

INTRODUCTION

In today's environment, even promising healthtech innovations fail to get investments from financially motivated investors. As a result, solutions do not survive the so-called Valley of Death. There are numerous good reasons why investors choose not to invest. In many cases, it is because the innovator did not anticipate and prepare a response to a question about a particular risk. This can be traced back to the fact that innovators often fail to put themselves in an investor's shoes. Doing so is critical to understanding why they may not invest in their solution—the “deal killers”. Unnecessary deal killers can be avoided throughout the entire commercialization journey by understanding the questions investors are asking or thinking—the “killer questions”. Innovators can then design and implement “killer experiments” to address them increasing the likelihood of funding for good solutions and successful navigation of the Valley of Death.

THE KILLER CONCEPT

The “killer experiment” is a valuable concept made popular by the Coulter Foundation and is a core element in [CIMIT's CRAASH course](#). Good killer experiments help a team move forward, no matter the outcome, by showing that an innovation:

- is likely to fail, particularly early on, and allowing a team to move on to other things, saving time and money, or;
- can overcome the most challenging issues potential investors anticipate and increasing the likelihood of getting an investment.

We have found that the concept of a killer experiment is hard for some healthtech innovators to grasp. Many assume it is similar to a definitive experiment, like a clinical trial, designed to prove that an innovation will work. Rather, it is quite a different idea. It is one that addresses the key questions your next investor is asking (*or thinking*) to find a reason not to invest and kill the deal. Deal killers are focused on business risks, not just technology, and will change as your business matures.

THINK LIKE AN INVESTOR

One reason for the confusion around the term “killer experiment” is that clinicians, scientists, and engineers often have trouble thinking like an investor.

Accomplished investors are skilled at uncovering why an innovation will not be a successful investment, while innovators are great at describing why their idea is novel and how it might be a useful product.

It should be no surprise that good investors screen and evaluate more than a hundred business opportunities before making an investment. They have the skills and experience to quickly assess which projects have significant potential and which have fatal flaws that will kill the deal.

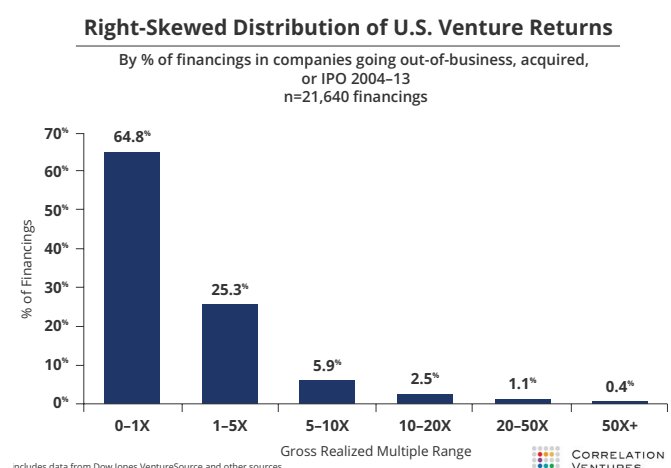
Even after rigorous screening, professional investors succeed in getting their investment back about one third of the time and only one fiftieth of the time getting a 10x return (*fig 1*).

In contrast, most innovators are trained to design experiments that answer specific questions with near certainty and generally concentrate on finding ways to advance a few innovative ideas at once. As a result, they focus on articulating the potential of their idea as a reason to invest, feeling that they can overcome obstacles while often not really understanding the ones that lay outside their areas of expertise. While these two perspectives are related and important, they are not the same.

Investor Thinking

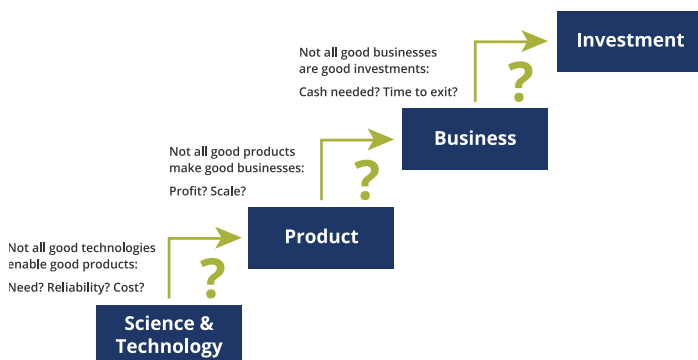
Good investors start by considering high-risk items, such as market acceptance, first and often accept incomplete data for the sake of speed. They want to know what may cause an investment to fail and know it as quickly as possible.

FIGURE 1: INVESTMENT RETURN



Eric Evans, Cimit Accelerator Executive, investor, and entrepreneur, explains (*ig. 2*), “good science does not necessarily make a good product; a good product is not necessarily a good business; a good business is not necessarily a good investment.” Investors know that one miss-step can stop the most promising innovations from reaching patient care and creating financial return.

FIGURE 2: INVESTMENT STAIRCASE



If an innovator’s objective is to raise money by convincing investors to back an innovation, they must be able to look at the investment opportunity through an investor’s eyes. This allows them to anticipate the questions an investor may ask and have a response prepared. It helps explain why the innovation will be an attractive product, good business, and successful investment, which is what most innovators like to focus on. It also helps explain why it will not stumble along the way, which is what investors want to understand. Showing why an investment is not likely to fail is precisely the “killer experiment” concept.

