# How to Win a High Tech Internship

# Author



This book is based on a workshop for students taught by Dan Phillips (pictured left), the Entrepreneur in Residence at the University of Massachusetts Boston Venture Development Center. During the last three years, he created an internship program that has placed over 110 students into paid internships in an elite group of venture-backed startups in Massachusetts. 73% received full-time positions upon graduation.

Dan has spent 25 years as an executive with four venture capital backed software companies. Two achieved successful initial public offerings and Fortune 200 companies acquired two.

The team at the Venture Development Center that works with Dan Phillips to place students into internships, William Brah (pictured center) and Edel Freitas, compiled the material for this book.

Book cover: Tsung-han Shen (seated), intern at Neurala, which builds brains for robots.

# Dedication

*This book is dedicated to Adrienne, a first generation college graduate from the University of Massachusetts Boston. In 2009 she earned a bachelor's degree in management science for marketing.*

*During the last semester of her senior year, Adrienne interned at a venture-backed startup providing data center infrastructure management software. Upon graduation, she was hired full time as Marketing Coordinator.*

*After two and one-half years, the company was acquired, and she was promoted to Marketing and Sales Operations Coordinator.*

*Eight months later, a big data company recruited Adrienne where she became Marketing Communications Manager. She has remained there for one year and three months.*

*Adrienne aims to be a VP for Marketing some day. That day might come soon. Another high tech company is recruiting her. Her current company countered with a huge bonus if she stays put.*

*We hope that this book will help you be as successful as Adrienne.*

# Table of Contents

# 1

# Why Intern at a High Tech Company

Interning at a high tech company is your chance to do something different and make an impact.



**Experience the excitement**

Behind the flashy headlines made by cool companies like LevelUp, iRobot and RunKeeper, there are thousands of intrepid individuals who show up early every morning and work late into the night creating the future of innovation in Massachusetts.

Peek inside and see what it looks like to change the world...one very long day at a

time, by watching this short [video](). And imagine yourself being part of the team.



The team atmosphere of emerging high tech companies is what makes them irresistible —working in a small group to achieve a big goal is energizing. You'll have more opportunity to learn by doing and working with the company founders than at a larger company.

If the company is successful, your salary, bonuses, profit sharing and other financial incentives can be huge. Even if you don't realize the big bucks, your hands-on, multi-functional experience will be a real asset for your long-term professional growth. Typically your marketability and compensation increase dramatically at a startup.

But beware. It is not all about partying, cool offices, ping pong, etc. Expect to do whatever is needed of you, from calling on a customer to signing for a delivery.

You will never regret the long hours and hard work. The exhilaration of being part of a successful startup produces pride and a sense of accomplishment that is extraordinary.

**Do you have what it takes?**
Right now, hundreds of the best high tech companies tackling the biggest, most difficult problems are searching for the best students for internships. Many of these companies are startups, and many more were founded less than a decade ago, but all of them have a common need – to attract the "innovators of tomorrow" to work with the "job creators of today."

These high tech companies want to expose you to why their team, company, and vision are fantastic, and then get you committed to joining full-time upon graduation before you explore other options.

High tech companies aren't just looking for engineers and scientists. In addition to people who design their product, they need people who communicate with current customers, acquire new ones, write copy, work with the media, and perform many other nontechnical tasks, too.

An entrepreneurial junior, senior or graduate student enrolled as a management information systems, computer science,

computer engineering, electrical engineering, mechanical engineering, graphic design, marketing, finance, business, economics, statistics, or communication major will have the foundation to apply for an internship.

But even if your background is outside these fields, and you are a builder or doer motivated to learn, you can apply for an internship. This book will help you understand how – and why – high tech companies might look at your application.

**Apply for an internship, right now**
It's never been easier to apply for an internship. All you have to do is submit your application, resume and cover letter to the [MassTech Intern Partnership](). Companies will contact you if there is a good match.

This book prepares you to be one of those. In Chapter 2, you'll learn about the types of development, marketing and sales intern jobs available. In Chapter 3, you'll learn how to get an interview and win an internship.

This book also helps you increase your chances of being offered a full time job upon graduation. In Chapter 4, you'll learn how a high tech company starts and grows, and how the development, market-

ing and sales parts of the company work together to succeed.

Then, we'll identify the key tools used in development, marketing and sales that you will use as an intern. Most high tech workers learned these on the job. You'll have an advantage if you practice them before hand.

# 2

# Types of Internships

For every engineer, there is non-technical person who works with the media, writes copy and performs many other tasks, too.

# What are you interested in?

There are many interesting jobs interns do at high tech companies. For every engineer, there is non-technical person who works with the media, writes copy and performs many other tasks, too.

Some high tech companies develop, manufacture, and sell hardware products. Virtually all of them have a software component either integral to their product or as part of their business processes. You will usually be expected to demonstrate strong skills in one or more software applications (covered in Chapter 4) such as a bug tracker or marketing dashboard that facilitate your day-to-day work.

Take a look at each job and decide which ones you are interested in (and are qualified for).

**Types of internships**

- Web Development

- User Interface Design

- Technical Writing

- Hardware/Software Engineering

- Market Research

- Marketing

- Sales

- Quality Assurance

- IT Support

**Web Development**

Web developers focus on making code that runs in the browser as well as on the server. Developers also understand web design as well as databases.

