and initiatives.

Companies at this stage are filled with a more diverse range of personalities, while corporate culture remains collaborative and energetic. As roles and hierarchies are more defined, autonomy is reduced. As these firms have a focus on sustainable growth, training programs are often quite developed yet innovative, incorporating

Segmenting the Space Cont.

experiential and other innovative methods. Hours are typically better than at start-ups, close to the 50-hour mark. This makes mid-sized technology companies quite an attractive option for those who value work-life balance.

Compensation still varies significantly, but in general, traditional roles would approach an average much closer to the industry average of \$92,000 (Hired.com, 2018) in Toronto. Equity compensation plans are still relatively prominent, but since ownership has been more heavily diluted, the potential upside is more limited than for those who joined earlier stage start-ups.

Many mid-sized technology firms typically run formal recruiting programs, in which the application process is fairly standard. Applying online leads to a first-round interview, where candidates will be asked a series behaviours, questions on industry knowledge, and moderate technicals depending on the role. Subsequent rounds are held as needed. The specifics of the interview process are detailed further later in this guide.

Direct exit opportunities for employees of mid-sized companies are more diverse depending on role. Technical personnel can move between technology companies of all sizes, while management roles transition primarily to other management roles at similarly sized companies. Examples include: [AppDirect](#), [Workfusion](#), and [Glossier](#).



AppDirect



WorkFusion



Glossier.

Segmenting the Space Cont.

Giant

Giant companies typically have over 1,000 employees, with offices spanning the globe. Some of these companies are among the most well-known companies in the world, with Apple, Amazon, Alphabet (Google's parent company), Microsoft, and Facebook being the world's largest companies by market capitalization at the time of this report's publication. Even smaller giants have typically gone through an initial public offering and reached an over \$1 billion valuation, meaning that funding should be a non-issue most of the time.

People at giant technology companies are more traditionally corporate, thriving in structured environments and coming from fairly high-achieving backgrounds. Corporate culture is established, yet still relatively informal with a focus on innovation. Roles and hierarchies are clearly defined, but a flat organizational structure enables even the most junior level employees to contribute meaningfully to the firm. Work-life balance is also top of mind for these firms, for example Google allows pets in the workplace, offers unparalleled death and maternity benefits, and massage credits. Hours ramp up slightly to the 55-60/week range but still allow for a healthy work-life balance.

Giant technology firms run formal recruiting programs, in which the application process resembles that of popular Commerce industries. Information sessions are held on campus in September, in which the firm outlines the position they are looking for as well as the recruiting timeline and process. Reaching out to Smith alumni, found on LinkedIn, SmithConnect, or through your personal network can provide invaluable additional insight to the process.

Compensation at giants is heavily tied to position, but salaries are highly competitive due to Big Tech's heavy focus on attracting top talent. Median worker pay at Google last year was a staggering \$197,274, with many non-technical roles still making hefty sums. Senior Project Managers on average pulled \$201,600, while Sales Strategy

Segmenting the Space Cont.

Managers made \$173,077. Employees may also be offered stock compensation, which, although have much smaller upside than those of start-ups, still can result in significant sums.

Exit opportunities for employees of tech giants are broad. Similar to finance and consulting, working at a reputable company with a strong brand enables employees to have more exit options, enabling them to work across industries or at a tech company of different size. Examples include: [Uber](#), [Google](#), and [Intel](#).



Corporate Innovation Arms

Another backdoor way to enter technology is by working for an innovation department within bigger organizations. For Commerce students, this often takes the form of ventures in the financial services space. RBC's Amplify program enables interns to work on innovative technology developments, while Scotiabank's Digital Factory allows employees to use new technology to create customer facing solutions.

While the programs themselves proudly espouse agile and modern beliefs, they are often run by individuals who rose through the traditional corporate ladder. Thus, there is often a stark contrast between the laid-back culture of the division, and the more traditional attitudes of higher-ups.

Recruiting for innovation divisions largely resembles that of traditional on-campus recruitment efforts. Information sessions are held on campus in September, in which the firm outlines the position they are looking for as well as the recruiting timeline and process. Reaching out to Smith alumni, found on LinkedIn, SmithConnect, or through your personal network can provide invaluable additional insight to the process.

Segmenting the Space Cont.

Compensation at internal technology divisions fall largely in-line with industry average, as firms vie for the same talent as other sized tech firms. Exit opportunities for employees are varied, with many leaving for pure technology companies while others remain in various disciplines at their initial firm. Examples include: [Scotiabank Digital Factory](#), [RBC Amplify](#), and [Accenture Innovation Centres](#).

Summary Table

	Start-ups	Mid-sized	Giants	Inn. Divisions
Size	1 to 50 employees, 1 or 2 offices	50 to 1,000 employees, a few offices	1,000+ employees, global set of offices	50-200 employees, few offices
Culture	Entrepreneurial, high pressure	Relaxed, lifestyle-oriented	Youthful, progressive	Corporate, rigid
Compensation	Low guaranteed, high upside (equity)	Average guaranteed, low upside	High guaranteed, low upside	Average guaranteed, low upside
Recruiting	Informal; networking and connections key	Formal and informal, networking, information sessions and online applications	Formal, information sessions and online applications	Formal, information sessions and online applications

Global Tech Hubs

This section of the recruiting guide aims to outline technological centres around the world, as well as the differences between them in terms of culture, livability, and specialties in various technology sub-segments. We will also discuss potential difficulties with living in, and companies based at, the location.

San Francisco Bay Area

As the world's technology capital, there is no place more exciting for those who thrive on innovation and imagination than San Francisco. The Bay Area contains an unparalleled concentration of big tech firms. Google, Apple, HP, Intel, eBay, Cisco, Netflix, Oracle, Tesla, and Salesforce are just a small sampling of the myriad of giant technology companies headquartered in the city. Due to an abundance of venture capitalists in the area, ambitious start-up founders also crowd into the city. All in all, there is no better place to work in technology than the Silicon Valley.

