AJAYI CROWTHER UNIVERSITY, OYO

ENTREPRENEURIAL EDUCATION

UCHA I. MBOFUNG
General Editor

OYEYEMI OSHIN
Editor

Ucha I. Mbofung
General Editor

O. Oshin
Editor

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TABLE OF CONTENT

MODULE SEVEN

CREATIVITY, INNOVATION AND TECHNOLOGY

P.O. OIKU AND S.O. OGUNRINDE

Introduction

Ideas they say rule the world and provides solutions to the economic needs and wants of individuals in every society. However, these ideas do not become solutions until they are developed and structured to stand the test of time which can only be achieved through creativity and innovations.

Furthermore, as a prospective entrepreneur, your ability to be creative and innovative not only guarantees your place in the business environment but also makes you constantly relevant.

"The first step is imagination, the capacity that we all have to see something in the mind's eye. Creativity is then using that imagination to solve problems—call it applied imagination. Then innovation is putting that creativity into practice as applied creativity." Sir Ken Robinson, (2006).

Unit 1: Objectives of the Module

At the end of this module, students should be able to:

- Understand the term creativity and its attributes.
- Understand the types of creativity and its process.
- Explain the concept, principle, components and characteristics of innovation and technological innovation.
- Explain the various stages of innovation.
- Describe the types, forms and sources of innovation.
- Explain the various innovative strategies.
- Identify the factors that contribute to successful innovation and the need for technological advancement..
- Explain the various reasons why some organizations fail to innovate.

Unit 2: Creativity

Creativity is the act of turning new and imaginative ideas into reality. Creativity is characterised by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena, and to generate solutions. Creativity involves two processes: thinking, then producing.

According to Rollo, M. (1994). Creativity is the process of bringing something new into being. Creativity requires passion and commitment. It brings to our awareness what was previously hidden and points to new life. The experience is one of heightened consciousness: ecstasy."

2.1 Attributes of a Creative Entrepreneur

"Creative thinking involves imagining familiar things in a new light, digging below the surface to find previously undetected patterns, and finding connections among unrelated phenomena. Roger, (2002).

The second principle by Leslie, (2017) stated that creative people will have a number of attributes .These attributes are listed below:

1. Genuinely values intellectual and cognitive matters.
2. Values own independence and autonomy.
3. Verbally fluent; can express ideas well.
4. Enjoys aesthetic impressions; is aesthetically reactive.
5. Is productive; gets things done.
6. Is concerned with philosophical problems, for example, religion, values, the meaning of life.
7. Has high aspiration level for self.
8. Has wide range of interests.
9. Thinks and associates ideas in unusual ways; has unconventional thought processes; can make unusual connections to unrelated ideas or things.
10. Is an interesting, arresting person.
11. Appears straightforward, forthright and candid in dealings with others.
12. Behaves in an ethically consistent manner; has consistent personal standards.

2.2 Types of creativity

According to Arne Dietrich (2004) there are four different types of creativity with corresponding different brain activities. This is shown in the box in Figure 1 below:

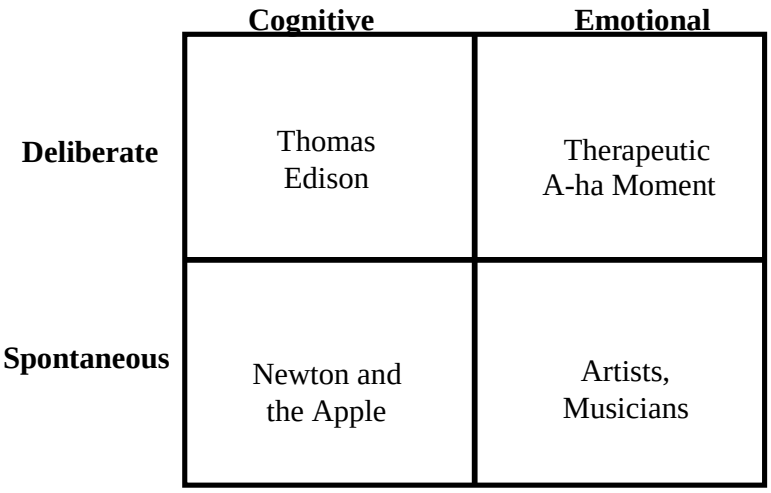

Fig 1: Types of creativity

Creativity can be either emotionally or cognitively based, and it can also be spontaneous or deliberate. That gives you the four quadrants.