- Code new designs and update, standardize and re-factor existing parts of the web site

- Create sophisticated interfaces for in-browser applications using JavaScript, HTML and CSS

- Develop web applications using YUI, JavaScript, JSP, etc.

- Contribute to the continual improvement of the design and development process

- Work with marketing in an agile development environment for rapid iterations

**Qualifications**
- Strong background in Java, JavaScript, Java Servlets, HTML/CSS and complementary skills with Linux, Tomcat and MySQL

- Current and detailed knowledge of browser peculiarities

- A disciplined approach to development, documentation and testing

- Strong visual design sense and excellent graphics taste

- A constant desire to improve, learn more and take things higher

## User Interface Design

User interface design is all about making a user's interaction with software applications or smart devices as simple and efficient as possible, in terms of accomplishing user goals.

- Help to define user experience for existing and new features

- Develop user flows, mockups, wireframes and storyboards to help communicate design concepts

- Judge the usability of existing products and make constructive suggestions for change

- Work with other designers, product managers and engineers to improve the user experience

### Qualifications

- Talented graphic design or computer science student

- Wireframe/prototype product features (expertise in free or inexpensive easy to use tool a plus)

- Experience in GUI design and development is preferred

Technical writers document the inner and outer dependencies of the product, writing help files and manuals, assembly instructions, knowledge-base articles and end user guides.

## Technical Writing

- Write about the company's software and hardware and accurately document features, capabilities, and operating procedures

- Work with product development and management staff in documentation

- Ensure consistent style and quality for all documentation

- Ensure proper review of documentation

- Communicate verbal and written plans, deadlines, and progress/status to management regularly

**Qualifications**
- Excellent writing, grammar, punctuation and editing skills using Microsoft products

- Ability to effectively interact with engineers, product managers, and quality assurance staff to research, develop, and validate documentation

- Excellent time management, problem-solving, and organizational skills

- Good presentation, communication, and interpersonal skills

- Would thrive in a fast paced environment

- Experience with Wikis and Jira a plus

**Software/Hardware Engineering**

Engineering is all about defining requirements and designing and testing analytical instruments, programmable devices and control systems as well as software for business applications and embedded systems.

• Work with developers to iteratively improve existing internal tools

• Develop internal tools as needed

• Fix hardware and/or software defects at direction of senior engineers

• Support development testing of software product

• Code development

• Provide lab operation and management support

**Qualifications**

• Computer science, engineering or equivalent technical major

• Proficient in at least one object oriented programming language (ex: Java, C, C++, Python); and/or hardware languages (UML, HDL)

• Working knowledge of software development

• Passion for technology

## Market Research

Market research is all about business analysis and market planning, with lots of market sizing and customer data analysis.

- Examine and update previous market sizing work done in the company; plan and execute follow-on sizing projects

- Support financial analyst who updates company's longer-term business modeling

- Study on-hand customer data and create analysis to expose new insights about correlations among purchase patterns and demographics

- Crunch some product cost data and analyze results

**Qualifications**
- Business, mathematics, statistics, economics, or similar analytical education focus

- Good independent, self-motivated work skills

- Good quantitative analysis experience; proficient with Microsoft Excel and similar tools

- Experience summarizing and reporting data findings

## Marketing

Marketing is all about finding prospects, and nurturing them along towards a purchase by providing helpful content such as detailed product information, customer testimonials, etc.

- Manage and execute email marketing campaigns

- Market research to identify prospects

- Analyze web key performance indicators, help to establish action plan for web based lead generation (i.e., Google Analytics)

- Run Google SEO reports and help with analysis

- Update website content

- PR assistance

- Manage Blogs, Facebook, Twitter, LinkedIn (use these applications to generate leads)

### Qualifications
- Marketing or IT education focus

- IT education focus

- Proficient with Microsoft Office Suite

- Working knowledge of CRM, SEO, and key performance indicators

- Strong verbal and written communication skills

Sales is all about qualifying prospects close to buying, and then providing product trials, demos, estimates and price quotes.

- Manage CRM lead generation database

- Make inbound and outbound phone calls to qualify prospects and set up appointments

- Set up webinars, execute and analyze (i.e. Webex)

- Manage and update collateral

- Provide overall support to the marketing/sales team

**Sales**

### Qualifications
- Marketing education focus

- IT/analytics education focus

- Proficient with Microsoft Office Suite

- Practical work experience

- Working knowledge of CRM, SEO, and key performance indicators

- Strong verbal and written communication skills

Testing is all about intentionally attempting to make things go wrong to determine if things happen when they shouldn't or things don't happen when they should.

- Execute test cases on software/hardware product

- Identify potential product defects

**Quality Assurance**

- Troubleshoot and reproduce potential defects

- Report defects in test case management system (i.e. Bugzilla or other bug tracking system)

**Qualifications**
- Computer science, engineering or equivalent technical major

- Proficient in at least one object oriented programming language (ex: Java, C, C++, Python); and/or hardware languages (UML, HDL)

- Working knowledge of software/hardware development

- Passion for technology

**IT Support**

IT support is all about servicing both in-house engineers and end-users.