DEFINE THE “KILLER QUESTION”

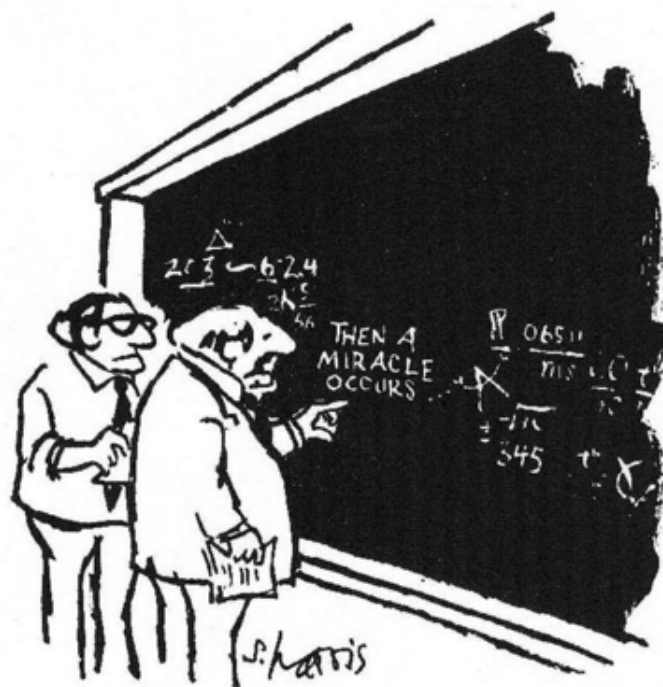
To create a killer experiment, you must start with the “killer question”. Scientists are used to hypothesis driven research where hypotheses are formed then experiments are designed and executed. The same approach applies in this context, using a good killer question to frame the hypothesis around the most likely reason an investor will not invest in the innovation.

In exploring this question, it important to understand the concerns of your next investor and the four key dimensions of risk to manage.

The concerns investors have change as an innovation matures from the seed stage to Series A and beyond. The killer questions will vary as well. Seed stage investors often want to know how much money will be required to bring an innovation to the point of a successful exit, when they’ll get their money back. If the number is too large, they know that the investment will be stepped on by subsequent investors and the value, even if successful, substantially reduced. Later stage institutional investors are often seeking large investments and will not be put off by a capital investment need.

Why Speculate, Just Ask!

It is important to note the distinction between the reasons an investor decides not to invest and what the actual risks may be. While it is always hard, maybe not even possible to know the true risks, you need to talk to investors to understand what they are most concerned about. Seek advice from surrogates well before you meet with an actual investor so you are fully prepared.



“I think you should be more explicit here in step two.”

An investor will assess four key dimensions of risk that must be managed in the healthtech space. Explore each to see if a killer question surfaces at each stage of development, not just as you are about to talk with investors.

4 Key Risk Dimensions

CLINICAL RISK: Will the innovation be accepted and adopted in a workflow and produce real improvements in outcomes and/or lower costs?

TECHNICAL RISK: Will the technology not only work better but be protectable and lower cost than the alternatives?

MARKET/BUSINESS RISK: Is there a significant unmet need with enough buyers willing to buy the innovation at a profitable price?

REGULATORY RISK: What claims will you be able to make, how long will it take, how much will it cost to get approval?

DESIGN THE “KILLER EXPERIMENT”

Once you have defined the killer question(s), you need to be creative in designing the experiment. It is important to recognize that these experiments are unlikely to definitively answer a question and, in reality, only need to address them with sufficient confidence to satisfy an investor.

Good killer experiments can be conducted quickly and at low cost. They don't even need to be physical experiments at all! Analogies to comparable products or services that have been successful are sufficient. They can be designed to use low cost mock-ups that simulate a testable key attribute rather than with fully functional prototypes.

EXAMPLES

Use this example from the [Cimit CRAAASH course](#) as a guide to help you avoid deal killers, find your own killer questions, and design your killer experiments.

NUMBERONE

NumberOne is a start-up company developing a solution for treating stress urinary incontinence (SUI), a problem that affects at least 30 million American adults.

Initial Killer Question

Is the solution was just another “kegelator”? If it works as advertised, why would this one be commercially successful when so many others have tried and failed in the past?

Initial Killer Experiment

A survey was created and posted on several message boards and online communities specifically catering to individuals with SUI. The survey's intent was to find customers who were willing to be interviewed. It allowed interested customers to provide contact details and overall incontinence levels easily online.

Conclusion

The new information influenced the team to pivot the beachhead market. Follow-up interviews highlighted the value of an external application, privacy, and ability to access to the solution through anonymous means. This initial, quick, successful response not only showed that there was a current customer need but also that the unserved beachhead market of potential users were accessible directly through everyday use of the internet.

Next Killer Question

How large is the new beachhead market and how efficient is customer acquisition through online marketing?

Next Killer Experiment

A Google AdWords campaign was developed to see the customer acquisition rate for online sales. Keywords were chosen consistent with the new beachhead market.

Conclusion

This simple online experiment showed there was enough traction to justify additional resources for the project and confirmation that the number of customers and cost of customer acquisition was acceptable given the current pricing of materials.

[Follow this link](#) to read the full account of this experiment.

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