

RAPID EXPERIMENTATION

WHAT IS RAPID EXPERIMENTATION?



CONTENTS

Introduction _____	3
Expected Learning Outcomes _____	4
Self-Reflection Exercise _____	5
Benefits Of An Iterative Experimental Process _____	6
REIP _____	8
Case Study: Amazon _____	11
Lean Startup And Mvp _____	13
Benefits Of Lean Start Ups And Mvps _____	15
Final Assessment Task _____	18
Final Test _____	21
Further Reading And Resources _____	23



INTRODUCTION

Watch the video to learn about Rapid Experimentation.

This video will introduce Rapid Experimentation and provide examples of it in action. It will explain how Rapid Experimentation can benefit both customers and manufacturers, and how it promotes sustainability and the circular economy.



EXPECTED LEARNING OUTCOMES

KNOWLEDGE	<ul style="list-style-type: none">• Knowledge of the principles and advantages of a rapid iterative experimentation process (RIEP) in achieving circular economy innovation• Knowledge of RIEP processes and tools within a fast-moving green economy• Factual knowledge of the Lean start up concept and MVP processes
SKILLS	<ul style="list-style-type: none">• Describe the key benefits of an iterative experimental process for circular economy entrepreneurs• Research a case study where rapid experimentation has been effective in the circular economy.• Describe the elements of a RIEP. Create a RIEP for your business in the circular economy• Define the lean start up concept/MVP process as it applies to innovative circular economy businesses.• List the key benefits and risks for your business
ATTITUDES	<ul style="list-style-type: none">• Acknowledge the opportunities to address complex circular economy problems successfully through a structured rapid experimentation process• Aware of the elements of the RIEP process and how it might be applied to generate innovation in a new or transitioning business in the circular economy• Willing to identify and apply an appropriate process for lean start up within the green economy to your business idea



SELF-REFLECTION EXERCISE

Please fill the self-reflection exercise to test your knowledge about creative thinking and creativity. There are only five questions, be careful, there are questions where the right answers are more than one.

[Click here to be taken to the quiz.](#)



BENEFITS OF AN ITERATIVE EXPERIMENTAL PROCESS

Pacholczyk (2022) reports that there are many benefits to an Iterative Experimental Process:

- The iterative process helps businesses to refine and revise their product faster. The process is effective as it can allow the business to develop its product gradually instead of having to start all over again when changes are needed.
- The process presumes that businesses do not know everything or that the environment for their product and their consumers' requirements may shift during the development timeline of the product.
- A step-by-step strategy for attaining a circular economy can be influential. The incremental, iterative development approach allows you to gather feedback and integrate adjustments at a faster rate over and over again.
- Furthermore, an iterative process allows stakeholders to see how the product is progressing and confirm that their needs are being fulfilled with every new iteration.



Wood et al., (2021) reports that developing new concepts and changing them into significant business value to help competitive sustainability needs an adaptable Lean Startup style methodology. The Lean Startup is fast and cost-effective, which highlights the better ideas in a business and develops them into great innovations that essentially boost business performance.



The Rapid Iterative Experimentation Process includes the use of solution prototyping, idea simulation, and experimenting to evaluate and develop the prospect of the proposed developments. This approach can be employed to determine and adapt untried ideas along numerous dimensions, such as customer appeals, market viability, and technical practicability. Businesses can learn faster and with far less expense by employing this Lean/Agile and design thinking approach to assess the value anticipated to be generated by their new ideas. This results in improving their comprehensive investment in development.



The method places an assortment of individuals, methods, and technology to form Lean Startup style testing to boost innovation-driven business implementation. The method consists of a series of activities to develop the insights and knowledge required by the investors in innovation to make better judgments regarding whether to 'pivot, halt, or persevere.'

An efficient and practical RIEP undertaking demands people with an entrepreneurial philosophy and ability in solution prototyping, concept simulation, and testing, as well as the technologies and instruments to achieve this sort of experimentation rapidly and iteratively. Consequently, ensuring the intellectual support and financial obligation from senior leadership is crucial for developing and sustaining the capacity to augment innovation-driven business implementation while improving investment (Wood et al., 2021).

