Training Manual

For

General Entrepreneurship Courses in Universities

Course 1: Entrepreneurship and Innovation

MODULE 5: MANAGEMENT OF INNOVATION

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DRAFT MODULE 5: MANAGEMENT OF INNOVATION

Learning Outcomes

Upon completion of this module, students would have been able to:

- discuss the concept, nature and types of innovation;
- appraise the theories of innovation;
- identify change and how it could be successfully managed;
- distinguish between creativity and innovation; and
- explore the impact of technological change.

Contents

(a) The concept, nature and types of innovation
(b) Theories of innovation
(c) Change management
(d) Distinguish between creativity and innovation
(e) Technical change and management of innovation.

RATIONALE

Innovation is the successful development of competitive advantage; it is the presence of innovation that distinguishes the entrepreneur from others. Innovation must therefore, increase competitiveness through efforts aimed at the rejuvenation, renewal, and redefinition of organization, their markets or industries, if businesses are to be deemed entrepreneurial. Innovation is very germane in business today, without which, organizations will not be able to gain competitive success or advantage. That is, for organizations to survive, grow and maximize desired profitable outcome, they demand innovation. It is important to note that innovation begins with creativity as both terms are often used interchangeably. This module, therefore, is to expose the reader to and explain vividly what innovation is all about. The module will also examine the essence of managing innovation and change in the realization of organizational goals.

More so, at the end of this discourse, this module would have established why innovation is a key outcome of individual firms or companies, as well as society that seeks for economic development with vivid illustration and examples applicable and appropriate for the subject matter.

ACTIVITIES

At the end of the module, the following should be accomplished:

1. Classroom presentation and discussions.

2. Have students read Handout 1 and discuss the following questions:

i. What is innovation?
ii. Why is innovation important for creation of new products, processes, methods, markets and new organizations?
iii. What are the various types of innovation?

3. Have students read Handout 2 and discuss the following questions.

i. What is concept of diffusion theory of innovation and disruptive innovation model and how can they be used to assist the entrepreneurs?

ii. What seven pillars of innovation are essential to all entrepreneurs?

iii. What variables determine the rate of adoption of innovations?

4. Have students read Handout 3 and discuss the following questions.

i. What are the forces responsible for change?

ii. Why would an entrepreneur tend to resist change?

iii. What strategies should be used for managing change resistance?

iv. What critical areas require change in small business operations?

5. Have students read Handout 4 and discuss the following question.

What stage processes are relevant for managing and responding to technical change and innovation?

HANDOUT 1

CONCEPT, NATURE AND TYPES OF INNOVATION

A wide range of opinions have been expressed in an effort to explain what innovation means. It should be noted that the term innovation comes from the Latin word ‘innovare’ meaning ‘to make something new’.

- Innovation is the process of taking new ideas effectively and profitability through to satisfy customers.
- Innovation is the successful exploration of new ideas; it is a profitable outcome of the creative process, which involves generating and applying in a specific context product, services, procedures, and processes that are desirable and viable.
- Innovation is the process of creating a commercial product from an invention.
- Innovation is the post hoc recognition of creativity, involving a new and valuable discovery of some kind. In other words, innovation can only be said to have taken place after the event. It is an outcome phenomenon.
- Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or service. It is capable of being presented as a discipline, capable of being learned, and capable of being practiced.

However, the sources of innovation include: (i) unexpected occurrences, (ii) incongruities of various kinds, (iii) process needs, (iv) changes in an industry or market, (v) demographic changes (vi) changes in perceptions, and (vii) new knowledge.