1. **Thomas Edison** – Deliberate and cognitive creativity is the kind of creativity that comes from sustained work in a discipline. For example, Thomas Edison, the inventor of the electric light bulb, was a deliberate and cognitive creator. ***He ran experiment after experiment before he would come up with an invention***. In addition to the light bulb, Thomas Edison also invented the phonograph, and the motion picture camera. One of his famous quotes is: ***"I have not failed. I've just found 10,000 ways that won't work."***

   Deliberate and cognitive creativity comes from the Pre-Frontal Cortex (PFC) in your brain. The PFC allows you to do 2 things. Firstly to pay focused attention and secondly to make connections among information that you have stored in other parts of your brain. In order for deliberate, cognitive creativity to occur, you need to already have a body of knowledge about one or more

particular topics. When you are being deliberatively and cognitively creative you are putting together existing information in new and novel ways.

2. **Personal breakthrough "a-ha" moments** – If you've ever had a personal crisis (relationship break-up, got fired, gone through a bankruptcy), and then had a flash of insight about yourself and what chain of bad decisions you might have made that contributed to the crisis, then you may have experienced deliberate, emotional creativity. This type of creativity also involves the PFC; that is the deliberate part. But instead of focusing attention on a particular area of knowledge or expertise, people who are engaging in deliberate, emotional creativity have aha moments having to do with feelings and emotions. **The cingulated cortex is the part of the brain that processes complex feelings** that are related to how you interact with others, and your place in the world. And the cingulated cortex is connected to the PFC. These two brain areas are active with this type of creativity.

3. **Isaac Newton "Eureka" moments** – Have you ever been working on a problem or idea that you can't seem to solve. Maybe you have been trying to figure out how to staff a project at work, and you just don't see how you can free up the right people to do the project. Then you go to lunch, and on your way back you get a **flash of insight** about how to staff the project. This is an example of spontaneous and cognitive creativity.

   Spontaneous and cognitive creativity involves the basal ganglia of the brain. This is where dopamine is stored, and it is a part of the **brain that operates outside of your conscious awareness.** During spontaneous, cognitive creativity, the conscious brain stops working on the problem, and this gives the unconscious part of the brain a chance to work on it instead. If a problem requires "out of the box" thinking then you need to remove it temporarily from conscious awareness. **By doing a different, unrelated activity, the PFC is able to connect information in new ways via your unconscious mental processing.** The story about Isaac Newton thinking of gravity while watching a falling apple is an example of spontaneous and cognitive creativity. Notice that this type of creativity does need an existing body of knowledge. That is the cognitive part.

4. **"Epiphanies"** — Spontaneous and emotional creativity comes from the amygdala. The amygdala is where basic emotions are processed. When the conscious brain and the PFC are resting, then it is possible for spontaneous ideas and creations to emerge. This is the kind of creativity that you think of when you think about great artists and musicians. Often these kind of spontaneous and emotional creative moments are quite powerful, such as an epiphany, or a religious experience. There is not specific knowledge necessary (it's not cognitive) for this type of creativity, but there is often skill (writing, artistic, musical) needed to create something from the spontaneous and emotional creative idea.

2.3 The Creative Process and Flowchart

Below is the creative process and flowchart according to Nebai Cherrick (2015) as an artist which can be interpreted to fit with various projects as a creative entrepreneur.