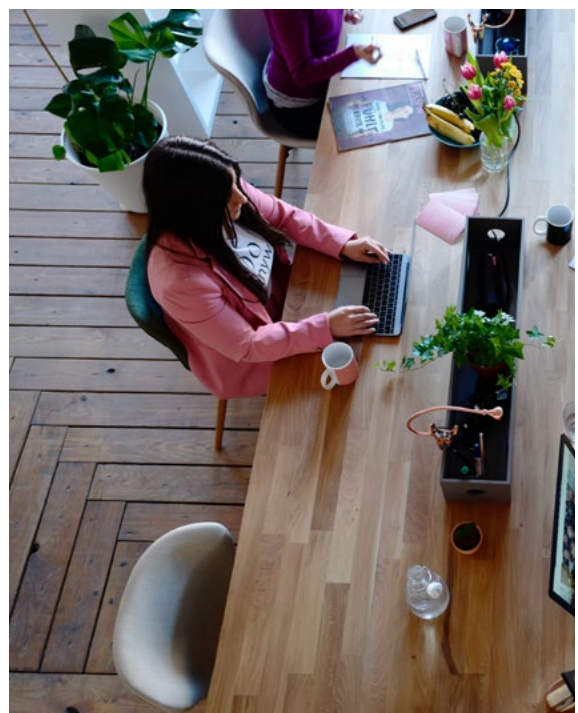


CASE STUDY: AMAZON

Amazon is one of the biggest companies to employ rapid experimentation in their production. According to Lifemesh (2022), it is because of rapid experimentation that the company has changed from just an eCommerce provider to branching out into services like Amazon Web Service (AWS).

In an interview with Principle Sustainability and Innovation at AWS, Neil Harris, Marr (2021) found that the company has earmarked, by 2040, to be net zero carbon. In 2019, Amazon co-founded the climate pledge alongside an NGO known as Global Optimism. The climate pledge is a program that inspires others to join them in their targets for net zero. Harris voiced in the interview that the company's sustainability aspirations encourage all types of innovation, specifically centred on its consumers. He makes aware that the company understands that AWS consumers are interested in sustainability, so having a digital platform rather than a physical product allows the company to improve its carbon footprint and promote sustainability and the circular economy.

Emmi et al., (2021) report that Rapid, an industrial-strength investigation designed at AWS, seeks to support developers by providing automatic, quick, and practicable feedback about the right use of cloud-service APIs (Application Programming Interface).



LEAN STARTUP AND MVP

Schreiber (2017) declares that a lean start-up is a foundation that utilises explicit methods to provide valuable products competently. The concept of lean start-up was founded by Eric Ries. Since then, many businesses have embraced this model successfully.

It appears that traditional start-ups often begin with a product and then attempt to find a market after. The lean start-up differs from this as it is not tied down by any singular product idea. The lean start-up looks at benefiting the market from the start. Through finding this market, the lean start-up comes up with different ideas to appeal to its market rather than starting with a product and hoping it finds a market.

A process known as the Minimum Viable Product (MVP) is a really simple demo or prototype created by the lean start-up first. The MVP is presented to potential consumers immediately, so the start-up can know if the idea has or hasn't got potential. If the users believe that MVP is good, testing resumes. During this time, developers adjust the MVP until they have made it a product that individuals will want to purchase.

In a lean start-up, there is constantly adding, modifying, and refining of features of a product. This is to ensure that the product is meeting the demands of the users (Schreiber, 2017).



BENEFITS OF LEAN START UPS AND MVPS

Benefits of Startup Methodology (Saraswat, 2016):

Many startups have been set up to fail because of a lack of planning by abandoning all their process. Without proper planning, businesses put themselves at risk.

With a Lean startup methodology, businesses can develop a system that supports the business by giving them tools to test the idea regularly. The Lean Startup Methodology isn't merely about being cost-effective but is a methodology that supports the development of the business's product. The Lean Startup Methodology will undoubtedly expand any business and improve business' income.