In addition to the aforementioned visa risks, San Francisco is extremely expensive to live in. Many highly paid tech workers have complained that \$150,000+/year salaries are required to meet basic needs, with rent often over \$2,000 a month for single bedroom apartments. Housing is even more expensive to own, with the median house price over \$1.6 million.

Waterloo

Roughly 110 kilometers west of Toronto, Waterloo is colloquially known as Silicon Valley north due to enormous concentration of technology firms. Blackberry, an enterprise software and internet of things company which once led the market in smartphone production, acts as the foundation for the city's technological base with roughly 4,500 employees. KiK Messenger, Desire2Learn, OpenText, a data management software, and Maplesoft, a mathematical software company, are also significant tech companies headquartered in the region. Google has its Canadian head office located here as well.

Global Tech Hubs Cont.

Being much smaller than other technology centres, its important to keep in mind that entertainment options are relatively limited. The atmosphere of the city is much more similar to that of a small town, and although the technology industry draws in a variety of immigrants, it still may be a culture shock for employees used to living in urban environments.

Toronto

Toronto's reputation as a technological heavy-weight is growing world-wide. The city added almost 30,000 tech sector jobs in 2017, a pace unrivalled by any other locale in North America. Top Canadian tech giants such as Kik, Shopify, and Hootsuite all have offices in Toronto, while Google, Facebook, and Microsoft also have a presence. Due to the city's academic presence, an artificial intelligence supercluster also exists in Toronto. The Vector Institute, an AI lab at the University of Toronto, has received over \$150 million in funding, and Samsung plans to open an AI R&D centre for healthcare. For students looking for more entrepreneurial experiences, the MaRs Discovery District is home to start-ups that operate in sectors ranging from biotech to enterprise, employing a total of 12,800 people.

Seattle

Located on the coast of America's North West, Seattle is a rising technology hub filled with progressive and friendly personalities. Amazon, Microsoft, and Expedia.com are all headquartered in Seattle, providing tons of employment opportunities within the technology realm. Smaller technology companies are concentrated in the internet realm, including PayScale, a global employee compensation database, Sporcle, an online trivia site, and Zillow.com, a real estate price aggregator.

Due to recent changes in the US political landscape, work visas have become much harder to procure, especially for non-Canadian citizens. Therefore, companies have been much more selective in the recruiting process for international applicants.

Filtering for the Best Startups

Trying to navigate the startup landscape can be daunting. Typically choosing to work at a startup, instead of a mid-sized or giant company, means accepting higher risk for a potentially higher payoff. If you manage to join a future tech unicorn in its early stages, your payout will significantly exceed that of any other job. This section will provide tips on how to source these startups best poised for success.

Founder-Market Fit

This term is often used by venture capitalists to describe founders with the drive and expertise needed to outperform in the market. It is important to note that the earlier stage a company is, the more you need to rely on founder-market fit as an indicator of a solid startup. VCs seek to determine whether this team of founders is the single most qualified group to execute on a particular venture. This can be evaluated in a few ways. Some questions you should ask yourself include:

- Have these founders previously founded and successfully exited their companies?
- Are these founders considered market experts? E.g. if they are starting an InsurTech company, have they previously worked in insurance and have a thorough understanding of the industry pain points?
- Do they possess all the interpersonal and technical skills required for this space?

Product-Market Fit

Product-market fit will become increasingly apparent in later stage startups. This term refers to the ability of a product or service to address the needs of an attractive market. It can be a balance in determining whether the product is innovative and first to market vs. undesired. Key questions to consider in evaluating product-market fit include:

- What does the product or service do? How is it different from what's currently offered in the market?
- Are there direct competitors? If not, is it because no one has previously been able to deliver in the market or because there is no demand?

Filtering for the Best Startups Cont.

- Are there clear use cases associated with the product or service? Can it be demonstrated easily and clearly?
- Does the company have a pipeline of customers? What level of quality are these customer leads?

Notable Investors

Another way of filtering for up and coming startups is to take a look at past and current investors. The value a reputable investor can provide is significant. Not only do these venture capital firms have substantial connections that can aid directly in launching startups, but their invested interest in the companies signal they are likely solid gambles. VCs spend considerable time evaluating startups and the markets they operate in – a process called due diligence – and only invest in the highest-conviction names. The following is a breakdown of some of the best VCs in the industry:

Seed & Early Stage

- [Y Combinator](#)
- [500 Startups](#)
- [Techstars](#)
- [Uncork Capital](#)
- [Benchmark](#)

Multi-Stage

- [Sequoia Capital](#)
- [Accel](#)
- [GV](#)
- [Andreessen Horowitz](#)
- [Index Ventures](#)
- [DFJ](#)
- [Battery Ventures](#)
- [Bain Capital](#)

Later Stage

- [Lightspeed Venture Partners](#)
- [Greylock Partners](#)
- [New Enterprise Associates](#)

Understanding the Roles

With the recent growth of the tech industry, more and more positions at startups, small-to medium sized enterprises (SMEs) , and large corporations are being made available to technical and non-technical students. Unlike more traditional career paths, namely finance, consulting, accounting, HR, or marketing, the requirements for tech roles are more broad and the paths are less direct. At the same time, however, it is important to note that many of the aforementioned functions are also available at tech companies. Tech jobs are not limited to students with technical degrees. That is, there will always be a need for fundamental business skill sets in any organization, albeit with some expected nuances in tech-oriented companies. The goal of this section is to help detail some of the more common jobs available to students from all backgrounds. But firstly, it is important to preface the following break-down of roles (into business & strategy and engineering & technology development) by highlighting the significant over-lap that occurs between many job titles, especially in early stage Start-ups. A common theme in the tech industry is the ability to 'wear many hats' and gain exposure to projects and experience outside the confines of the outlined job titles.