- Provide lab management and end-user support

- Diagnose and resolve application and operating system issues

- Install and upgrade in-house software

- Maintain in-house server infrastructure, including supporting hardware and software upgrades

- Manage end-user incidents in ticketing system

**Qualifications**

- Computer science or IT major

- Power user of two or more operating systems (e.g. Linux, OSX, Windows)

- Familiarity with web-based development, including HTML, JavaScript, CSS

- Familiarity with desktop applications (e.g. Microsoft Office)

- Strong technical troubleshooting skills

- Passion for technology

- Practical work experience

- Strong verbal and written communication skills

# 3

# How to Win an Internship

In this chapter, you'll learn how to success-fully communicate your skills, projects and objectives so that you get an interview and win an internship.

# Get the Interview

Companies are looking for evidence that you have depth in a specific area, such as knowing how to program in Java. And they are interested in what you have done or learned outside of your classes, in work experiences or free time.

In the following pages, we'll explain how to successfully communicate your skills, projects and objectives in a tailored resume so both you and a company find a good match.

**How to get an interview**

1. Describe Your Skills

2. Describe Your Projects

3. Describe Your Objectives

4. Tailor Your Resume

5. Submit Your Resume

## Step 1: Describe Your Skills

Following is a list of many of the skills high tech companies are looking for. Check the ones you feel are your strongest. Be honest. Remember, an internship is supposed to be a learning experience.

Engineering skills

- Frontend web dev (ex: HTML, CSS, JS, jQuery)

- Backend web dev (PHP, Rails, Django)

- Object oriented programming (ex: Java, C++, Python)

- Mobile dev (ex: iOS, Android)

- Databases (SQL / NOSQL; ex: MyN BVSQL, MongoDB, Cassandra)

- Data mining/analysis (ex: R, Octave, Weka, Orange)

- System administration (ex: Windows, Unix administration)

- Hardware design and simulation (SysML, HDL; ex: MATLAB, Simulink)

- User experience design (ex: Window-Builder)

- Quality assurance and testing (ex: Bugzilla, Jenkins)

- Technical writing/documentation (Wikis; ex: Confluence)

Marketing and sales skills

- Community building (ex: Twitter, Facebook, LinkedIn, Google+)

- Search engine optimization (ex: Google Analytics)

- Customer relations management (ex: Zoho, Salesforce)

- Marketing analytics and measurement (ex: Hubspot)

- Outbound marketing (ex: tele sales, trade shows)

- Online demos/training (ex: WebEx, Skype, SlideShare)

- Email marketing (ex: ConstantContact, MailChimp)

- Online advertising (ex: Google Ads, LinkedIn Ads)

- Customer support (ex: ZenDesk)

- Web analytics (ex: Google Webmaster Tools)

- Marketing collateral design (ex: InDesign, web CMS)

## Step 2: Describe Your Projects

High tech companies not only look at your skills, but what you've actually learned, built, or done outside of your classes, in work experiences or free time.

For example, you might be a power user of social media. Do you have an example of how you learned to use this skill to build a community of loyal followers that you inspired into action for a cause?

You might know a programming language. But have you built something at a hackathon that is useful for you and your friends?

To get started, write a short example of what you've learned, done or built for each of these three categories:

• Class project - whether it's something you built or a marketing proposal you developed.

• Recent internship or job - what you learned, what skills you gained, and the impact you made on either the project or organization.

• Anything else - personal or professional goal you've set for yourself, cool things you've done outside of work and class.

Try to weave into these highlights how you persevere in accomplishing goals despite obstacles, love constant collaboration and shared projects, and have an appetite for learning new technologies.

If what you've built or done is online somewhere, such as a personal or professional web site, like Seelio, make sure to provide the link in your resume.

## Step 3: Describe Your Objectives

The third step in writing a tailored resume is to describe your objectives. Use the following questions as a guide:

What type of internship are you seeking?

• Web Development

• User Interface Design

• Technical Writing

• Software/Hardware Engineering

• Market Research

• Marketing

• Sales

• Quality Assurance

• IT Support

• I'm not picky

What areas are you interested in working in?

• Enterprise/Big Data

• E-Commerce/Consumer Web

• Financial Tech

• Health Tech

• Robotics/Hardware

• I'm not picky

What size company would you like to work at?

• Startup

• Emerging

• Large

• I'm not picky

## Step 4: Tailor Your Resume

Now, use the information you just provided about your skills, projects and objectives to write a resume.

Say right at the top of your resume, in a heading called "Objectives," what kind of position you are seeking, e.g., web developer, marketer, etc. If you don't know yet, you can instead just put product development, or marketing and sales.

Under that heading, put your areas of specialty, e.g., front-end web development.

Then, put key selling points, e.g., what you have actually done or built in class, work or free time.

This will allow the recruiting company to immediately categorize you as someone who has what they (and you) are looking for.

Here's are examples of how you can write this section of your resume:

Example #1

Objective: Product development internship in an emerging robotics company

Areas of specialty: Mechanical engineering

Experience: Robotics is my dream and profession. Since high school, I have aligned myself with robotics clubs, competitions, research groups, and senior design projects in order to maintain my knowledge of the leading edge of robotics. As part of my graduate research, I built a fully functional humanoid hand for the next generation of robotics. This hand has 16 degrees of freedom including three abduction motors located inside the palm. All of this is controlled by a micro-controller located in the palm.