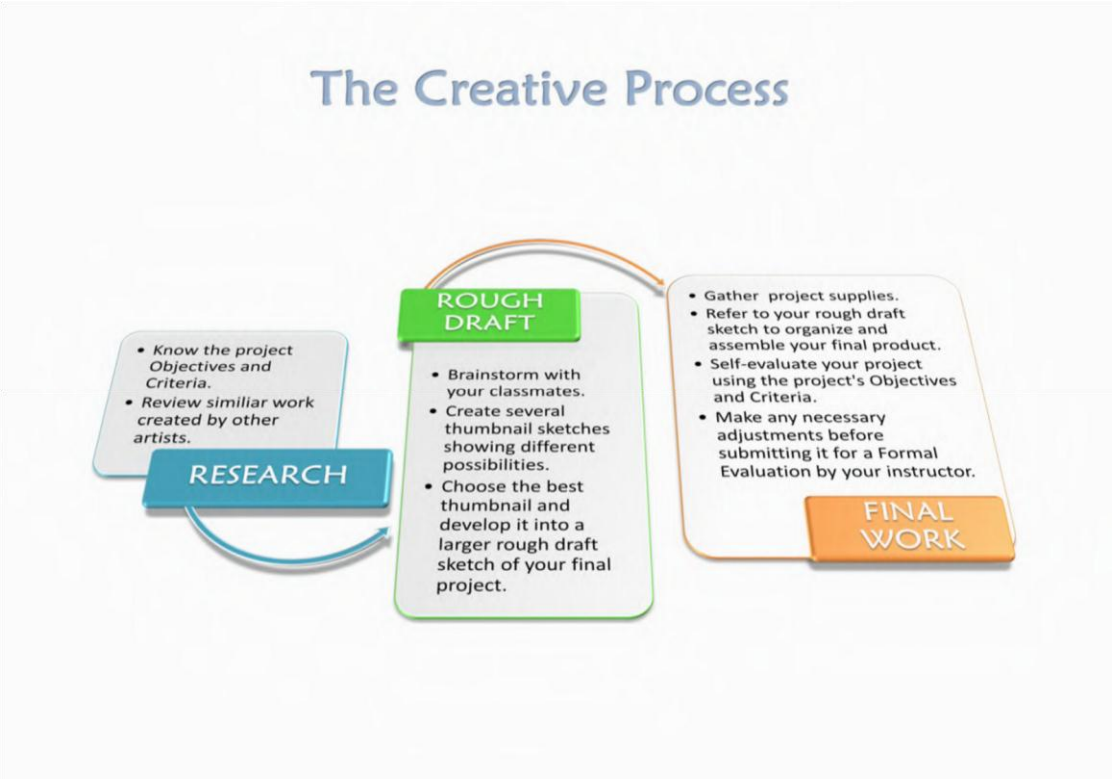

Fig 2: The creative process

2.4 Challenges of Creative Process

In his book Genership, David Castro (2012) listed the five challenges to the creative process. The challenges are:

1. Dissipating desires

At times, creativity just flows and is invigorating. At other times, creativity doesn't come easily and the process can be exhausting. We can work so hard on a project we are passionate about only to be fraught with disappointment; *'It's not perfect! Oh I will need to start again!'* or *'What a waste of time, I give up!'*

2. Failure to observe current reality

Like an ostrich sticking its head in the sand, the failure to observe what is really going on can land you in all kinds of strife. As human beings, we can only go on living the same way for so long, but failing to observe reality can be a dangerous thing with serious consequences.

3. Competing desires (conscious and unconscious)

Life is full of competing desires. "To create requires focused energy. A major fault in any creative process occurs when energy becomes channeled in competing directions. When desires conflict, creative energy is either dissipated or turns against itself like a swimmer kicking one way with his feet while paddling in the opposite direction with his arms."—David Castro, *Genership*

Realistically – we can't have it all. Nor should we want to or expect to have it all (the "have it all" myth is something that took me years to grasp and then release because we are brought up in a society that tells us we can and should want "it all").

4. Conflicting understanding of reality

You can accept what someone has to say, but you don't have to agree with them. *Perception can be destructive.* It can also lead to all kinds of conflict. No two people see the world through the same filter. We each see and experience the world through our own filters. We are all impacted by what we have learned and experienced in our lives. We have no control over how someone else perceives anything. The only thing we do have control over is our own thoughts and actions. We have a choice; we can choose to accept others for how they are. This does not mean we are agreeing with them.

5. Committing to failed ideas and strategies

Living a life of self-loathing and negativity will get you nowhere. Instead, flip the switch to a mindset of positive thoughts and self-belief, take risks and embracing failure.

Unit 3: Concept, Nature & Principles of Innovation and Technology

So much so, we often refer to a new idea for product, process or service as innovation rather than creativity or an invention. Invention and Innovation are not the same as invention is an idea for a novel product or process while Innovation is the introduction of new products, processes or services into the market place. The word

"**Innovation**" was derived from the Latin **word "**innovates", which means "to renew" or "to make something new". To renew is to continuously replace old concepts with new ones and it involves three major steps; which are:

- generation of a new idea, which is known as creativity;
- development of the idea into a reality or a physical, tangible product i.e. realisation or implementation; and
- marketing of the developed idea.