The contents of the section will give insight into the responsibilities, opportunities, and qualifications of the tech industry's most prominent roles. The roles will be broken into two sections: non-technical and technical.

Non-Technical: Corporate Finance & Accounting

A corporate finance or accounting role in a tech company encompasses many traditional financial tasks: modelling, performance measurement, and budget and cost analysis. In a tech company, the projections and modelling scenarios will extend across a wide range of projects: product investment strategy, market driver identification, business or product profitability, and resource optimization.

Understanding the Roles Cont.

Professional Development

A role as a financial analyst at a tech company earns fundamental, transferable financial experience with added exposure to cross-functional organizational structures that promote networking and communication. Corporate finance in any industry will position analysts to work in future areas of finance (investment banking, asset management, wealth management). In tech, analysts will also leave with a demonstrated interest and knowledge of the tech sector. Summer and full-time financial analyst roles available to undergraduate students.

Requirements

- Quantitative degree (finance, accounting, economics) is preferable
- Experience in a previous finance or account role necessary for 3rd year and full-time positions
- Demonstrated analytical and conceptual skills
- Proficiency with excel modelling

Non-Technical: Business Operations

Business operations or "BizOp" links together the different functional groups of an organization. Fundamentally, the BizOps team functions as a company's internal consultancy, working across a range of different cases. Their role, however, also extends past strategic insight into business optimization and project execution. BizOps analysts draw on both qualitative business skills and analytics in projects that affect areas such as talent acquisition, finance, and marketing.

Professional Development

BizOps analysts are exposed to teams composed of engineers, MBAs, venture capitalists, and legal professionals, giving access to diverse learning opportunities and networking. Aside from evident experience and knowledge acquired on the strategy side, BizOps analysts leave with quantitative skill sets that more employers

Understanding the Roles Cont.

are searching for. Summer and full-time financial analyst roles available to undergraduate students. However, second, third, and fourth year students can typically expect to compete against a large talent pool including applicants that range from MBA's to engineers.

Requirements

- Quantitative degree (economics, business, engineering, computer science) is preferable
- Demonstrated verbal and written communications skills and quantitative problem-solving ability
- Proficiency with analytical programming languages, specifically with SQL and Python

Non-Technical: Project Management

The nature of this position generally depends on the department and project itself. Generally, project managers incorporate and develop planning, risk mitigation, and executions strategies and best practices. They are charged with ensuring performance metrics are met, necessary communication with stakeholders is relayed, and that long and short-term goals are met

Professional Development

Presented with a variety of different time constrained and resource limited tasks, Project managers develop a suite of organizational skills. Moving onwards, they can progress into more senior project manager roles, a program manager position (oversee various projects), or begin using experience to pursue entrepreneurial ventures. These roles are not available to undergraduate students. Undergraduate students lack the leadership and industry experience to lead most projects. As such, project managers have either progressed into their roles from more hands-on positions within the team or exited from consulting firms.

Understanding the Roles Cont.

Requirements

- Previous experience working on technical teams or launching new products
- Strong interpersonal skills, verbal, and written communication, as well as presentation abilities
- Strong proficiency with project management tools (Trello, Wrike, Asana etc.), PowerPoint, and programming (if relevant)

Non-Technical: Product Marketing Manager

Product marketing managers (PPM) work on go-to-market strategies to build awareness and drive engagement and product adoption. On both the B2C and B2B sides, product marketing managers identify user and demonstrate alignments with proposed products value through campaigns, advocacy, events, and communication. PPM's also collaborate closely with the cross-functional stakeholders on the product team, analytics, and leadership.

Professional Development

Associate product marketing manager's (APPM) gain access a wide range of market experience. Moreover, many tech companies, Google for instance, have designed programs intended to provide the most value to prospects. An APPM role, unlike more traditional marketing positions, stretches the skills and abilities of APPM's past just market sizing, profiling, and strategy. Specifically, APPM's leave with experience with the various cross-functional departments. Summer and full-time APPM roles available to undergraduate students.

Requirements

- Demonstrated creative drive, analytical ability, a strategic mindset, and passion for technology and innovation
- A deep understanding of the company's product and service portfolio

Understanding the Roles Cont.

Non-Technical: Sales

Sales team sell more complex product offerings, generally on the B2B side. Organizations, such as IBM, sell business packages containing a suite of different software that can be used company wide. As part of sales, much of the work involves networking, searching for opportunities, and client relations. Summer and full-time sales representative roles available to undergraduate students.

Requirements

- Relevant previous B2B and B2C sales
- A deep understanding of the company's product and service portfolio
- Ability to communicate, network, and build relationships effectively

Non-Technical: Corporate Development

In corporate development, the emphasis is M&A. Analysts will research-industries, companies, and products as potential M&A targets, drawing on investment banking, and consulting experience.

Professional Development

Corporate development analysts will be sourced from previous investment banking, management consulting, or venture capital positions. That said, corporate development in the tech space will give access to more tech specific M&A transactional experience and exit opportunities. Not available to undergraduates. Corporate development jobs are typically exit opportunities for individuals with M&A experience at consulting and investment banking firms.

Requirements

- Quantitative degree (finance, accounting, economics) is preferable
- Previous experience in management consulting or investment banking

Understanding the Roles Cont.

Non-Technical: Business Development

A role in business development, like sales, is orientated around forming partnerships with market players. Business development managers identify both internal and external opportunities to drive growth, forming third-party partnerships and evaluating new business and product lines. Typical role tasks involve continuous networking and deal propositions.