Example #2

Objective: Marketing internship in an e-commerce company

Areas of specialty: Internet marketing

Experience: As a summer intern, I led an intended-6-week internet migration update in 3 weeks, including keyword strategies and search engine optimization. I also created sales playbooks communicating the value proposition to sales representatives, and organized brand management as I developed internal and external brochures and presentations. My final project was to market a game and school learning tool, to high school and university students and teachers. I contacted professors, extended the branding, and marketed the experience of interacting with the web-based program.

**Step 5: Submit Your Resume**

Go to the MassTech Intern Partnership, and submit your resume and cover letter. Companies will review your application and contact you for an interview if there is a fit.

# Win the Internship

**Prepare for the Telephone Interview**
Be prepared at all times for a company to call you for an interview. First, expect a company to call you for a 15-minute telephone interview. The purpose of the call is to verify that you have the skills and personality the company is looking for.

Here's how to prepare:

- Practice describing your skills, projects and objectives without using any "ums" and "ahs."

- Rehearse telling a story about your experience. Try to weave into these highlights how you persevere in accomplishing goals despite obstacles, love constant collaboration and shared projects, and have an appetite for learning new technologies.

At the beginning of the call, ask the company to describe the job they seek to fill, and its requirements and qualifications, so you can target your responses.

If there is a match, you'll be invited to an in person interview.

**Prepare for In-Person Interview**

Before you meet the company in person:

- Ask if the company can provide you with a written job description

- Fully research and familiarize yourself with the company website

- Study and internalize every word of the internship description

- Revise your resume so it is consistent with the job description and fully appeals to the company

- Be ready to verbally articulate the story of your work experience

- Write responses to each of the requirements and qualifications on the intern job description

- Research tools required and download trials to begin learning

To prepare for the on-site meeting, bring a notebook with all of your materials.

**What to Ask**

How do you figure out whether or not a particular company is worth joining? Ask these three questions:

1. What am I going to learn in this job?

Make sure you look at each job within the broader context of your career goals — where are you hoping to end up? Does this job help you get there in terms of skills and experience?

2. What experience do the founders and company leadership have?

You'll probably learn more by joining a company with a team that has successful startup experience or a track record of strong growth.

3. Can the internship lead to a full-time job when I graduate?

Verify that the company is using the internship as an extended interview and what you'll need to accomplish to join full-time upon graduation.

# 4

# How to Hit the Ground Running

**Increase your chances of being offered a full time job**

# Learn How a Company Starts and Grows



Interning is a great opportunity to learn about how high tech companies are formed while contributing to their success. Even more mature high tech companies are continually reinventing themselves in order to grow, and the most dynamic companies will still exhibit many of the traits of a startup.

If you arrive with a basic understanding of how the product and customer development parts of the firm operate, you will quickly assimilate into the company as a competent, valuable part of the team.

By listening to these short, 2-3 minute lectures, you'll understand what each part of the company must do to help the business succeed as the company progresses from trying to figure out if there are any customers who might want their product to gearing up their marketing and sales operations.

The lecturer is Steve Blank, a seasoned Silicon Valley entrepreneur. These lectures are from his popular course "How to Build a Startup" offered for free on Udacity.

**Startup versus large companies**
Lecture 1: Startups are not smaller versions of large companies.

**Strategy of building a startup**
Lecture 2: Forget what you might have learned about how a startup builds a business.

**Process of building a startup**
Lecture 3: Startups use a very different process to build a business.

**Agile versus waterfall development**
Lecture 4: Engineers go about developing products in a unique way.

**Customer and product development**
Lecture 5: Engineers use an iterative development process with customer feedback to build early products.

**Organization of a startup**
Lecture 6: Startup company founders, not middle level managers, actually drive marketing and sales.

**Mission of a startup**
Lecture 7: A startup is a fledgling company searching for a repeatable and scalable business model.

**What is a business model**
Lecture 8: The business model is how a company creates and delivers value for its customers and itself.

**Unique value proposition**
Lecture 9: The heart of the business model is how the company meets a customer need better than the competition.

**Hypothesis testing**
Lecture 10: The company tests the market to find out if they have a product that meets customers' needs before building the product.

**Customer development**
Lecture 11: Four steps to customer development.

**Minimum viable product**
Lecture 12: The company builds a minimally viable product to get customer feedback.

**Pivot**
Lecture 13: The company more often than not changes both the product and how it is

sold as a result of early customer feedback.

