# The Innovation Estimate [Draft-01]
## How to Stress Test Your Ideas

Sirvan Almasi

## Abstract

Innovation often takes well resourced and managed organisations by surprise. The sudden realisation of the impact of innovation leads to their downfall. Their counterparts, startups, are risky and frail initiatives that are doomed to fail from the beginning. Often at a high cost to their founders and investors. In this paper we create an analytical framework, The Innovation Estimate, that guide innovators towards a plan. The framework is based on and motivated by the British Army's Combat Estimate. We take practical ideas from the military, intelligence analytics and management theories. These ideas are then applied to the process of innovation.

## 1 Introduction

Innovation is an important aspect of our reality. However, we seldom do get it right. Less than 50% of businesses make it to year 5 according to the ONS. According to the CBInsights the top three reasons why startups fail are: 1) Running out of cash; 2) No market need, and 3) Getting out-competed. We believe the problem is in the lack of proper analytical work before execution. There is also a disconnect between what we believe and what the object reality is–cognitive biases and skewed beliefs can lead to this.

Our ideas stem from our observations of the world and how we think of the world. This raises the obvious problem that our observations are opinionated and biased. For example, two individuals could have completely different opinions about the performance of the FTSE100 tomorrow, despite them having access to the same information. Whilst we like to believe that we are rational and logical agents, we are under constant influences that lead to psychological biases and distorted thinking. In 1943, the chairman of IBM famously said "I think there is a world market for maybe five computers." He could not have been more wrong. In this paper we tackle the problem above with respect to Software Engineering. We believe this tainted and biased view of the world around us is what leads to miscalculations in the successful execution of our innovative ideas.

The aim of this paper is to create an analytical framework (The Innovation Estimate, see Section 2) that will help analyse problems and the landscape related to that problem. In doing so, we hope to minimise cognitive biases and create a hypothesis driven execution of ideas.

The Innovation Estimate (TIE) is not to be confused with frameworks like that of SCRUM. Where SCRUM is a framework that helps people work together. SCRUM is often mistaken for a method of creating excellent solutions. Throwing a problem that is poorly analysed at SCRUM will lead to poor results. Problem identification and analysis is the most important step—it is the winning factor. Regardless of the efficiency of a team in using SCRUM, they will only execute on the problem, vision and assumptions you throw at them. It is not a coincidence that some of the most successful startups have emerged from the founders themselves experiencing the problem first hand. Hence, the realisation of some innovations are chained—the experience of one innovation can lead to another innovation. Therefore, the more removed a team or product owner is from the problem the worse the solution will become. By removed we mean, the number of layers it takes before they experience it. Therefore, having physical, emotional and intellectual attachment and experience will help the team create better solutions. This attachment inherently leads to better understanding of the problem. Choosing which software features to build can only stem from detailed analysis of the problem. The items on a SCRUM blacklog board are like music notes on an unfinished and ever evolving music piece. However, the vision is constant.

## 2 The Innovation Estimate

The Innovation Estimate is an iterative analytical framework that will guide an innovator to develop their idea into an actionable strategy with clear objectives. The output of The Innovation Estimate can be used to create any variations of a business plan; we recommend using a one pager tool like the business model canvas to gather the output of The Innovation Estimate. This tool can be used to plan internal projects or potential startup ideas.

The purpose of The Innovation Estimate is to challenge assumptions, biases and help the innovator in bringing forth factors that would have not been considered before. Therefore, it will guide you to a point where you will know what to build, to whom to sell or partner with and how to mitigate risks and competitors. This is not a guide that will predict whether an idea will have a successful outcome or not. It is there to structure the analysis.

Considering the lifecycle of an idea as it comes to life, the initial phases are highly risky. As the initiative grows it naturally becomes less risky. Therefore, the question we should be asking ourselves is how to decrease risk as we progress? The Innovation Estimate will help you understand the risks and work around them. We will not build an upside plan, we are building if-then plans at every step we take.

The first question in The Innovation Estimate challenges the problem itself. Question 2 is the meaty part of the entire estimate. Therefore, don't be shy in spending a great portion of your time on this question. So, the first two questions are about *understanding* the problem and the operating environment. Outcomes from these two questions will help you in creating a number of potential plans, or courses of actions. Question 3 will bring together the outcome of the first two questions and create a statement of intent and a main effort.