Professional Development

The main responsibility of business development is business partnership procurement. And as a consequence of broad industry exposure, the role gives opportunity to strengthen and expand one's own industry network. Summer and full-time business development representative roles available to undergraduate students.

Requirements

- Relevant educational background (business, marketing, finance, sales) is preferable
- Demonstrated levels of motivation, creativity, networking ability, and interpersonal communication

Technical: Product Management

Product managers (PMs) lead the launch of products. Essentially, they are the liaisons between product developers and business teams, requiring an understanding of coding and design fundamentals to coordinate and lead effectively. Entrepreneurial in nature, their role is to identify market opportunities produce both the product vision and strategy to meet the needs of the market. A critical responsibility of product managers is a strong understanding of consumers and equally strong understanding of how to solve existing product inefficiencies or satisfy entirely unfulfilled needs. Roles available to experienced engineering and development

Understanding the Roles Cont.

backgrounds with selective availability to students in engineering and computer science related studies. That being said, various rotational programs such as the Facebook product manager program and APM Toronto are also available to help prospective PM's enter the industry.

Requirements

- Either a technical degree (computer science, engineering, mathematics, statistics) or a deep proven understanding of programming
- Demonstrated product knowledge, organizational skills, and an entrepreneurial spirit

Technical: Data Science & Business Intelligence

Data analysts serve a critical support role. The business intelligence generated by them is used to support strategic planning and processes. Tasks involve mining and analyzing data bases to drive optimization, improve products, guide marketing strategies, and offer any other supplementary data models for decisional processes

Requirements

- Either a technical degree (computer science, engineering, mathematics, statistics) or a deep proven understanding of programming
- Familiarity with business intelligence tools and programming languages (R, Python, Java, Scala, SQL)

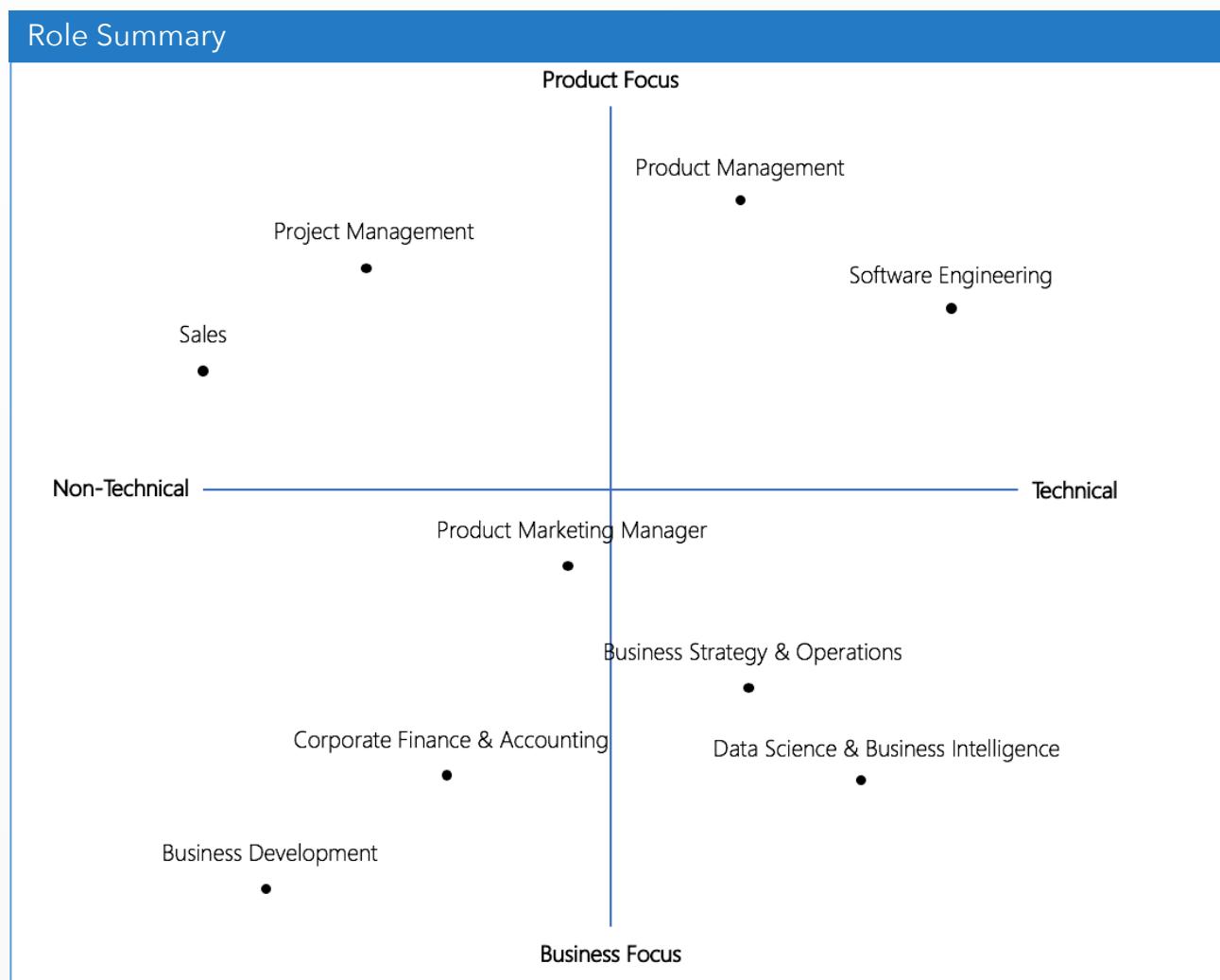
Technical: Software Engineering

Data analysts serve a critical support role. The business intelligence generated by them is used to support strategic planning and processes. Tasks involve mining and analyzing data bases to drive optimization, improve products, guide marketing strategies, and offer any other supplementary data models for decisional processes

Understanding the Roles Cont.