**Customer discovery**

Lecture 14: The company goes through customer feedback cycles multiple times before getting ready to build and sell the product.
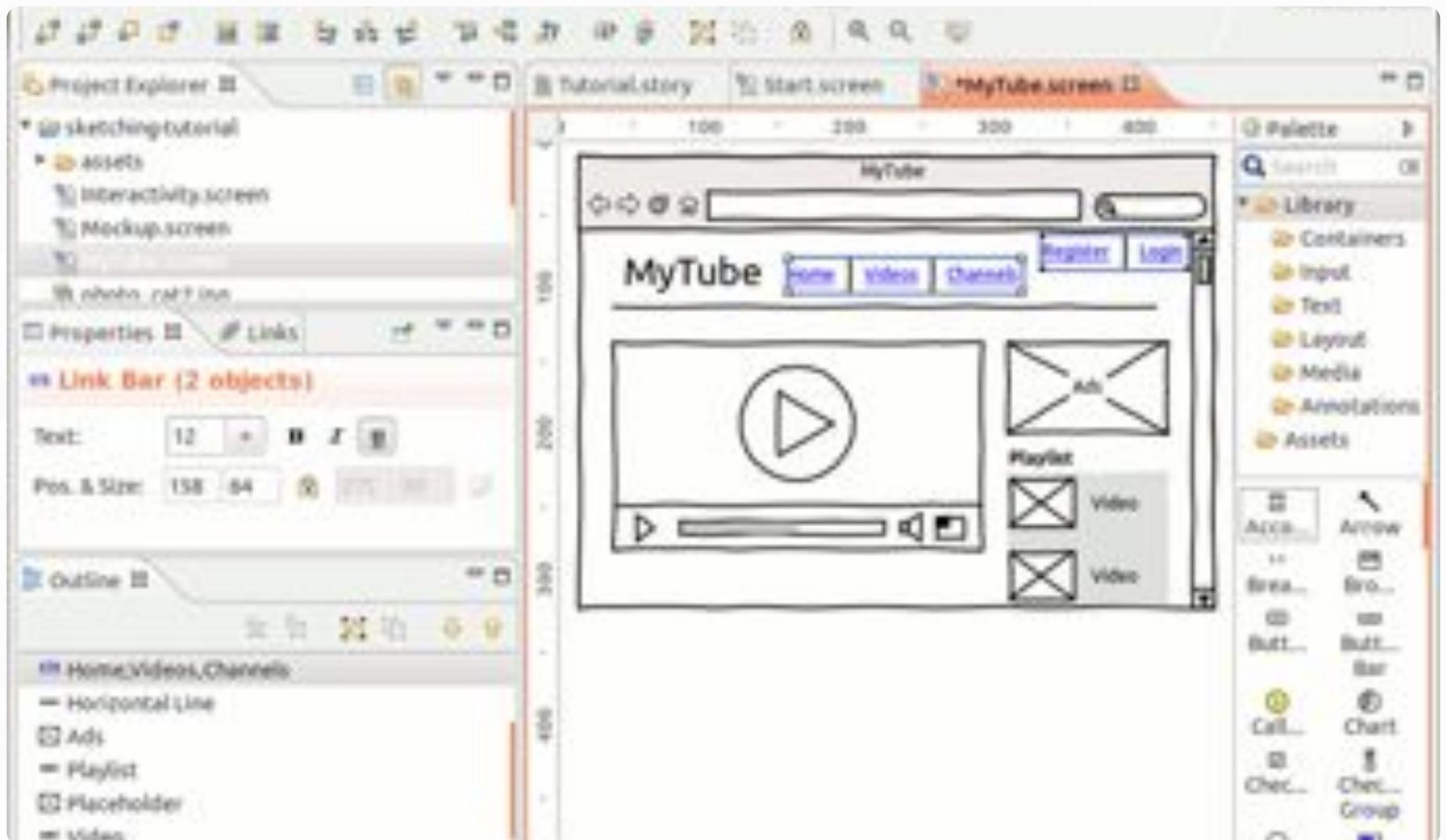
**Customer validation**

Lecture 15: Before ramping up marketing and sales, the company test sells the product.

**Customer creation**

After the company finds the correct methods for acquiring and converting customers, it gears up their marketing and sales operations.

# Key Product Development Methods and Tools



Each company has favorite methods and tools. We'll cover the most popular or open source versions of the key product development methods and tools.

Most high tech workers learned these on the job. You'll have an advantage if you understand them before hand.

**Agile Development**

The product development process often follows an agile methodology, which means smaller pieces of working functions are "launched" in a high frequency instead of being delivered as an all-in-one package after a long period of time.

For each iteration, the engineering team defines customer requirements; develops specifications; writes and tests the software or hardware; and releases an alpha, beta and general availability version.

The development process involves several moving pieces at once, with members of the team moving quickly between various tools and different roles.

Watch this short video about the "scrum" process.

Engineers clarify customer requirements with a mock-up technique called story boarding or wire framing. It is a series of sketches or pictures to demonstrate an end-to-end solution for a user scenario.

You generate requirements from the results of the storyboard (with traceability back to the specific element within the storyboard), which are described in a product requirements document or product spec.

## Storyboards and Wireframes

As an intern, you'll be assisting the senior engineers document customer requirements. A tool like WireframeSketcher helps to quickly create storyboards, mockups and prototypes.

Learn more about WireframeSketcher.

## Prototype Development

Moving from the storyboard to an interactive simulation of the product is called prototyping. You'll assist senior engineers develop code and (in some cases) hardware for the prototype.

A prototype typically simulates only a few aspects of, and may be completely different from, the final product. It allows the engineering team to test high-risk aspects of a design and to get valuable feedback from the users early in the project, and some insight into the accuracy of initial project estimates.

In web development, for example, the initial prototype includes only user interfaces, consisting mainly of HTML pages. Next the screens are programmed and made fully functional using a simulated services layer. In the third phase the services are implemented.