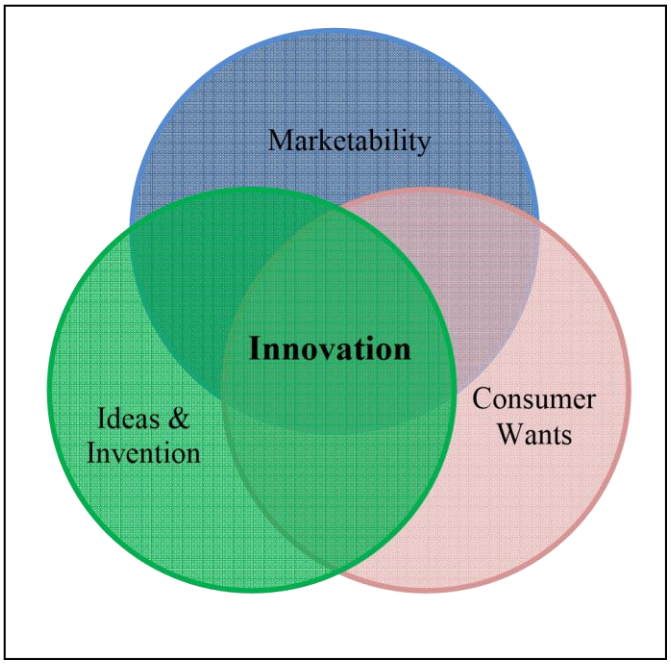

Fig. 3: components of innovation

3.1 Principles/Features/Characteristics of Innovation An innovation should be:

- A tangible product, process, procedure or service within an organization in terms of quality enhancement, cost reduction, improved methodologies, and creation of knowledge.
- New to the social setting within which it is introduced i.e. enhances human growth and potential, and create a new market.
- Intentional rather than accidental.
- A challenging change.
- Aimed at predicting benefit to the organization and enhancement of current market attractiveness.
- Public in its effects.

An aspect through which innovation has transformed the world is through Technology. For instant, technologies such as airplanes and space-crafts made it possible for Man to travel around and outside the globe within the shortest possible time. Technology, which is the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science, serves as a pedestal on which innovation has changed the world. Introducing a concept such as technology into the meaning of innovation simply means the transformation of ideas based on technical or scientific knowledge i.e. new scientific inventions into useful products, processes and services that have socioeconomic impact. Thus, technology might be seen as a body of knowledge or building blocks for 'Technological Innovation'. In other words, technological innovation is a sub-set of innovation through which ideas and scientific knowledge are transformed into physical reality and real-world applications.

The role of innovation and technology in creating competitive advantage and improving organisational growth cannot be understated. The importance of these two phenomena could not have been better captured by the statement of Schumpeter in 1942 which say “The interaction of technological innovation with the competitive marketplace is the fundamental driving force in capitalist industrial progress”. He further emphasized the importance of both concepts by stating that “The normally healthy economy was not one in equilibrium, but one that is constantly being disrupted by technological innovation”.

3.2 Innovation Process

The process of innovation is as follows:

i **Research and Development** : This is the conception stage where by organization carries out a detailed investigation on a conceptual idea to generate knowledge on how to actualize the idea; after which, the organisation evaluates, modifies and improves on the available knowledge, converting it into a physical prototype of the product, process or service.

ii **Implementation:** This is also known as the **Application** stage. It involves carrying out a set of activities associated with introducing a product into the marketplace such as the design and the conversion of a developed idea into a product, process or service. At this stage, the idea emerges from a laboratory scale into tangible goods and services.

iii **Launch/ Production / Manufacturing**: This involves carrying out a set of activities associated with the widespread distribution of products obtained from designed concepts or ideas. It is the stage in which an organization introduces a new product, process or service to the market place.

iv **Growth**: This is the stage in which consumers become more familiar with the product, process or service. In other words, making the product, process or service more recognized.

v **Proliferation**: Also known as the **Diffusion** stage. It involves the widespread use of the product, process or service due to the availability of an established idea or knowledge.

vi **Enhancement or Decline**: The enhancement stage involves performing a set of activities associated with maintaining a competitive edge and preventing a ***decline*** in the demand of the innovation due to other new developed innovations with the same application.