The importance of innovation cannot be overemphasized to the entrepreneur in terms of creation of new products, processes, methods, markets and new organization as well as knowing the various elements of innovation. Okpara (2005) identified the following elements of innovation:

i. Challenge: what we are trying to change or accomplish- the-“pull”.
ii. Customer focus: creating value for your customers- the “push”.
iii. Creativity: generating and sharing the idea(s)- the “brain”
iv. Communication: The flow of information and ideas- the “life blood”
v. Collaboration: people coming together to work together on the idea(s)- the “heart”
vi. Completion: implementing the new idea- the “muscle”

vii. Contemplation: learning and sharing lession lead to higher competency - the “ladder”

viii. Culture: the playing field of innovation includes:
- Leadership (sees the possibilities and positions of the team for action-the role model)
- People (diverse groups of radically empowered people innovate-the source of innovation)
- Basic values (trust and respect defines and distinguish innovation organization-the backbone)
- Innovation values (certain values stoke the fires that makes the “impossible” possible-the spark)
- Context: innovation is shaped by interactions with the world.

As can be seen from the above, innovation can be understood to mean a strategic tool that is imperative for organizational survival. It is also important to observe that innovation begins with creativity. This simply means that organizations intend to gain and sustain competitive advantage through innovation.

Having examined the concept of innovation, some attention needs to be given to the discussion of types of innovation, some theories of innovation, identifying and successfully managing of change as well as exploring the impact of technological change.

Types of Innovation

In a business start-up, the entrepreneur is regarded as the key actor in developing business ideas, marshalling resources and creating an enterprise to bring a new product or service to the market. In a competitive business environment, the entrepreneurs continue to seek out for new opportunities and make the necessary arrangement to convert them into new goods and services. Innovation should, therefore, impregnate the entire enterprise for the creation and invention of competitive edge and relevancy in the market place. Innovation can take several forms:

1. Innovation in process, including changes and improvement to methods. These contribute to increase in productivity which lowers costs and help to increase demand.
2. Innovation in product or services. While progressive innovation is predominant, radical innovation opens up new markets. These lead to increase in effective demand which encourages increases in investment and employment.

3. Innovation in management and work organization, and the exploitation of human resources, together with the capacity to anticipate techniques.

It is also imperative to note that from the extant entrepreneurship literature, three basic types of innovation can be categorized. These are: breakthrough innovation, technological innovation, and ordinary innovation.

Breakthrough Innovation

A breakthrough innovation is extremely unique innovation which in most cases determines the basis for further innovation in that area or field. Consequently, such innovations need to be protected as much as possible by strong patents, trade secrets, or copyrights. Some good examples of breakthrough innovations ideas are: the Internet, the automobile, the computer, the airplane, etc.

Technological Innovation

In contrast to breakthrough innovation, the technological innovation occurs more frequently than breakthrough innovation and in general is not at the same level of scientific discovery and advancement. It should be acknowledged that technological innovations also offer advancements in the product and/ or market area. Examples of technological innovations are voice and text messaging, the jet airplane, the personal computer, the flip watch for containing pictures, etc.

Ordinary Innovation

Unlike the breakthrough and technological innovations, the ordinary innovation is the one that occurs most frequently. This kind of innovation extends the technological innovation into a better product or service. These innovations usually come from market-led or market- push innovation. In other words, the market has a stronger effect on the innovation (market pull) than the technology (technology push).

Questions

1. What is innovation and why is innovation important for creation of new products, processes, methods, markets and new organizations?

2. Discuss the various types of innovation?

HANDOUT 2

THEORIES OF INNOVATION

A number of theories have been put forward on the phenomenon of innovation. In this section, the main theory of innovation "Diffusion theory of innovation" will be examined in some details.

Diffusion Theory of Innovation

According to this theory, once innovation occurs, innovations may be spread from the innovator to other individuals and groups. However, this process has been proposed that the life cycle of innovations can be described using the 'S' – curve or diffusion curve. The S-curve derives from an assumption that new products are likely to have "product life" that is, a start-up phase, a rapid increase in revenue and eventual decline. As noted by the extant management literature, majority of innovations never gets off the bottom of the curve, and never produces normal returns.

Innovative entrepreneurs will typically be working on new innovations that will eventually replace older ones. Successive S-curve will come along to replace older ones and continue to drive growth upwards.

Key to Rogers' (1995) definition of diffusion is the presence of four elements in the diffusion of innovation process. These elements include the following:

1) The Innovation: an idea, practice(s) or objects that is perceived as new by individuals or a group of adopters.