Requirements

- Either a technical degree (computer science, engineering, mathematics, statistics) or a deep proven understanding of programming
- Development experience, either from past internships or from extracurricular programming experience





THE RECRUITING PROCESS

Steps for Success

This section seeks to provide an overview of the ideal work experience, extracurricular involvement, and academic record of an applicant seeking employment in the tech space.

Extracurriculars

Because of the less conventional and newly paved career paths set in the tech industry, many jobs are sourced through internal networks. It is therefore critical that tech-hopeful graduates explore every avenue available to them in order to both maximize opportunity and explore an ever-growing list of job positions. Fortunately, there are various opportunities available on and off campus through commerce & non-commerce clubs, hackathons, and networking opportunities.

Commerce & Non-Commerce Clubs

Queen's hosts a variety of entrepreneurial and tech-related clubs and conferences available to students from any faculty. Each club offers a unique value proposition to members but joining any is an excellent way to build the foundation of or expand your tech network.

Queen's Technology & Media Association (QTMA)

QTMA, Queen's premier technology association, is committed to enabling Queen's students to have the experience and education that prepares them for the technology industry. In 2016, we launched [Project Tähdistö](#), Canada's first undergraduate product management program where three product teams develop a software application throughout the school year. QTMA, Queen's premier technology association, is committed to enabling Queen's students to have the experience and education that prepares them for the technology industry. Moreover, QTMA regularly produces excellent placements across some of Canada's biggest tech recruiters, including [Google](#), [Facebook](#), and [Shopify](#). For more information, visit [here](#).

Steps for Success Cont.

enLight

Canada's only student-run non-profit dedicated to helping students launch their own start-ups and businesses through a connected network of inter-collegiate post-secondary students, investors and mentors. Every year they also host a DEMO day in which students can pitch their ideas to investors. For more information, visit [here](#).

Queen's Conference on Business & Technology (QCBT)

QCBT hosts an annual two-day conference that connects industry leaders in technology with students. They also hold annual case competition dealing with topics such as cybersecurity strategy and blockchain development, offering winners interviews with firms such as Deloitte. For more information, visit [here](#).

Queen's Entrepreneurs' Competition (QEC)

Queen's Entrepreneurship Competition is one of the longest-running and best-known undergraduate business plan competitions in the world. Each year QEC hosts a business competition in which the top 15 teams are selected to pitch to a panel of Canadian business leaders for over \$75,000 in grants and prizes. For more information, visit [here](#).

Queen's Startup Summit

Queen's Startup Summit is an event that brings together designers, developers, product managers and startup enthusiasts to share ideas, form teams and build startups. In 54 hours, teams are asked to code, design, research market feasibility, and most importantly build a working prototype. For more information, visit [here](#).

Steps for Success Cont.

Hackathons

For those seeking to learn, innovate, and pitch a fully-functional product within 24 hours, Hackathons present an opportunity to not only advance and challenge one's own programming knowledge but also an opportunity to network with high profile tech recruiters. And while tech hackathons are geared towards people pursuing or experienced with technical skill sets, there is always need for a strong business student on each team; a product is only attractive if it has a team that can accurately portray its value. Although the list of hackathons keep growing each year, the following are a summary of key events. For more information on hackathons, visit [Eventbrite](#), [Major League Hacking](#), [Hackevents](#).

Hack the North

As Canada's biggest and likely most competitive hackathon, Hack the North draws talent from all across Canada. Each year over 1,000 students compete and collaborate with industry leaders from tech funds, start-ups incubators, and successful venture founders. Attendants are also given the opportunity to network with tech firms and companies like Facebook and Shopify. For more information, visit [here](#).

QHacks

QHacks is a local 36-hour Queen's event and a great way to get involved in hackathons without making a trip to Toronto or Waterloo. Judges and sponsors have come from tech companies like Google, Microsoft, and Flipp. Attendants are also in contention to with over \$16,000 worth of prizes. For more information, visit [here](#).

Starterhacks

First time hackathoners are welcome to join Starterhacks, a Waterloo-based beginner hackathon. Attendants will work through a series of workshops aimed at teaching fundamental techniques needed to excel at a hackathon. The event is sponsored by the *University of Waterloo Faculty of Mathematics* and is focused on learning and development rather than networking. For more information, visit [here](#).

Steps for Success Cont.

Networking

Although tech companies are now beginning to recruit more on campus, Queen's has yet to have established a strong history of on campus tech recruiting as it has in financial, consulting, accounting, and marketing disciplines. Nevertheless, steps are forward are being made and tech giants like Google have begun making the trip to Kingston. Like any other posting, OCR events are made available through Quest. Other off campus events in Toronto, Waterloo, and Vancouver are also posted but it's best not to rely too heavily on Quest as tech recruiting events are often less formalized, especially for smaller scale startup gatherings. Websites like [Eventbrite](#), [Mentorworks](#), and TechVibes are some great places to keep tabs on the emergent tech recruiting scene.

If it also hasn't already been made clear, successful tech recruiting is contingent on one's ability to network as much as possible, as best as possible. However, in an industry built on entrepreneurial vision and passion, it is expected that applicants demonstrate their interest to create and deliver impactful work. The aforementioned clubs and hackathons are a great way to just that. Many companies even recruit directly out of Hackathons. Side projects, usually created by technical students to showcase skill and creativity, are also be another avenue to pursue if group of computer science or engineer students are looking for someone to handle the business side.

Academics

Of all facets in the technology recruiting process, academics is possibly the least important. Most firms are not particularly GPA-conscious, with anything above the 3.0 range perfectly acceptable. Previous coursework that demonstrates an interest in technology and develops relevant skills for the role you're vying for is much more important. In terms of Commerce courses, upper year classes such as COMM 420: Financial Tech and Innovation, and COMM 493: Analytics and Artificial Intelligence for Business are often popular picks.