3.3 Types, Forms and Sources of Innovation

3.3.1 Types of Innovation

The types of innovation are:

i **Competence Enhancing vs. Destroying Innovation:** Competence enhancing innovation builds on existing knowledge and skills while Enhancing or destroying depends on whose perspective is being taken

ii **Architectural Innovation vs. Component Innovation**: Architectural

iii innovation involves changing the overall design of a system i.e. changing the way the components of a system interact with each other; while component innovation is the change to one or more components that does not significantly affect the overall configuration of the system.

iv **Technical vs. Managerial Innovation**: Technical innovations involves changing a product's or service physical appearance, performance or production processes; while managerial innovations involve the change of managerial styles of conceiving, creating and distributing products or services to customers.

v **Radical vs. Incremental**: Radical innovation involves the creation of a fundamentally different kind of product. It is usually driven by the radical change of the customer's wants, leading to the production of new products, processes or services that completely replace the existing products, processes or services. Incremental innovations involve making incremental improvements to the original product, process or service. The implementation of this innovation, incremental innovation, alters the products but does not change the fundamental competitive interaction.

vi **Product and Process Innovation**: Product innovation involves improving an existing product or services, or creating an entirely new product; while process innovation involve making changes to an existing process or adopting an entirely new process in producing, manufacturing or distributing same product or service.

3.3.2 Forms of Innovation

The three major forms of innovation based on applications or uses are products, services and processes.

a. **Products**: This includes products that are invented, extended, duplicated and synthesized. From a commercial perspective, the attraction of product innovations is that the novelty of a new product will persuade consumers to make a purchase. Invention of products involves the design or creation of novel products that have not existed; while extension of product is the expansion or enlargement of products already in existence for example, the extension of "Indomie Noddles" from "regular" size to "hungry-man" size.

Duplication of products is the reproduction of an already existed product through creative thinking of the entrepreneur in order to enhance the quality; while synthesis of product is the coupling of the

various components, elements, etc., into a product/ system already invented with the intention of finding a new application for it.

b. **Service Innovation**: Simply, this is the rendering of services in a new way, often with a novel and very different business model, and occasionally as a form of an entirely new service application.

c. **Process Innovation:** Process innovations often have an even bigger impact on society than either product or service innovations because it involves developing new processes for both existing and novel products.

3.3.3 Sources of Innovation

According to Drucker, (1985) in his book "Innovation and Entrepreneurship", there are seven major sources of innovation. These are:

i **The unexpected**: This is when a product, process, or service exceeds or fails to meet its expectations, resulting in the creation of an unanticipated market due to the unexpected success or failure of the product, process, or service.

ii **Incongruity**: A discrepancy between realities and what everyone assumes it to be, or between what is and what ought to be can create an opportunity for innovation.

iii **Process need:** This is the enhancement of existing process to perfection. It is task focused and often involves the redesign of a process around a new knowledge and/or the replacement of a weak or new link.

iv **Changes in the Industry/Market structure**: This occurs when an innovation opportunity is presented due to the rapid growth of an industry and changes in the way business is being conducted.

v **Demographics**: This is the creation of innovation opportunity as a result of changes in the population size, composition, employment, educational status, age structure, income, etc.

vi **Changes in Perception, Mood and Meaning**: This is when changes in the society's general assumptions, attitudes, and beliefs, create opportunities for innovation. Changes in perception lead to a change in meaning but not the facts.

vii **New Knowledge**: this is the creation of new products, process, services or market due to advances in scientific and non-scientific knowledge.

3.4 Innovation Strategy and Innovative Skills Set

3.4.1 Innovation Strategy

This is the changes made by an organisation to make it more competitive and have an edge over other organisations. These strategies serve as template on which an organisation implements their innovative ideas. There are various types of innovation strategies which can be classified into four major categories; namely:

i **Proactive**: this involves the use of radical and incremental innovation. Organisations which use this type of innovation strategy tend to have a strong research and development orientation. They access information from a wide range of sources and they take big risks.

ii **Active**: This involve defending existing innovations while being prepared to respond quickly once an innovative product, process or service has being established.

iii **Reactive**: This is used by companies that focus more on operations, and have a more reserved approach i.e. "wait and see" approach to their mode of operation. They engage in low-risk opportunities.

iv **Passive**: this is when an organisation changes its mode of operation when it is demanded by the customers. In other words, organisations wait for the customers to demand for a change in product, process or services before making the changes.

