

Software

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setu.ie
INSPIRING FUTURES



Software

Support
business
functions

Productivity
tools

Games

Range from millions
of lines of code

or

Simple app for mobile device

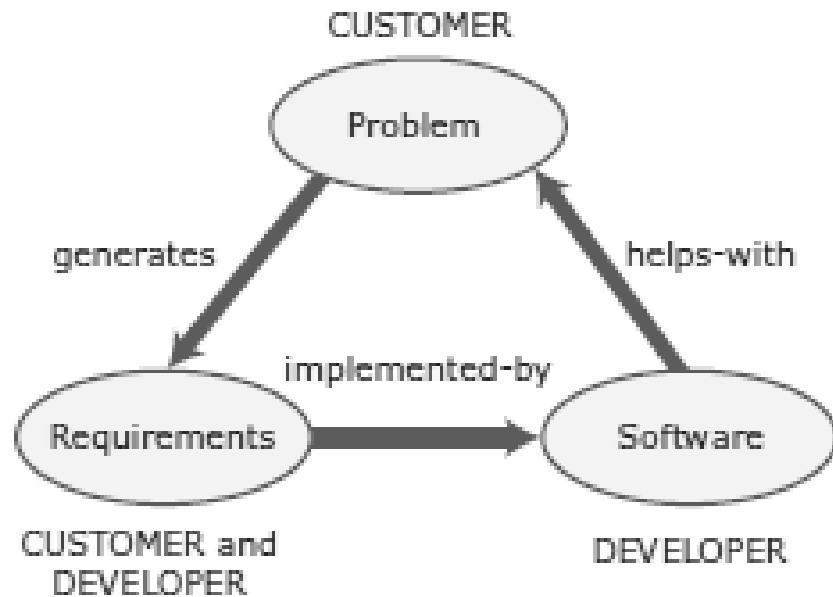
- Software products are generic software systems sold to governments, businesses and customers.
- Software projects were setup to develop one off systems with the software system based on a set of software requirements
- Typically, the contract between the client and software development company included a requirements document, with a specification of the software to be delivered.

Software

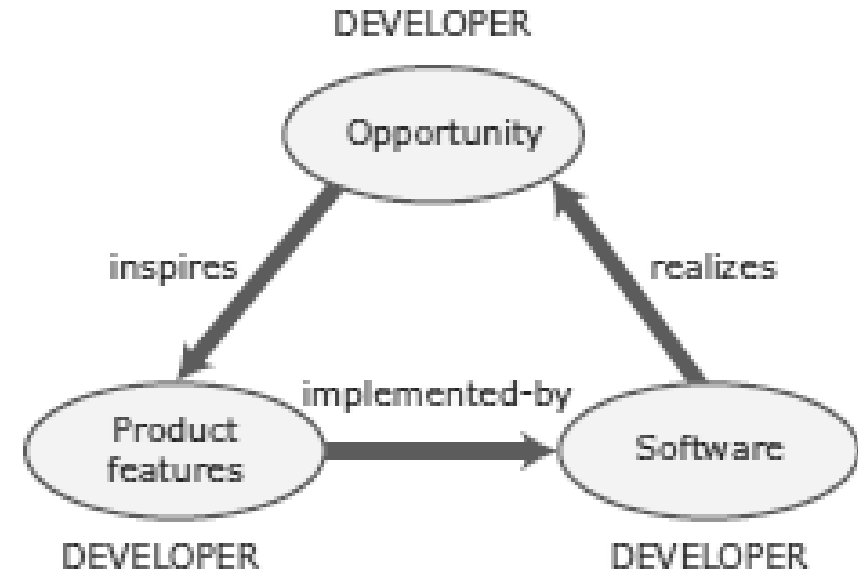
- A lot of assumptions, that as software developers we need to spend significant time on preparatory work before starting to write a program.
- Spending significant time getting the requirements right and drawing graphical models of the software.
- However, most businesses aren't reliant on custom software.
- They use generic software that designed to solve common business problems

Project based vs. Product based software development

Project-based software engineering



Product-based software engineering



Software Client in software development projects

- Software projects involve customers who decide on the functionality of the system and enter into a legal contract with the software development company.
- As company changes the supporting software changes.
- The company decides on and pays for the changes.
- Software often has a long lifetime and costs of changing large systems after delivery exceeds initial software development costs.