In hardware development, computerized simulations or breadboard models will be created which represent the real design.

There are automated design tools which plug into Eclipse (described in the next section) and transform the prototyped functional requirements into a detailed design document.

## Integrated development environment

An integrated development environment (IDE) is a single computerized workspace in which all software and hardware development is done. It typically provides many features for authoring, modifying, compiling, deploying and debugging software and hardware.

The IDE is used until the engineer is completely satisfied with the code. At that time, other tools, like the automatic test, build and integration systems such as Jenkins (covered later in this chapter) kick in.

IDEs are designed to maximize programmer productivity by providing tight-knit components with similar user interfaces. For example, code can be continuously parsed while it is being edited, providing instant feedback when syntax errors are introduced.

Eclipse is the free and open-source IDE upon which many development frameworks are based. Eclipse is comprised of a system of lightweight plugins for software and hardware developers.

As an intern, you'll be assisting senior engineers develop system-level integration and test strategies to ensure customer requirements are satisfied. Then you'll assist senior engineers set up and customize the IDE with all of the plugins and tools you develop that automate the build and release process.

Learn more about Eclipse.

## Issue tracking

An issue tracking, or defect tracking system allows you to track bugs and code changes; communicate with team-mates; submit and review fixes; and manage quality assurance.

The typical life of a bug goes something like this: A tester identifies a new bug. New bugs are created either as uncon-firmed, new, or assigned. Typically, a developer will accept a bug (or assign it to someone else). Once the developer has corrected the bug, he or she can mark it as resolved, speci-fying how it was resolved: fixed, invalid (not a bug), dupli-cate, won't fix, and the (in)famous "works for me." A re-solved bug isn't officially closed until someone from quality assurance checks it out. Once quality assurance has con-firmed the correction, the bug becomes verified. It remains in this state until the product release containing the fix actu-ally ships, at which point it is closed.

As a quality assurance intern, you'll assist senior engineers troubleshoot and report defects. Bugzilla is a popular tool that helps the development team get organized and commu-nicate effectively. There is a plug-in that integrates Bugzilla into the Eclipse workbench.

Learn more about Bugzilla.

## Version control

As a software development intern, you'll assist senior engineers develop code. So, you need to be familiar with "source code control."

Source code control refers to the practice of storing files containing program source code (and other project artifacts) in a common repository. Using source code control, multiple developers can work on the same project (including the same project file) at the same time. A repository can be queried for a detailed listing of the changes that occurred each time a file was edited. Files under source code control that have been locally modified can also be reverted to their previous state.

Changes are usually identified by a number or letter code, termed the revision number. For example, an initial set of files is "revision 1". When the first change is made, the resulting set is "revision 2", and so on. Each revision is associated with a timestamp and the person making the change. Revisions can be compared, restored, and with some types of files, merged.

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. There is a plug-in which allows you to use Git directly within the Eclipse IDE.

Learn more about Git.

**Project management**

Project management tools like Launchpad, a collaboration and hosting platform for software projects, make it easy to share code, bug reports, translations and ideas across projects.

These tools are designed to enable collaboration among programmers, users, and the wide spectrum of other kinds of contributors who participate in the process of building and deploying software.

Launchpad's sidekick is a distributed version control system called Bazaar. Bazaar encourages a development workflow that makes heavy use of branching. When an individual contributor wants to work on a project, they create their own branch into which they push their changes. When the changes are ready, the contributor will propose merging the branch back into the trunk. The maintainers will evaluate the code and then either perform or reject the proposed merge.

There is an Eclipse plugin that integrates with Launchpad. Developers can also automatically import code of their projects on Git.

Learn more about Launchpad.

## Quality assurance

Continuous integration and testing applies quality control to small pieces of effort, frequently. It aims to improve the quality of software, and to reduce the time taken to deliver it. It is used during the entire development process, which includes requirements definition, software design, coding, source code control, code reviews, change management, configuration management, testing, release management, and product integration.

It verifies that the product implements the requirements; validates that the requirements satisfy the customer; and tests the product to make sure it is defect-free.

There are automated tools such as Jenkins used for building and testing software continuously during the development. Jenkins works with Eclipse.

For each new revision pushed into the source control management system (such as Git), Jenkins wakes up and starts a "build" for the project. It is especially used when distributing applications to beta testers in the field, gathering feedback and maintaining control over the distribution.

Jenkins allows you to distinguish good builds from bad builds by introducing the notion of 'promotion'. Put simply, a promoted build is a successful build that passed additional criteria. Promoted builds will get a star in the build history view, and it can be then picked up by other teams, deployed to the staging area, etc., as those builds have passed additional quality criteria.

Learn more about Jenkins.

## Alpha and beta testing and release

Jenkins is especially useful during alpha and beta testing. Alpha testing is simulated or actual operational testing by an independent test team at the company's site. Beta testing comes after alpha testing and is done by a limited audience outside of the engineering team. The software is released to groups of people so that further testing can ensure the product has few faults or bugs.

A release candidate is a beta version with potential to be a final product. In this stage of product stabilization, all product features have been designed, coded and tested through one or more beta cycles with no known showstopper-class bug.

General availability is the point where the software has been made available to the general market. Security and compliance tests have been completed, marketing collateral is finished and is available in as many languages as deemed necessary for the target market.