3.4.2 Innovative Skills An innovator must be:

- Time conscious and have an understanding of the intent market.
- Be alpha-numeric literate able to demonstrate curiosity
- Able to manage risk.
- Seize opportunities.
- Articulate team goals, influence others to invest in them, evince trust at all levels.
- Envision rational solution scenarios to open-ended challenges
- Manifest a strategic intent in design
- Enable comfort in interpersonal relations
- Practice creative transformation
- Sense the coupling among seemingly disparate issues
- Make sense of complexity
- Contribute to, extract from, participate in the world of collective intelligence base

- Be an astute observer of strategic inflection points and anticipate their consequences at the moment of inflection

3.5 Influencing Factors of Innovation

There are several factors that influence and contribute to successful innovation, among which are**:**

- Industrial policy and political facilitator.
- Education/diffusion system.
- Launch timing i.e. marketing time.
- Society needs or wants.
- Competition or cooperation relay.
- Investment scale and level, which are based on the available capitals.
- Scientific capability & repository i.e. level of knowledge as change is dependent on discoveries.
- Mobility barriers.
- Sustainability of product, process or service - life cycle phase innovation rate is high for emerging and growing product, process or services.
- Changes in Institutional Interactions.
- Changes in Organizational Structure.
- Communication channel/speed.

3.6 Reasons for Not Innovating

There are several reasons why an organisation might choose not to innovate, among which are:

i. **Limited or unavailability of Resources**: The implementation of an innovative strategy especially that of technological innovations may require a huge amount of capital which the organisation does not have. This is the principal reason why most organisations sell a fraction of their organisation and why most inventors sell their inventions to bigger organisations that are financially buoyant. Other resources that can be limited include managerial personnel and technical expertise. In other words, many of the readily available conceptions and straightforward daily observations give at best only a limited view of the innovation process.

ii. **Corporate Bureaucracy& Systemic Norm**: This breeds alienation and destroys the morale of the workers, making them less incline in suggesting innovative ideas.

iii. **Failure to Identify New Opportunities**: The inability of an organisation to recognise opportunities for the introduction of innovative product, process of service.

iv. **No Recognition**: lack of recognition of an organisation makes it difficult for an organisation to thrive in the marketplace.

v. **Poor Leadership**: distrust of management.

vi. **Fear and Personal Comfort:** research shows that some organisations resist change due to fear of the unknown, and satisfaction with current products, process or service, reputation, etc.

vii. **High Complexity:** Some organisations prefer not to innovate when the innovative strategy becomes too complex and complicated, proving to be an impossible task.

viii. **High Risk**: Prior to the commencement of an innovative product, process or service, organisations tend to consider the risk aspect to know if the risk outweighs the benefits.

ix. **Poor Reward System**: This tends to 'kill' personnel initiatives and innovation as a punitive rewarding system will discourage people from taking risks.

UNIT 4. Case Study of Renowned Innovators

The ability to cope with the pace of change in the market environment determines the success of an organization. These three case studies examine and analyse ways through which successful companies have surf and thrived successfully on the wave of change.

4.1 Heinz Food Processing Company

The **H. J. Heinz Company**, or **Heinz**, is an American food processing company founded by Henry John Heinz in 1869. Since 1896, Heinz has exploited successfully the food processing market, achieving excellence in manufacturing and developing of processed food after producing thousands of food products in plants on six continents, which are being marketed in over 200 countries and territories. Despite the dynamic market environment and new innovative organizations, Heinz Company still remains one of most preferred brand due to the various innovative on-going changes, some which are relatively small in nature and others which involve giant steps forward. Heinz carried

out a detailed self-assessment and identified potential areas for improvement. In 1996, Heinz simply could have relax and exploited on the existing portfolio then, such as Heinz Tomato Soup, Heinz Baked Beans, Heinz Tomato Ketchup etc., but instead, Heinz to look to the future by addressing step change innovation - developing new skills with a strong external focus. The company initiated a programme in 1996, which was supported by an innovation agency with extensive marketing, production, advertising and research skills. The agency specialises in helping organisations come up with new ideas. The creation of the innovation programme at Heinz involved a certain amount of 'measure' - in order to establish the objectives and evaluate the success of the programme. The initial objectives were to:

1. create two to five products, over a nine month period, which were real innovations
2. expose Heinz innovators to new processes and start to make Heinz a more innovative culture itself.

Before the programme was introduced, it was decided that:

- new, exciting products would represent 10% of Heinz's operational income by the year 2002
- a working culture would be established which had the ability to switch between measure and madness at the appropriate times
- Heinz would look physically different.

