

# Testing Lessons from Lean Startups

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## Abstract

The statistics are dismal. Even though magazines, newspapers, blogs, and even movies tell stories of successful entrepreneurs, most startups fail. Eric Ries was an entrepreneur with a history of startup failures under his belt. However, he learned many truths about managing startups and in 2011, he published *The Lean Startup* and revolutionized the way startups operate. Ries formulated the lean startup method, which has these cornerstones: Build-Measure-Learn loop, Minimum Viable Product, Validated Learning, Customer Development, and The One Metric that Matters. Lee Copeland has found lessons for testers in this lean startup approach. First, the minimum viable product suggests that we should consider a minimal set of tests, not striving for “completeness” at the beginning. This helps us implement the Build-Measure-Learn loop, which is similar to the Test Design-Test Execution-Learning loop of exploratory testing. The idea of customer development suggests that we should identify the different “customers” for our testing to determine what services they would actually like performed. Finally, the One Metric That Matters replaces the dozens of vanity metrics we gather now that don’t really measure either the quality of our product or of our testing.

## Biography

*Lee Copeland has over forty years experience as an information systems professional. He has held a number of technical and managerial positions with commercial and non-profit organizations in the areas of applications development, software testing, and software development process improvement. As a consultant with TechWell Corp., Lee has developed and taught numerous training courses focusing on software development and testing based on his extensive experience. He is a well-known and highly regarded speaker at software conferences both in the United States and internationally. He currently serves as Program Chair for the STAR testing conferences, and the combined Better Software, Agile Development, and DevOps conferences. Lee is the author of A Practitioner’s Guide to Software Test Design, a compendium of the most effective methods of test case design.*

# 1 Introduction

Our story starts, as do all good stories, with “Once Upon a Time.” Once upon a time I was vacationing on Phú Quốc Island in Vietnam. I was teaching on the weekends, and resting during the week. As I was walking along the beach, I saw a young woman reading a book. As I walked closer to check out her ... book ... I saw it was *The Lean Startup* by Eric Ries. I’d heard about it, but had never read it. Later, I bought a copy, and found it precepts very useful in software testing.

## 2 Topics

In the book, Ries describes the dismal record that startups have, a little about himself and his experience with startups, and the foundations of the lean startup philosophy. I then applied his basic ideas to software testing.

## 3 The Lean Startup Methodology

### 3.1 The Dismal Record of Startups

Ries defines a startup as “an organization created to deliver a new product or service under conditions of extreme uncertainty.” Shikhar Ghosh of the Harvard Business School reports that 95% of all startups will fall short of their financial projections, 80% will fail to meet their projected return on investment, and 40% will cease operations with their investors losing everything.” Not a pretty picture.

The Number One cause of failures in startups is that there is no market for their product of service. It may be a great idea – but no one wants to buy it.

### 3.2 Eric Ries

Eric Ries was an entrepreneur with an impressive track record – impressive for failures, that is. He created a product that connected students with ... wait for it ... employers, that failed miserably. (If he had only invented a product that connected people with people). Next he invented a product that allowed people to play in a 3D virtual world. It also failed.

Ries discovered that under conditions of extreme uncertainty, classical management methods do not bring success, in fact, they stifle it.

- When we lack knowledge – we gather more information
- When we lack alignment – we give more detailed instructions
- When outcomes are not what we expected – we impose more detailed controls

Each of these classical methods takes us farther away from success. They send us off in directions that are ultimately counterproductive.

So, Ries formulated the Lean Startup method based on his and other’s experiences. In 2011 he published *The Lean Startup* which I discovered on the beach in 2014.

### 3.3 Foundations of the Lean Startup method

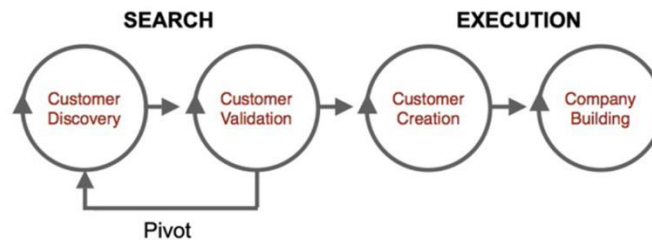
In his book, Ries describes the five key foundations of the Lean Startup method:

1. Customer Development
2. Build-Measure-Learn (BML) Loop
3. Minimum Viable Product (MVP)
4. Validated Learning

## 5. One Metric That Matters (OMTM)

### 3.3.1 Customer Development

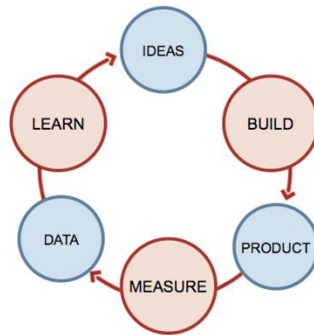
Customer Development consists of learning and discovering who an organization's initial customers will be, and what markets they are in. This is a separate, distinct, and parallel process from classic Product Development.