Often an end product is the sum of the code provided by many organizations and individuals involved in the product. A document called a bill of materials fully records the vendor names and part numbers, including details to track vendor upgrades.

The bill of materials serves as the primary reference file for product data when transferring product information from the original equipment manufacturer to the electronic manufacturing services provider and from the electronic manufacturing services to its vendors and suppliers.

After the product is released, installation and customization (such as by setting parameters to the customer's values) may be necessary.

As an intern, you'll provide end-user desktop support; diagnose and resolve application and operating system issues; and manage end-user problems in a ticketing system.

**Ticket system**

Most companies will have an idea of the questions that are most likely to pop up before the helpdesk is launched and can create an initial set of responses for these, but it's essential to monitor queries and look for trends. These trends can signal the need for a canned reply or knowledgebase article, or may be cause to look into having certain features simplified and made more easily apparent for the average user.

Tools like Zendesk provide the support team with a holistic view of your customers and their support issues. When working on a ticket, they will have instant access to unified customer information, be able to search the agent knowledge base, and pull relevant data from other areas of your business.

Learn more about [Zendesk](Zendesk).

# Key Customer Development Methods and Tools
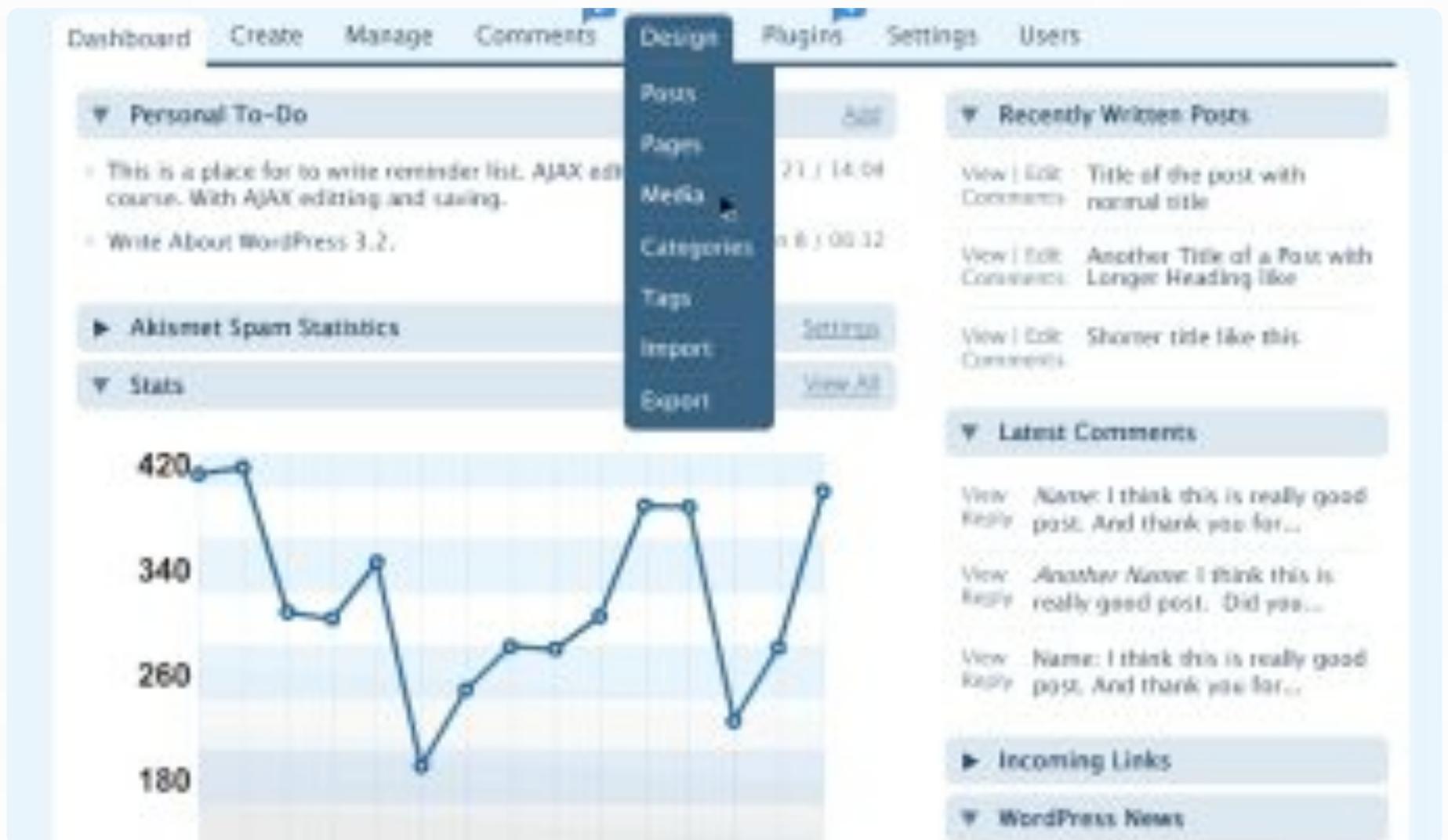


Each company has favorite methods and tools. We'll cover the most popular or open source versions of the key ones used in customer development. You'll have an advantage if you understand them before hand.