2) Communication Channels: the means by which innovations move from individual to individual, or group to group.

3) Time: the non-spatial interval through which the diffusion events occur. These events include the innovation-decision process, the relative span of time for the individual or group to adopt the innovation and the innovations' rate of adoption in a system.

4) A Social System: a set of interrelated units that are engaged in joint problem solving activities to accomplish a goal or goals.

The Disruptive Innovation Model

Innovation often outstrips the capacity of the market place to assimilate it. Companies almost always seek to solve the hardest problems, and to do so at a pace faster than consumers can absorb, failing to recognize that the performance level customers can utilize is relatively flat. Thus, innovation for innovation's sake is seldom financially successful. The characteristics of sustaining innovations and disruptive innovations are separate and distinct as stated in Table 1.

The characteristics of sustaining innovations and disruptive innovations are separate and distinct:

Sustaining Innovations	Disruptive Innovations
Better	Different
Premium price	Low price
Next-generation	Good enough for now
Leap forward	Leap down
Complicated	Simple

Source: Anthony (2005)

To survive, entrepreneurs must use the innovation model appropriate to where they are positioned in the market. In this case, the seven pillars of innovation are essential to all entrepreneurs who want to meet their goals and have competitive advantage.

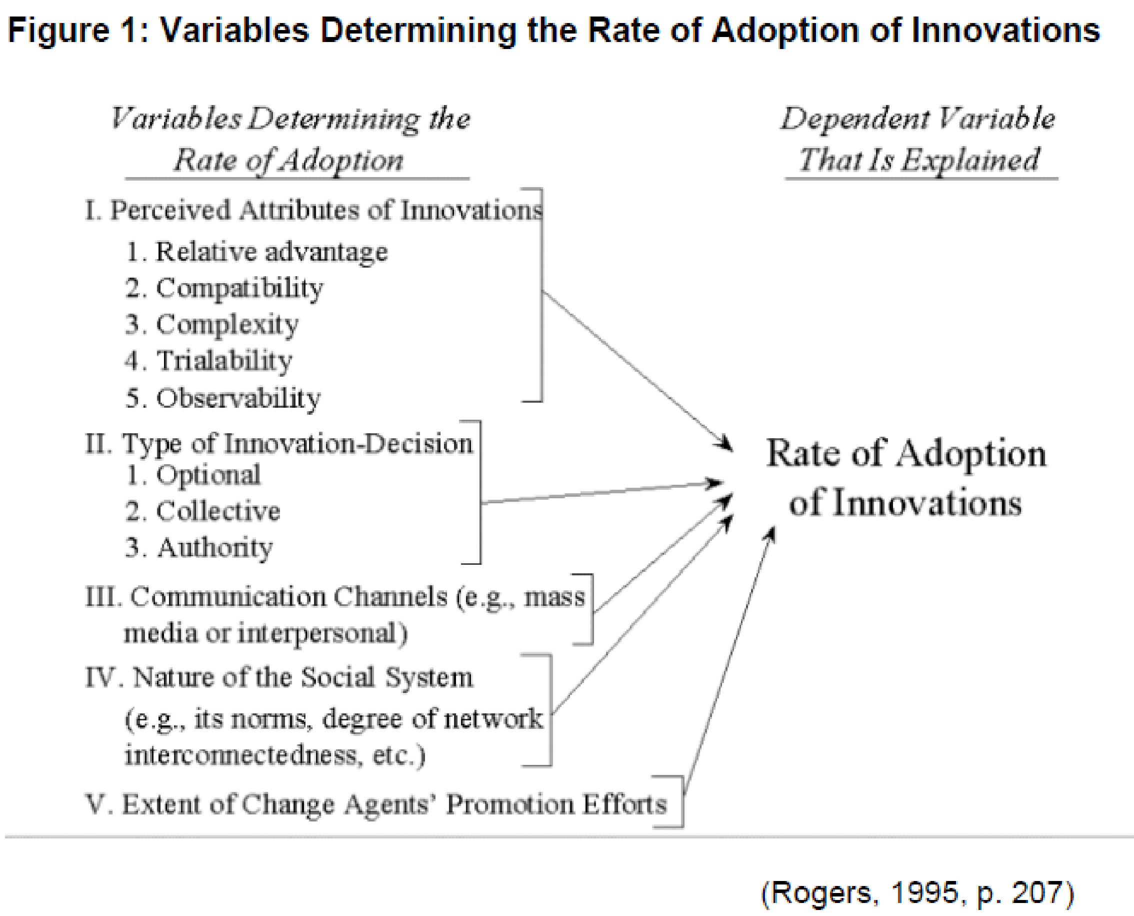
Seven Pillars of an Innovation Dynasty

Remove	**Insert**
Using one process for all innovations	Different resources and processes
Talking about the importance of innovation	Live and breadth innovation
Assuming business as usual works	Block corporate antibodies
Expecting projects to get big fast	Be patient for growth& impatient for profits
Looking for "right-stuff" managers	Find "Schools of Experience" staff
Assuming you have all the answers	Take an external perspective looking or "know-how," not "know-who"
Keeping a tight handle on doing things right	Embrace failure that allows for learning and adapting

Source: Anthony (2005)

Rogers also offers a very scientific approach to understanding the rate of adoption. Rogers (1995) has developed five variables which affect the adoption rate of any particular innovation. These include 1) perceived attributes of innovations, 2) type of innovation-decision, 3) communication channels, 4) nature of the social system, and 5) extent of change agents' promotion efforts. Rogers' model could help the entrepreneur to consider the basic forces which affect both adoption rates, and the factors which may lead to the rejection of an innovation. A schematic description of this model is shown below in Figure 1.

Figure 1: Variables Determining the Rate of Adoption of Innovations



Questions

1. Explain diffusion theory of innovation and disruptive innovation model.