Ries incorporated this idea from Steve Blank who described it in his book *The Four Steps to the Epiphany*.

### 3.3.2 Build-Measure-Learn Loop

The Build-Measure-Learn Loop is a fundamental foundation of the Lean Startup method.



We start with a new idea, build a product that realizes that idea, measure the desirability of that product with data, and learn from this data to refine our ideas. We do this in rapid iterations to increase our learning at a minimal time and cost.

### 3.3.3 Minimum Viable Product (MVP)

In the Lean Startup method, our goal is to learn what the customers really want, not what they say they want or what we think they should want. We do this by creating a Minimum Viable Product (MVP). This is a version of the product that enables a full turn of the Build-Measure-Learn loop with the minimum amount of effort and the least amount of development time.

The minimum viable product will lack many of the features that may prove essential later on – and that's OK. We are trying to learn what will entice the customer, not what will satisfy every one of their needs.

### 3.3.4 Validated Learning

Validated learning is “the process of demonstrating empirically that the team has discovered valuable truths about the present and future business prospects.” As Kurt Vonnegut wrote, “New knowledge is the most valuable commodity on earth. The more truth we have to work with, the richer we become.”

### 3.3.5 One Metric That Matters (OTTM)

Most metrics that organizations gather are “vanity metrics.” They make us feel good (or look good) but don’t really show progress toward our goal. For example, “number of customers” might make us feel good, but if “cost to obtain each new customer” is too high, we may be headed in the wrong direction.

The One Metric That Matters measures the one most important thing at the present state of the startup.

## 4 The Value for Software Testers

As software testers, we are rarely part of an entrepreneurial startup team. In our role as software testers, are there valuable lessons we could learn and apply from the Lean Startup method?

### 4.1 Customer Development

The ideas in Steve Blank’s book, *The Four Steps to the Epiphany*, can be applied to software testing. We should ask:

- Who are our customers?
- What are their problems that our testing services solve?
- Do our customers perceive these problems as important?
- Are they willing to pay for our testing services?

The idea of Customer Development suggests that we should identify the “customers” of our testing services – developers, users, managers – and serve them, NOT our testing process.

Otherwise we may find ourselves out of business. Remember WebVan, the largest dot-com flop in history. They were going to deliver groceries to our door – but no one wanted their services.

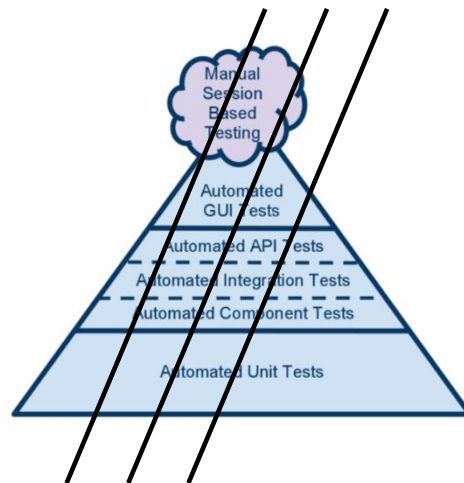
### 4.2 Build-Measure-Learn Loop

The BML loop is equivalent to the well-known Exploratory Testing Loop that we are familiar with.



### 4.3 Minimum Viable Product (MVP)

The Lean Startup idea of a Minimum Viable Product suggest we could begin our testing with a minimum viable set of test cases. We don’t need to strive for “completeness” from the very beginning. We can add additional tests as they become apparent and warranted.



#### 4.4 Validated Learning

Will Rogers, the famed American humorist, once said. “It isn’t what we don’t know that gives us trouble, it’s what we know that ain’t so.” The Lean Startup method suggests running frequent experiments to determine customer response. As testers, we can run frequent tests to determine both system capabilities and customer satisfaction.

#### 4.5 One Metric That Matters (OTTM)

Actor Fernando Lamas is rumored to have said, “It is better to look good than to feel good.” Many of our metrics are examples of “success theatre.” They make us look good, even if we aren’t doing good. Examples of typical testing vanity metrics are:

- Test cases planned
- Test cases implemented
- Test cases executed
- Test cases passed
- Test cases failed

While these may be useful, often the most important metric – one truly indicative of the quality of our product or the quality of our testing – is not defined, collected, or reported. Ivory Madison, in her talk, “Bonfire of the Vanity Metrics” asks these questions – Do your metrics:

- Measure your success at improving quality?
- Directly relate to your product’s success?
- Tie to real customers of your service?
- Help you determine what to do next?

If not, they are probably just vanity metrics.

## 5 Conclusion

The Lean Startup method has many insights to offer software testers. You can become familiar with its precepts and adopt its ideas for your testing.

## 6 References

Ries, Eric. *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. 2011.