Heinz also identified a number of barriers, including:

- low prioritisation and wrong of choice amongst senior management.
- Resistance to ideas. New ideas did not always work through the system because the organisation had become hierarchical with a top down approach. Over time, therefore, people suggested fewer new ideas.
- Fear of failure in the organisation: People were often reluctant to take responsibility for new product
- Risk
- Inability to adapt to the ever changing of consumers' wants.

A number of key actions were identified to remove some of the barriers; among which is allowing employees to be creative, for example, the chefs' work programme which incorporated time to

experiment in the kitchen on innovation ideas. Furthermore, the company employed new consumer research techniques, which made communication with consumers easier and quicker.

The introduction of induction, training and leadership programmes was used to develop the skills required to deliver successful innovations.

A new folder called "Heinz Innovation Fresh Ideas" which acts as a central collection point for ideas within the organisation was created and individuals and teams were encouraged to contribute ideas to the folder. Some of the innovative products that were created are:

1. Baked Bean Cuisine - incorporating Heinz Baked Beans into a range of traditional recipes such as Sausage Hot Pot, Cheesy Pasta Bake and Lamb Hot Pot. According to a Heinz News Release, the product was based on the idea of "Everyone likes beans, everyone likes Shepherd's Pie, but not everyone likes cooking."
2. Flavoured Purified Water for babies
3. Baby Basics range of infant feeding accessories.

In addition to including 'creativity time' for chefs and identifying creativity skills as a key competence within recruitment, induction, assessment and leadership, Heinz extended the creativity skills training across all functions of the Company. The working environment was also made more conducive to creativity by the introduction of 'creativity areas.

4.2 Hi5 versus MySpace versus Facebook

The ability of the Internet to cross international barriers has made it a haven for different social networks to spring up and allow friends and families to remain connected in ways that they have not been able to in the previous years.

Before there was Facebook, hi5 and MySpace were the most popular social network. Myspace was mainly known in the USA, while Hi5 was international known. Despite the fact that the three social networks were targeted at the same audience, had robust capabilities, and the first two were at the market long before Facebook, the birth of Facebook led to the death of the hi5 and MySpace. However, the brilliance and willingness of Mark Zuckerberg to allow the marketplace decide where the business should go made it to excel above the other two competitors. Unlike hi5 and MySpace, Facebook

founder kept listening and searching for the next application that would lead to more uses, more users and more growth. In other words, he continued to push the technology to do whatsoever the users wanted. This made the technology to continuously adapt to the ever changing wants and needs of the customers; This inturns led to the creation of several innovative applications including video calls, social games, product reviews, user networks, and enhanced security settings that allow users to decide the type and amount of information they shared with people who they are connected with, as opposed to hi5 and my space users. This gives them a sense of privacy in the social network. Facebook users can also select which particular activity or updates can be viewed by certain people. This way, they are able to limit the amount of information that they share online; whereas, visitors to hi5 can easily view the profiles of the different people using the online social network. Furthermore, Facebook emphasized the legitimacy of its user accounts by emphasizing the use of authentic account info; unlike Hi5 and MySpace that contained several fakes accounts and spammers.

4.3 Blackberry versus Nokia versus Apple (iPhone) versus Android

The fall of BlackBerry and Nokia from the smartphones market due to innovation impotence is a typical example of how empires crumble. Prior to the introduction of iPhone by Apple in 2007 and the release of Android phones in 2008, BlackBerry and Nokia pioneered and rule the smartphone world with their enormous R&D fire powers, technical prowess and foresight. They sold millions of products and outpaced the sales of Apple's iPhone and Android phones for years. The release of iPhones and Android phones ended the glory days of BlackBerry and Nokia via redefining the smartphone technology. With hundreds of mobile operators around the world and sophisticated smartphone photography, Nokia maintained a major advantage over Apple for years.

However, when Apple introduced iPhone in 2007, Apple didn't set out to sell a phone but a mini-computer. When Nokia and BlackBerry were making fantastic phones and ruling the market, Apple decided to change the rule of the game by creating small and pocketable computer in order to give the iPhones a competitive edge and make them compete with the products of the smartphone giants – Blackberry and Nokia. The innovation of mini-computers tilted the market in the favour of Apple. Principally, iPhone was created mainly for data processing, calculation, running of programmes

i.e. applications, and other functions just like a computer. So the fact that it could also connect to cellular network and make calls was just an icing on the cake. Following on the laid-down path of Apple, Google expatiated on the idea of pocketable computers, created the Android platform which is

more flexible and user friendly. This led to the innovation Android phones by several companies that use the platform to create their respective products. Both Apple and Google worked tirelessly to enable more powerful hardware in iPhones and Androids, which enable the products to do many of the tasks that laptops do.