2. What are the seven pillars of innovation that are essential to all entrepreneurs who want to meet their goals and have competitive advantage?

3. Discuss the variables determining the rate of adoption of innovations?

HANDOUT 3: CHANGE MANAGEMENT

Most entrepreneurs and business managers have seen change becoming a regular aspect of organizational life and they must constantly monitor and respond to these changes appropriately. But the fact still remains that for entrepreneurs to respond optimally to these changes within the organizational context they need to first understand the forces responsible for these changes. Secondly, they must acknowledge the need for change and ability to cope with it or resist it and become a victim of change. In this section of the module, we shall look at how organizational change can be managed with emphasis on its meanings, causes of changes or the forces responsible for change, resistance to change, and managing resistance to change.

Change Defined

- Change is defined as the transformation in patterns of organizational activity.
- Change has also been defined as modification of those forces keeping a system's behavior stable.
- Change can be seen as an overhaul of both internal and external environments of an organization.

From the foregoing, one finds that organizational change involves a shift from the usual mode of organizational activities towards another that is adjudged to be more suitable and efficient. This means that there exist a new set of attitudes, behavior, technology and organizational arrangement. Entrepreneurs and managers should note the various elements in the organization are immediately faced with new wave of change.

Forces Responsible for Change

It is imperative for entrepreneurs to identify and know those factors that bring change within the business environment where they carry out their business operations. Identifying and knowing these forces responsible for change or factors that bring changes, entrepreneurs can then identify a variety of options available for them to survive, grow, and sustain competitive advantage. These forces responsible for change are:

- economic factors
- change in technology
- social causes
- political and legal changes and
- intense competition

Economic Factors: Entrepreneurs should note that economic factors have imparted very serious effects on consumers' behavior or attitudes of buyers of goods and services. With the anticipation of any future inflation, a buyer now tend to buy and save or prefers using all what they have to buy what is available and possible. Thus, saving or stocking against the near future.

Consequently, just as organizations are trying to be current and also have latest information on economic changes or issues which are published regularly, entrepreneurs should also do the same since these information are very vital for the continuity and survival of their operations. In brief the economic factors are: business cycles, GNP trends, interest, money supply, inflation, unemployment, disposable income, energy availability and cost, etc.