Steps for Success Cont.

Driven Commerce students can complete a dual degree with the *School of Computing* to gain baseline technical knowledge, opening up doors to pursuing more technical roles in the future. It is also easier to get US Visa sponsorship as a skilled laborer, but the trade-off is usually staying for an extra year at Queen's to complete the degree. Students who decide to follow this path often begin by taking CISC 101, a primer course on the basics of computing, then completing CISC and MATH 121. The full course plan can be found [here](#).

Internships

Prior work experience plays a significant, but not overbearing role in tech recruiting. If you can demonstrate interest in the field through involvement in extracurricular activities such as clubs or hackathons, your previous work experience is a secondary factor in further consideration.

However, when seeking a role in technology, keep the following three criteria for your work experiences in mind: unique, relevant, and impactful. Unique work experience, or roles not often sought out by typical Commerce or software engineering students, demonstrate your confidence in personal values, out of the box thinking, and courage to act upon your beliefs. They also distinguish your application from the hundreds or thousands of similar applications with traditional positions. Relevant roles show your commitment to your chosen career path, thus making you a more attractive candidate. Impactful experiences demonstrate the ability to not only solve problems, but get things done, both of which are key skills in the technology space.

It's difficult to land roles which fit one of these criteria, let alone all three. However, the chances of finding a job which does is exponentially higher among start-ups. Since start-ups are usually extremely small as well as serve niche and innovative purposes, it's unlikely that many other applicants will have a role like yours. Considering that roles at start-ups are much less defined than at larger companies, you also have more opportunity to shift your responsibilities into ones which resemble the future job you're targeting. It's much easier to make a large impact on a small company as well, making working at a start-up the perfect foundation for launching your career in tech.

Steps for Success Cont.

Other great stepping stones include innovation divisions at larger corporations, the Cambridge Fellowship, and small venture capital funds. Below are career paths of select Queen's alumni who have successfully broken into technology


Jamyang Tenzin

Ali Khokhar

Alex Jin

Full time: BizOps & Strategy at Shopify (Waterloo)

3rd Year: BizOps & Strategy Intern at Shopify (Waterloo)

2nd Year: E-Commerce Analyst Intern at Loblaw Digital (Toronto)

1st Year: Regional Coordinator at Students for a Free Tibet (Toronto)

Full time: APMM at Google (Toronto)

3rd Year: APMM Intern at Google (Toronto)

2nd Year: Special Projects Intern at eSight Eyewear (Toronto)

1st Year: Business Development & Strategy Intern at Panvista (Toronto)

Full time: Product Manager at Dropbox (San Francisco)

3rd Year: Web Developer at RateHub.ca (Kingston)

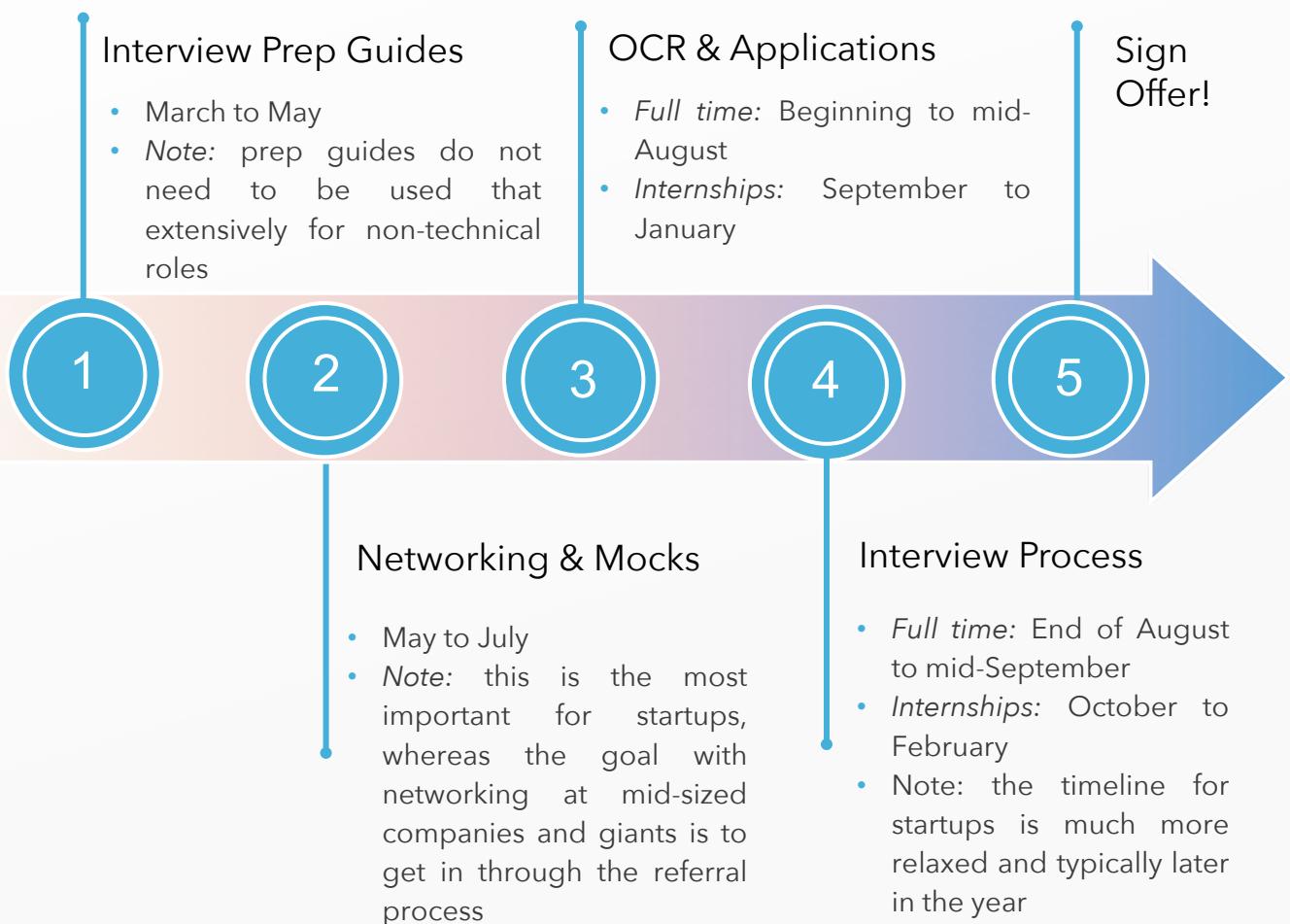
2nd Year: Business Development Intern at Xberts (Beijing)