Customers
current
problem and
current
processes

They form the
basis for the
software
requirements

They specify
the software
to be
implemented

Software Client in software product development

- Software products are specified and developed in a different way.
- There is no external customers who create requirements that define what the software must do.
- Potential customers are considered but they can't insist that the software include particular features or attributes.
- The software development company will choose when changes are made to software and released to users.

Software developer decides on the features of the product

When new releases are to be made public

The platforms on which the software will be implemented

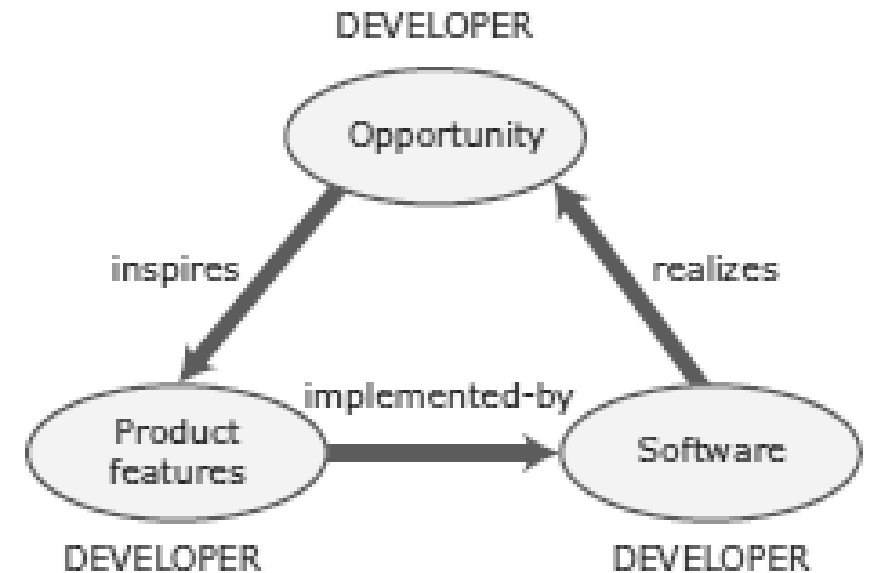
Product based software development

Development costs spread over large customer base so product based is usually cheaper.

Buyers of the software have to adapt work practices to the software as it hasn't been developed with the organisations needs in mind.

A risk developer will stop supporting the software.

Product-based software engineering



Opportunity and delivery in software product development

- Starting point is an opportunity that a company has identified to create a viable commercial product.
- An original idea, an improvement over an existing system, or a generalisation of a system that was developed for a specific customer
- The developer decides on the features to include in the software product.
- These features are designed to appeal to potential customers to create a viable market for the software.

Project based vs. Product based software development

In product development the product company decides when to change their product or take the product off the market.

If product doesn't sell well a company can stop its development.

Custom built software in a project based approach usually has a long lifetime and has to be supported throughout that lifetime.

In product development getting a product to customers becomes critical. Excellent products often fail because a inferior product reaches customers first. Customers are reluctant to change products after they have invested time and time in their initial choice.

Software Product Lines vs. Platforms

Product lines are systems designed to be adaptable to meet customers' specific needs by changing parts of the source code.

Platforms provide a set of features that can be used to create new functionality.

Software Product Lines



- Communications Software used by Emergency Services.
- In this case we have a core product that includes basic communication services
- **What might those typical services be:**
- **Receive calls, log calls, initiate an emergency response, and pass information to vehicles.**
- But each customer (in this case different emergency services) may use different radio equipment, and their vehicles may be equipped differently.
- Core product is adapted so that each customer can use the communications software with the equipment they have.