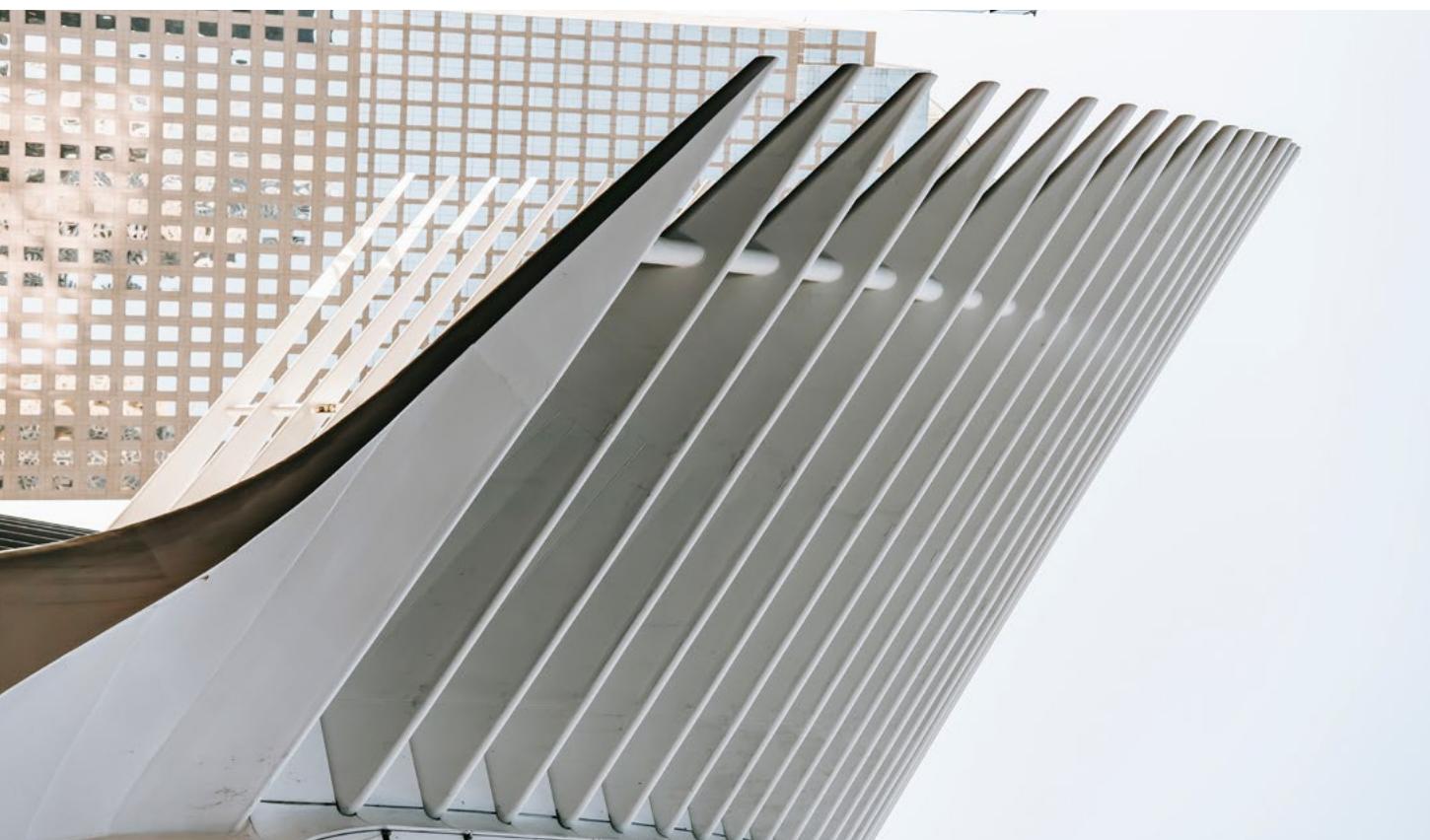
The Lean Startup Methodology suggests the idea that every startup can experiment with different pivotal points of a products development. The process saves you from doing the tedious work and allows your business to put its time and efforts into more generative things.