The first part of this section will provide a high level view of The Innovation Estimate process. subsequent sections will delve deeper into the details of each of the questions in the estimate process.

### 2.1 What is the Problem?

In this first question, focus entirely on the problem and forget any solutions that you might have conceived of prior to this analysis. Go through each of the bullet points below and write down anything that comes to you or your team.

- What is the problem that I am trying to solve?
- What are my assumptions?
- What is my vision?
- What is the scale of the problem? (1 to 5)
- How frequent is the problem? (1 to 5)
- What is the growth of the problem and industry? (1 to 5)
- How urgent is this problem? (1 to 5)

### 2.2 Who and Where are My Users and Stakeholders?

Using the **three column format table** (factor, analysis, and outcome) analyse the users and the stakeholders. Like the previous question, you should put everything that comes to mind and keep it as a record for later. You do not have to take action on everything, but at least you have a written record of the analysis for later. You may use this question and the outcome column of your analysis to select the features to build first in order to create an MVP as quickly as possible whilst solving your initial problem. The rest of the features can go in your backlog if you're using a SCRUM framework to manage your team.

#### 2.2.1 Understand the Stakeholders and Your Competition

For each of the identified stakeholders and competitors anlyse them with respect to each of the following factors.

| **Human Terrain** | **Competitors & Solutions** |
|---|---|
| *for each user:* | Capability |
| why? | Defining features |
| Pain points | SWOT |
| Pleasure points | Market share |
| Resistance points | Competitive advantage |
| Pleasure points | Pricing |
| Geography | Management |
| Scale | Main product |
| Age group | Health/Performance |
| Incentives | *Growth–Share matrix* |
| Income group | |
| Purchasing power | |
| Skillset (Technical etc.) | |
| How to find this user | |

Table 1: Example of factors to analyse your stakeholders and competitors on.

#### 2.2.2 Understand the Current State of the Operating Environment

| Partners | Channels | Other |
|---|---|---|
| | | Social<br>Technological<br>Environmental<br>Military<br>Political<br>Legal<br>Economic |

Table 2: Example of factors to analyse your operating environment on.

- What are the key trends in my industry?
- What is the most likely course of action of my competitors?
- What is the most dangerous course of action of my competitors?

As per the Innovator's Dilemma: A market that doesn't exist, cannot be analysed. Moreover, with most market analysis it will be filled with unchecked hypothesis and biases. However, it is important to understand the business and economic landscape that is closest to your problem.

## 2.3 What Effects Do I Need to Achieve and Why?

You should have analysed your problem, stakeholders, competitors and operating environment. In this question you will try and draw a meaningful conclusion from your analysis by focusing on key outcomes and creating tasks for your team. First you will state your intent and what you wish to achieve for your next step. It is recommended to write this on a whiteboard so everyone can physically see it as often as possible. The main outcome from this question is your **intent** and your **main effort** statements. It is also recommended to identify your key risks and assumptions.

**Intent.** A paragraph that summarises what you're trying to achieve and the most important aspects to be included in your plan. Mention effects and actions, users, and channels.

**EXAMPLE.** I will CREATE a pre-paid master and visa card that will provide cheaper currency exchange than typical bank cards. I will also BUILD mobile applications for the user to manage their card through it. My users will be able to easily transfer money using a mobile app. The users can easily send money between accounts, split costs and request payments. My users are travellers (mostly technology savvy users and 18-40 years old individuals).

**Main Effort.** Single key defining element that will make your product work.

**Risks.** What are my key assumptions and risks? (Use the risk matrix and the assumption and indicator table.)

## 2.4 What are the Alternative Use-cases for My Solution?

Your solution might have alternative use-cases. Start creating a log of your alternative use cases as you progress through your main intent.

## 2.5 Where and How Do Each Effect Take Place?

You will need to identify the location and the set of users that are to be acted on. Apply your actions/effects to your users in their respective locations. You might have to prioritise users and location based on pay off.

## 2.6 What Resources Do I Need to Achieve My Effects?

Identify resources (e.g. people with specific skillsets) that you require in order to accomplish your mission.

## 2.7 When and Where Do Each Effect Take Place?

Create a sync-matrix. This will help you decide what is your proof-of-concept (POC) and your minimum-viable-product (MVP).