Platform



- A software (software and hardware) product that includes functionality so that new applications can be built on it.
- WeChat is an example of a platform.
- It provides an extensive set of product functionality but also provides support for creating “mini apps”. These apps have new features that may be used by an individual or business.

When developing software or information systems some questions to consider:

WHAT is the product that you propose to develop? What makes this product different from competing products?

WHO are the target users and customers for the product?

WHY should customers buy this product?

- ■ FOR (target customer)
- ■ WHO (statement of the need or opportunity)
- ■ The (PRODUCT NAME) is a (product category)
- ■ THAT (key benefit, compelling reason to buy)
- ■ UNLIKE (primary competitive alternative)
- ■ OUR PRODUCT (statement of primary differentiation)

Example:

For a mid-sized company's marketing and sales departments who need basic CRM functionality, THE CRM-Innovator is a Web-based service that provides sales tracking, lead generation, and sales representative support features that improve customer relationships at critical touch points. Unlike other services or package software products, our product provides very capable services at a moderate cost.

Answer key questions to the example above?

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FOR a mid-sized company's marketing and sales departments **WHO** need basic CRM functionality, **THE CRM-Innovator** is a Web-based service **THAT** provides sales tracking, lead generation, and sales representative support features that improve customer relationships at critical touch points. **UNLIKE** other services or package software products, **OUR** product provides very capable services at a moderate cost.

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What A web-based service that provides sales tracking, lead generation, and sales representative support features. The information can be used to improve relationships with customers.

Who The product is aimed at medium-sized companies that need standard customer relationship management software.

Why The most important product distinction is that it provides capable services at a moderate cost. It will be cheaper than alternative products.

Technology Venture Idea Generation



The question that all aspiring technology entrepreneurs need to answer in their own unique way is: What business should I start?

Aspiring entrepreneurs are often confounded by the challenge of developing a credible idea for a new product or service.

- + Introduce a four-step process to generate and crystallize ideas for a new technology product or service.
- + This process will help any new entrepreneur identify a target market, develop and refine a product-service concept tailored to that market, test various business models for the chosen market, and explore how to acquire customers.

- + Developing ideas into thriving ventures is an iterative process.
- + Most ideas aren't hatched fully formed, but rather change and develop over time as new information is gathered and results of experiments are analysed.
- + Expert entrepreneurs know that regardless of how well they understand a market, it will nearly always behave differently than they expect— sometimes radically so.
- + Expert entrepreneur is determined to make his or her idea successful, but he or she has also learned to be flexible and adaptable.
- + Adhering to an original idea out of stubbornness or pride will not make a bit of difference to customers. Ultimately, the goal of every technology entrepreneur is to create value for customers.

Idea Generation

1

**Step 1:
Identify a
Point of Pain**

2

**Step 2:
Innovate a
product or
service**

3

**Test business
models**

4

**Explore how
to acquire
customers**

It is much easier to start a new venture if you have some idea of what your target market will be

- Every technology venture has to start with the first customer, and it is far easier to get your first customer if you identify your target market, thoroughly study its pain points and tailor your offerings to that market.

Step 1: Identify a Point of Pain

MINI-CASE

Birchbox Addresses Customer Pain Point

Birchbox is a pioneer of what is known as “subscription e-commerce.” The business model is based on registered users receiving a monthly box of personal care products. After trying the products, Birchbox provides opportunities for users to purchase full versions of the products via its website. The company sends its 400,000 registered users one new box per month at a price of approximately \$10/month. This part of the business model generates revenue, but not much profit. Birchbox founders knew that profitability would only result from converting the users into buyers of the products they were sampling. Birchbox co-founder Katia Beauchamp said “When customers find a product that they love from Birchbox, we try to make it as easy as possible for them to shop and then transact.” Apparently, the model is beginning to work. One upscale cosmetics brand indicated that over 11% of Birchbox users who received a free sample of their product were converted into buyers. The company, founded in 2010, was continuing to grow. In 2013 it reported that its e-commerce sales were on track to triple, with 25% of sales generated through its e-commerce store and more than half of its users making purchases there.