Nokia and BlackBerry failed to grasped occurring change brought by iPhone and Goggle such as sophisticated software, system apps, mobile gaming, etc., and this innovation impotence eventually led to the decapitation of both brands. In an attempted to rescue their brands, Nokia switched to Microsoft's Windows Phone OS instead of riding successfully on the Google Android wave like Samsung; while BlackBerry was acquired by Fairfax. However, both rescued missions proved fruitless.

Unit 5: Summary of the Module

This module has identified what it is to be a creative and innovative entrepreneur, also the need and importance of technological innovations.

Furthermore, you should be able to identify and explain creativity and its various attributes, describe the types, forms and sources of innovation. Thereby establishing a platform for you to become a creative and innovative entrepreneur

Unit 6: Assessment of the Module

1) What is creativity?
2) List and Explain four attributes of a creative entrepreneur
3) List and explain five innovation processes
4) Highlight the types of innovations
5) What do you understand by innovation strategy?
6) List the four major categories of innovation strategy?
7) Highlight five innovation shells
8) Identify eight factors that influence innovation?

REFERENCES

Arne, D. (2004). *The cognitive neuroscience of creativity*. Psychonomic Bulletin & Review, 2004, 11 (6), 1011-1026.

Barron, F. (1969).*Creative Person and Creative Process*. New York: Holt Reinhart Winston.

Bridge, S., etal (2003). *Understanding Enterprise, Entrepreneurship and Small Business*. 2nd Edition. New York: Palgrave Macmillan.

Burns, P. (2001). *Entrepreneurship and Small Business*. New York: Palgrave Macmillan.

Cannon, T. (1985). *Innovation, Creativity and Small Firm Organisation*. International Small Business Journal, Vol. 4. No 1, 33 - 41.

David, C. (2012). *Genership: Beyond leadership toward liberating the creative soul. Paperback. November 15, 2012.*

Drucker, P.F. (1985). *Innovation and Entrepreneurship*. London: William Heinemann.

Elias G. Carayannis (2013). *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship***.** New York, Springer

Ilesanmi, O.A. *Entrepreneurial Development*. First Edition. Ilorin: Kola Success Publications.

Kanter, R.M. (1983). *The Change Masters*. New York: Simon & Schuster

Leslie, O.W. (2017). *The second principle*. Adopted and adapted from the scale for *Rating* Behavioral Characteristics of Superior Students by Renzulli and Hartman

Owoseni, O. (2008). *Entrepreneurial Education; Creativity and Innovation*. Ajayi Crowther University, Oyo, Nigeria.

Roger, V.O. (2002). *Expect the unexpected or you won't find it:* a creativity tool based on the ancient wisdom of Heraclitus. Paperback. September , 2002.

Rollo, M. (1994). *The Courage to Create. New York. First published in 1975*

Schumpeter, J. (1947).*"The Creative Response in Economic History*. *The Journal of Economic History*. Reprinted in Joseph Schumpeter, Edited by Richard Swedberg, 1991. The Economics and Socialism of Capitalism, Princeton University Press, Princeton, New Jersey)

Schumpeter, J.(1964). *Business Cycles*. McGraw-Hill New York. This book was originally published in 1939.

Schumpeter, J. (1942).*Capitalism, Socialism and Democracy*. Harper and Row, New York.

Schumpeter, J.(1927).*The Explanation of the Business Cycle*. Appeared in Schumpeter J. essays of Economic Topics of J.A Schumpeter. Edited by Richard Clemence(1951). Kennikat Press, Port Washington NY. Reprinted from Economica, December,(1927).

Sir Ken R. (2006). Reading, Writing, and Creativity, Business Week, February 23, 2006,

SUGGESTIONS FOR FURTHER READING

Jamison, K. R. (1996). *Touched with fire:*manic-depressive illness and the artistic temperament.

Kelley, T. etal (2013). *Creative confidence:* unleashing the creative potential within us all.

Lehrer, J. (2012). *Imagine:* how creativity works.

Piitro, J. (2006). *Talented Children and Adults: Their Development and Education* .3rd Edition**.**

Tharp, T. (2006). *The Creative Habit: Learn It and Use It for Life.*