The Lean Startup Methodology allows management the time to concentrate more on how the product can be developed, whether it is even worth introducing it, is it feasible to create a sustainable business that is practical for the products and the businesses.



Kachan (2021) believes that beginning your development journey with an MVP is a great idea for businesses to implement since it has many benefits. The Minimum Viable Products take far less time to produce, which allows the basic idea of the product to be developed at a much lower cost at a faster rate. Because businesses are creating MVPs simultaneously and rapidly, the business receives feedback faster, which results in the product being made at a far faster rate than normal and can be marketed quicker because of this.

And because you spend far less money on MVP development, this indicates that MVP is a cost-friendly approach for any business. With MVP, you don't have to spend money on things that don't work because you already know from users testing your MVPs what they do and don't like before you produce a full-fledged product to market.



FINAL ASSESSMENT TASK

TITLE OF THE TASK:

Rapid Experimentation

AIM OF THE ACTIVITY:

Create a RIEP for your business in the circular economy

You are a business owner and have recently decided to take the plunge into becoming more sustainable to promote the circular economy. You would like to make your products more sustainable so that they can be renewed for multiple life cycles. Create a RIEP that your business can use to achieve this.

TIME REQUIRED:

Participants will require 4-6 hours to achieve this task.

3 or 4 hours to think of an idea, research, and develop their RIEP process for their business.

MATERIALS REQUIRED:

Articles, links, and videos in EduZine

Microsoft Word

Editing Software

Laptop

Internet Access

STEPS TO COMPLETE THE TASK:

- **Step 1:** Decide which product you would like to involve in the RIEP process. For example, how do you want to modify this product to be more sustainable? Remember, no idea is silly if it is practicable and can help you reach your goals.
- **Step 2:** Now it is time to determine how you are going to test these new ideas for your product quickly. For instance, who will test these new ideas, how much will it cost to run these tests, are these new ideas in line with your sustainable goals, and can these tests be run simultaneously fast?
- **Step 3:** Once your tests are up and running, how will you evaluate the results? For instance, user feedback, cost-effectiveness, or product performance (does the product line up with your sustainable goals).
- **Step 4:** After completing Step 3, it is time to make some adjustments to your product. For example, what worked and what did not work, where can you go with the results you have found from your tests, etc?
- **Step 5:** Once you have completed Step 4, repeat Steps 1-4 over and over again until you have found the product you are looking for.
- **Step 6:** Edit the voice-over presentation so the audio and slides are correlating.
- **Step 6:** Remember it's a trial-and-error process. Good luck!



FINAL TEST

Are you ready to show what you have learned from the EduZine? Do you feel you know more about Rapid Experimentation now than when taking the self-reflection quiz at the beginning? Once you have read all the articles in the EduZine, you will have no problem completing this quiz.

<https://docs.google.com/forms/d/e/1FAIpQLScx6VKbBAoY-tZk4ev13vlzaZmN63YbStwpUGgoRkQ9womD8A/viewform>



FURTHER READING AND RESOURCES

<https://www.giminstitute.org/lean-startup-style-innovation/>

<https://mike-mike.medium.com/finally-a-field-guide-for-rapid-experimentation-to-find-your-path-to-scale-3af5ef33c9db>

<https://craft.io/resources/glossary/what-is-rapid-experimentation/>

<http://theleanstartup.com/principles>

[https://www.agilealliance.org/glossary/mvp/#q=~\(infinite~false~filters~\(tags~\(~'mvp\)\)~searchTerm~'~sort~false~sortDirection~'asc~page~1\)](https://www.agilealliance.org/glossary/mvp/#q=~(infinite~false~filters~(tags~(~'mvp))~searchTerm~'~sort~false~sortDirection~'asc~page~1))

<https://interaction.net.au/articles/what-is-a-lean-startup/>

<https://hackernoon.com/7-benefits-of-mvp-for-startups-mx1e35ei>





LEARNING CIRCLE



cantabria
perma
cultura



Co-funded by the
Erasmus+ Programme
of the European Union



"The European Commission's support of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission can not be held responsible for any use which may be made of the information therein." Project Number: 2020-1-UK01-KA226-VET-094435