Sources: Adapted from K. Mai-Cutler, “Birchbox Says Its Subscription Model Is Working, with 25% of Revenues Coming from Its E-Commerce Store,” *TechCrunch*, August 15, 2013; D. Ransom, “Birchbox and Changing the Way We Shop,” *Entrepreneur.com*, May 16, 2012; C. Rubin, “Hayley Barna and Katia Beauchamp: Founders of Birchbox,” *Inc.com*, June 27, 2011.

- You may already have a rough idea of the product or service that you'd like to take to your target market.
- Be careful, however, not to be satisfied with your initial intuitions about what your customers want.

Step 2: Innovate a Product or Service

MINI-CASE

Coffee Joulies Keeps the Temperature Just Right

David Jackson wanted to start a business with his friend and fellow engineer Dave Petrillo based on their mutual interest in phase-change materials. One morning, during his usual routine, Jackson was making a latte for himself. He lamented that it would take 20 min to make the perfect latte, but once it was ready it would be either too hot or too cold to drink. When thinking about how to fix the problem, he realized that phase-change materials could be the solution to that problem. When he called his friend to talk about it, they realized that they were onto something. As a result of thinking about this common problem, Coffee Joulies were born. Coffee Joulies are metal beans about the size of ice cubes that are filled with phase-change material. When placed in coffee, the Joulies absorb excess heat to cool the coffee to 140 degrees. When the coffee cools below that temperature, the Joulies release the stored-up heat to keep the coffee at a stable temperature for up to 5 h. Jackson and Petrillo sought funding for their idea via Kickstarter and received more than \$300,000 in pledges. Jackson and Petrillo combined their passion for working with phase-change materials with their everyday experiences to generate an idea for a new product. The product would not have much merit if Jackson were the only latte drinker in the world. But they both knew that latte drinkers comprise a large target market opportunity for their product idea.

Source: Westervelt, A. 2013. "A Morning Routine Sparked a Startup." *The Wall Street Journal*, August 19, p. R7.

Some sources for great ideas

- “Look at what is bugging you” (David Cohen, Founder and CEO of TechStars): Startups are often based on a problem that needs to be solved. Identifying the problem usually happens while you’re busy working on some project. The idea for Coffee Joulies came to David Jackson while he was working hard to make the perfect latte.

Some sources for great ideas

- “Be present in life” (Angela Benton, Founder and CEO of NewME Accelerator): Many successful entrepreneurs do their brainstorming around problems in which they are personally invested. Businesspeople tend to ignore their creative sides. Innovation often comes from maintaining a balance between technology and the arts.

Some sources for great ideas

- “Attack practical problems” (Brian Spaly, Founder and CEO of TrunkClub): Spaly advocates making a mental or actual note whenever you encounter a customer service or customer experience that is frustrating. Ask yourself whether you can come up with a solution to the problem you’ve encountered. Spaly's insight was that men's clothing stores were not helping men achieve their own unique style. His company, TrunkClub, is a men's clothing store that asks men to enter information about their style preferences, sizes, and stores in which they shop to match them with a personal stylist.

- A business model is simply the way a business makes money.
- Companies make money in a variety of ways, and often it takes a bit of creativity to determine which business model will be right for your venture.

Step 3: Test Business Models

- A more involved process than aspiring entrepreneurs think.
- Customers will more often than not respond in unexpected ways when presented with new products.

Step 4: Explore How to Acquire Customers

Non-Traditional Ideas

- + If your search for a venture idea is not going well, you may be able to find inspiration via some nontraditional sources.
- + However, you should build a business that is a good fit with who you are.
 - ✓ Read Alternative History
 - ✓ Visit New Places and Experience New Things
 - ✓ Meet the leaders with cutting edge ideas (TED talks)
 - ✓ Team Up

In summary

- + We examined our four-step process for generating an idea for a product or service.
- + Innovating a product or service
- + Gaining customers
- + Product development vs Project development