Change in Technology: The emergence of some technological devices, such as thinking computers, robotics, computer engineering, miracle drugs, space communications, lasers, cloning, satellite networks fibre optics, electronics money transfer etc, have altered the frequency of operations of organization. These changes have influenced both local and international business activities. Entrepreneurs are therefore encouraged to buy into technologies that can completely change or improve the total operational standard or life of their ventures.

Social – Cultural Causes: Social, cultural, demographic and geographic factors could have very serious effects on the products, services, markets and customers of an organization if ignored or not considered by the organization in its operation. For instance, there are a lot of changes in the family structure, marital life, and self-dependence.

Also, an entirely different view of social class in terms of minority and majority groups as per discrimination has emerged. All these and other social, cultural, demographic and geographic related factors have created the need for different types of products, services, and strategies by companies as well as entrepreneurs to get along with these changes.

Political and Legal Changes: Political and legal changes are the other set of major environmental variables that can influence the external audit of an organization or a venture.

A summary of some of the political / legal changes that should be noted by entrepreneurs are monopolist legislation, environment protection law, taxation policy, foreign trade regulations, employment law, government stability, etc.

Intense Competition: This exists among ventures or businesses that offer similar products or render similar services. Entrepreneurs should note that there is the need for them to obtain vital information about their competitors. Such information include:

quality of products/service offer by competitors, financial information, weakness and external opportunities etc. This information will enable the entrepreneur and his/her venture not only to improve his/her products/services but also allow entrepreneur to gain competitive advantage over his/her competitors.

Resistance to Change

An entrepreneur tends to resist change because it is easier to follow known paths already well-established and learned than to change or learn and adapt to new methods where the outcomes may not be as certain. Some of the factors that increase entrepreneur resistance to change include:

- ♦ **Uncertainty about the Impact of Change:** One of the major reasons why an entrepreneur will resist change is because of the uncertainty about the impact of change. For instance, the change would be resisted by an entrepreneur, if it could mean unfavorable change in government policy as related to its business operation or difficulties experienced when forced to a new location.

- ♦ **Economic Implications:** An entrepreneur will resist the change when forced to a new location as this may affect the cost of acquiring a new location, loss of customers which may affect his/her market share or profit, cost of operation in some cases.

- ♦ **Lack of Proper Communication:** If the need for the change is not communicated to entrepreneurs and small business owners in time and in an acceptable manner, then it can lead to resistance. For instance, government policies in areas such as taxation, environment protection laws, trade regulations, etc. should be well communicated to these small business owners and entrepreneurs to enable them see reasons for the change.

- ♦ **The Group Resistance:** Sometimes, the individual entrepreneurs and small business owners resist change because the group, to which they belong, resists it. The individual entrepreneurs usually comply with the group norms and codes and support the group attitudes. For instances, when government in some states in Nigeria decided to relocate or renovate some of business districts where these entrepreneurs or small business owners carry out their business operations, some individuals could see the need for these change but if the groups they belong do not see the need, they have no other option than to fully support the group to which they belong.

- ♦ **Emotional Reasons:** One of the major reasons for change resistance by an entrepreneur is the emotional turmoil that a change may cause, especially if the past experiences of changes have not been useful.

Seven Critical Change Areas

A brief outline of what the future may hold for change in small business operations in seven critical areas of planning during the current world economic environment as are outlined by as follows:

1. **Capital.** It will be more difficult and expensive to obtain and might become virtually unavailable to many small businesses at any price.

2. **Raw materials.** They will also be increasingly costly and difficult to obtain. Smaller firms may have to rely on larger inventories or switch to more abundant substitutes.

3. **Labor**. This is the most plentiful resource for a business. Abundant labor will be substituted for scarce capital.

4. **Technology.** Technology will become more important to small business in the future than in the past. Small business will continue to profit from technological advances which will bring products that it can help to manufacture, market, or use to improve its own performance. However, capital and energy constraints may hinder the flow of new technology.