**Customer relations management**

Your workbench for managing your company's interactions with current and future customers is called a customer relationship management (CRM) system. It is a software program to organize, automate, and synchronize sales, marketing, customer service, and technical support.

The core of a CRM is a centralized contact database for tracking and recording every stage in the sales process for each prospective client, from initial contact to final disposition. It can also be used to create, assign and manage help requests made by customers.

As an intern, you' be managing the CRM lead generation database. That means entering contact information and running reports on their progression from a lead to a customer. The most commonly used CRM is called Salesforce.

Learn more about Salesforce.

**Email marketing**

As an intern or entry-level employee, you will execute and manage email marketing campaigns.

Good email marketing involves effective subject line writing (getting your messages opened), your distinctive voice (getting those messages read), and delivering specific quality content your leads need and will share with others (inspiring referrals and word-of-mouth).

Email marketing tools such as ConstantContact allow you to create your email marketing database, segment and target your email campaigns, and store all of your contacts and analytics data in one place.

To optimize your email marketing you need to test constantly to get better results (e.g., changing messaging, time of day email is sent, changing the design, etc.)

Learn more about ConstantContact.

## Social media marketing

By using social media to provide content that your prospects want to receive and talk about, you build relationships and communicate directly with them. The aim is to engage prospects and convert them to customers.

The key to community building is to learn where your community is and what they care about. Engage where they engage on WordPress, Google+, Twitter, Facebook and LinkedIn, and read and share the content that matters to them.

Content should help prospects validate that they have the need you are meeting and introduce your solution. It should also help them determine whether you are the best fit. Proof points such as customer testimonials, reviews, etc., are helpful.

For example, the #measure Twitter community is a vibrant, enthusiastic group of data experts discussing marketing and web analytics. A marketing analytics company would tap into this existing and engaged audience to share their unique content and grow their community.

Tools like HootSuite allow you to manage all of your social media accounts, efficiently track conversations and measure campaign results.

Learn more about HootSuite.

High tech companies monitor information about interactions on a website to track the referrer, search keywords, IP address, and activities of the visitor. With this information, a marketer can improve the marketing campaigns, site creative content, and information architecture.

**Internet marketing**

As an intern or entry level employee, you'll be analyzing statistics about the number and quality of leads and customers your marketing efforts actually drive, and helping to establish an action plan for web based lead generation. You'll also be running search engine optimization reports and helping with analysis.

Tools like HubSpot make it easy to monitor every channel and every touch point with your prospects. With other tools like Google Analytics, you can easily track clicks for your site from traffic sources such as paid AdWords. By identifying the search queries that drive traffic to your site, you can also learn which keywords make the most sense for your business objectives.

Learn more about Google Analytics.

Your company has created a profile of your ideal customer. As an intern, you'll be creating lists of these ideal customers. There are "list brokers" that allow you to rent or purchase a relevant list. However, one of the best sources of a prospect list is one that your company develops from the contacts made at speaking engagements, trade shows or networking events.

**Target list prospecting**

The biggest advantage to this list is that the prospects have already had some contact with you and your product or service. When you call them or send them an email, there is an affinity.

The first step in prospecting is to verify the prospect list you just built. You'll have a calling script that will quickly help you verify the contact information. Many times, front-office staff or an assistant will be able to validate the information and the name of the decision maker.

As an intern, you'll make calls to qualify prospects and set up appointments and enter this information in your customer relations management lead generation database.

After the target list is completed, and verified, an outbound team rep calls them. That rep could be you!

You'll have a list of prospects' names, titles, company names and phone numbers, and a reasonable expectation that everyone on the list is a valid potential buyer.

## Outbound prospecting

When you call, you'll be presenting a quick "prospecting offer" that clearly states who you are, what you are selling, and one or two features of your product or service. You finish up with "Is that what you want?" If yes, the prospect is handed to a sales person (a "closer") who will further qualify the prospect by doing an online product demonstration.

Short-term success is defined as setting a follow-up sales appointment with a decision-maker who wants the result you can produce, and is willing and able to pay for that result now.

## Inbound prospecting

Marketing is doing its job when leads pour in via calls to your 1-800 number or completed forms on your website, seeking additional information.

As in outbound prospecting, the objective now is to get the highest quality leads to the sales team. So, before sending them over to the sales team for follow-up, you'll call the lead and ask if they are willing to hear a sales presentation.

You'll use the CRM contact database to record what's on the mind of the lead so the sales rep knows what to email them or talk to them about during a conversation.

Sharing product information with potentials and conducting product demonstrations on the web is a key to getting customers ready to make a purchase.

As an intern, you'll set-up, execute and analyze webinars, and manage and update marketing and sales collateral such as videos, white papers and product data sheets.

**Initial prospect call**

Memorable demos use a time-compressed story based on a "day in the life" of your prospect. This style demo mirrors what happens in their word, making it easy to follow and remember.

Tools such as GoToWebinar, WebEx and Skype are used to do web demos. As an intern, you'll set up online appointments; and set up, execute and analyze webinars and demonstrations.

If you're not careful though web demos can be your worst nightmare. Getting everyone logged in can be a big hassle. So can poor audio and video quality. Have a back channel (phone number and or email) for those having problems.

Learn more about WebEx.