1st Year: Business Analyst at RBC Capital Markets (Toronto)

Steps for Success Cont.

Many Commerce students are unaware of the timelines, interview questions, and overall recruiting process for tech firms. Recruiting for tech firms can be a difficult process to navigate as the process and cultures will differ based on the size and location of the target firm. This section will provide a background into tech recruiting and advice on how to best set yourself up for success.

Recruiting Timeline Overview



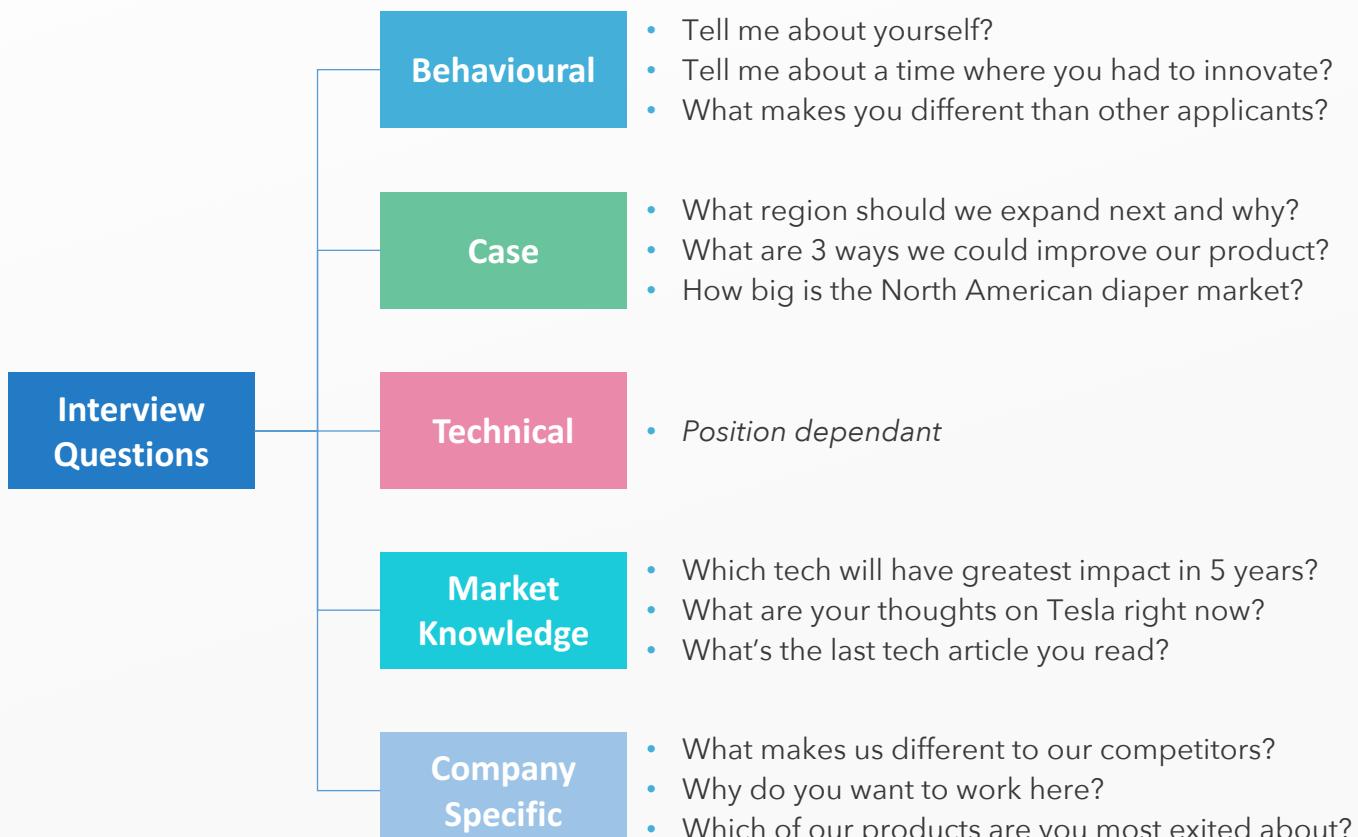
The Interview

Overview

Tech interviews are used for two main purposes: to gain a better understanding about a candidate beyond what's been provided on your resume, and to determine if a candidate is the right fit and has the right experiences to succeed in a certain role..

While this is NOT an interview guide, this section will cover some common interview questions in tech and advice on how to best prepare/answer them.

Interview Question Category Breakdown



The Interview Cont.

Behavioural Questions

Behavioural

These questions seek to determine if you align with the values and culture of the firm. Typical questions revolve around asking about your previous summer internships, extra-curricular clubs at Queen's, and how you work in teams.

Where to go for info?

- Glassdoor
- [Cracking the PM interview](#) (Chapters 11, 12, 26)
- [Decode & Conquer](#) (Chapter 15)

Case Questions

Case

These questions are used to test how you think, it is important to remember to keep your math simple (i.e. round numbers and make your mental math easy). Remember to stay calm and walk your interviewer through your thought process.

Where to go for info?

- Glassdoor
- [Cracking the PM interview](#) (Chapters 13, 15)
- [The PM Interview](#) (Chapters 6, 23)
- [Interview Math](#)

Company Specific Questions

Company Specific

These questions are used to screen a candidate's preparedness and interest in the firm. The best way to prepare is to read as much as you can about the company. Have a solid grasp of its business model and be able to speak to how it can be improved/changed.

The Interview Cont.

Technical Questions

Technical

Depending on the position, tech interviews can be extremely technical. Certain roles (APM, data scientist, Software engineer, etc.) can even have coding aptitude tests for any languages listed on your resume.

Where to go for info?

- [Swipe to Unlock: A Primer on Technology and Business Strategy](#)
- [How to ace the Software Engineering Interview](#)
- [Cracking the PM interview](#) (Chapter 16)
- [Decode & Conquer](#) (Chapter 7)
- [The PM Interview](#) (Chapter 24)
- [CompSci Blog](#)

Market Knowledge Questions

Market Knowledge

These questions are used as a screen for employers to understand who is genuinely interested in technology. The best way to prepare is to read daily about tech news and global events.

Where to go for info?

- [Financial Times – Technology Section](#) (You have a free subscription as a Queen's student)
- [TechCrunch](#)
- [Wired.Com](#)
- [MIT Technology Review](#) (Array of well-researched newsletters – think of like a HBR business review of tech)

The Interview Cont.

While the categories outlined above cover the majority of questions you will receive in these interviews, some common questions to have prepared are as follows:

- Three ways they can improve their existing product(s)
- Three new markets they should enter (& what their market-entry strategy should be)
- Three new partnerships they should forge
- Understand what their competitive advantage is and how they can increase it (how do they differentiate themselves against their competitors)
- You MUST have a strong answer for "*Why tech*" and "*Why this company*", many firms will not hire candidates based on unimpressive answers from these two questions (as per comments from various tech recruiters)

The Interview Cont.

It should be known that for most positions in tech, while an advance level of coding knowledge may not be required, a basic understanding of code and data analytics are needed for roles even in positions like business operations or corporate development.

Use resources like Quora, Glassdoor, and designated Facebook groups to discover common questions from interviews for those specific roles. Spend some time preparing answers to the questions that you find trivial. Some additional resources for specific roles include the following:

Product Management

[Cracking the PM interview](#): Background

[The PM Interview](#): Background

[Swipe to Unlock: A Primer on Technology and Business Strategy](#): Background

[Product Management Crash Course](#)

Business Operations

[Decode & Conquer](#): Background

[Data Science Interview Guide](#):

[Lean Analytics](#)

[CompSci Blog](#)

The Interview Cont.

Before the Interview

Connect with employees at the company: Anything you can do to make your resume "more" than just a name in a pile. The best method is to connect with a few people currently working at the firm. This concept especially applies to start-ups and earlier stage tech companies.

Reach out to upper years: Talk to upper years who have successfully gone through both the interview process and summer internships in tech. They will be your best resource for how to prepare for the interview and may be able to connect you to someone at the company.

Do mock interviews: Practice really does make perfect. Call on both upper years and the CAC to do mocks. It may be helpful to do mocks with upper years you may know at other universities in order to gain a fresh perspective.

Prepare questions to ask the interviewer: Lasting impressions are important, and the best way to do that is to ensure you ask a good question at the end of the interview. The best questions are ones that are professional, well-researched, and specific to the company that you are applying to. Avoid asking anything that you could easily find on their website.

During & After the Interview

Bring the goods: Print off copies of relevant work you've recently done (relevant projects, any articles you've written, work from your summer, etc.) Be sure to bring this out and give it to the interviewer if he/she asks you about a relevant topic

It's okay to guess: While there may be questions you do not know the answer to, tech firms value honesty and problem-solving, as such feel free to tell the interviewer that while you don't know the exact answer, this is how you approach the question.

Follow-up: Send a personalized follow up email between 1-2 days after the interview.

Direct vs. Exit

The Debate

Numerous arguments exist surrounding whether entering the tech industry is best done directly out of undergrad or whether to exit from other roles, specifically banking or consulting. The following is a brief overview of the pros and cons of each:

	Pros	Cons
Direct	<ul style="list-style-type: none"> Hands-on experience in product-oriented companies Early exposure to the industry Target training programs More exposure to different roles Build tech network early 	<ul style="list-style-type: none"> Difficult to exit to different career field (i.e. finance, accounting etc.) Lower initial pay (especially for non-technical roles) More difficult to climb corporate ladder, particularly in tech giants
Exit	<ul style="list-style-type: none"> Enter into a more senior role immediately Access to roles that are not available through direct entry (e.g. strategic finance, corporate development, strategy) Ability to leverage multiple networks 	<ul style="list-style-type: none"> Less relevant experience given mostly non-transferable skillset Significantly more difficult to enter a startup Difficult to recruit for a product-focused role

APPENDIX



Conclusion

A Final Note

Recruiting can be a daunting process, especially if you are going against the grain. Much of pursuing a career path in tech involves taking initiative to network in the industry and discover opportunities. Compared to traditional OCR, this may seem exceptionally difficult. However, hopefully this guide has provided a holistic overview of the steps needed to take to be successful in any recruiting effort in the technology industry.

Queen's Commerce Alumni Placements



Thank You

A Special Thank You

QTMA would like to recognize the hard work and dedication of the entire Research Team who made this guide possible. Their commitment to ensuring Commerce students have a solid understanding of how to recruit and what the technology industry is all about propelled the success of the guide. Thank you!



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