5. **Markets.** Markets based on products which consume large amounts of increasingly costly resources will tend to decline, while those which make smaller demands on irreplaceable resources or actually conserve them will tend to flourish.

6. **Government regulation.** Regulation is almost certain to increase, as government regulatory agencies struggle to keep the country prosperous.

7. **Management.** Entrepreneurs will have to exhibit greater professionalism and foresight if they are to guide the small business sector through the period of economic scarcity.

Strategies for Managing Change Resistance

Some of the strategies for managing change resistance include:

- ▪ **Education and Communication:** if entrepreneurs do not have adequate information or the information that they have is inaccurate about government policy relating to their business operations, then it is necessary to educate them about the change, its process and its working. This education can be carried out through training classes, meetings and conferences.

- **Participation and Involvement:** Participation of entrepreneurs and small business owners in change of government policy relating to their operations would ensure commitment to implementation of such change. Also, entrepreneurs should ensure the participation of their employees in certain organizational change process.

- **Negotiation and Agreement:** Managing change resistance requires the need for negotiation agreement with all concerned stakeholders. This is so, as some individuals or groups may end up as losers due to the change and where such individuals or groups have considerable power to resist.

- **Timing of Change:** The time of change goes a long way to determine the level of change resistance. It is suggested that entrepreneurs should choose the time when the organizational climate is highly favorable to change, when there is need for organizational change.

- **Leadership:** The credibility and prestige placed upon the entrepreneur could also influence the employees to be involved in the change process. In the same manner, credible government leaders could also influence entrepreneur to be involved in the government policy change process relating to the entrepreneurs' business operation.

Questions

1. What are the forces responsible for change?

2. Why would an entrepreneur tend to resist change and what are the strategies for managing change resistance?

HANDOUT 4: TECHNICAL CHANGE AND MANAGEMENT OF INNOVATION

It is a must for entrepreneurs to manage and respond optimally to technical change and innovation. Failure to respond to these changes may undermine the basis of their ventures existence. Accordingly, a four stage processes which is relevant for managing and responding to technical change and innovation which by its very nature, requires change is stated below:

- **Stage 1. Scanning the Environment:** for relevant signals indicating threats and opportunities for change.

- **Stage 2. Evaluation of Opportunity:** This involves deciding which of these signals to respond to, based on a strategic view of how the enterprise can best develop.

- **Stage 3. Resource Acquisition:** This involves acquiring the resources to enable the response. This might be as a result of R & D or acquiring key resources from elsewhere (e.g. via technology transfer).

- **Stage 4. Technological and Market Development:** This involves implementing the project, developing both the technology and the market in order to respond effectively.

CASE STUDY

MUNGO'S SERVICE STATION

Three years ago, Mungo bought a service station from an old man who had run the station for 16 years using old machines and hand driven pumps. The sales were the best of any service station in the town. The former owner had been a very popular man in the area and had many loyal customers. Some of this popularity rubbed off on the new owner but there were a lot of people in the area who didn't like Mungo.

As soon as Mungo took over the service station, his business began to decline. Within a period of three years, almost all old customers had left for the nearby service station and few new customers come to the service station. The biggest reason for losing sales was the attitude Mungo had towards his customers. For example, when a boy came to the station with his bicycle tyre and wanted air for an inflated bicycle tyre, Mungo told him "I'm here to sell gasoline, not to give air, ask your father to buy you a bicycle pump, don't bother me".

Another time a man on his way to a wedding stopped for gasoline. Mungo sold him gasoline but was in such a hurry and seemed to be very tired because of the hand pump he was using; he didn't check the oil or wash the windows. When the man asked Mungo to do these things, Mungo did them in bad humour and grumbled about all the work he had to do. He cleaned only the windshield in spite of the fact that all the windows were dusty.

After several instances like these, word got around about Mungo's bad personality. Nobody wanted to buy gasoline from Mungo's service station. The successful business Mungo had taken over went broke after three years as most of the customers shifted to a nearby service station.

Questions

1. What things will make an entrepreneur popular?
2. The service station had been a success for 16 years before Mungo took over. Why did it go broke within three years after Mungo became the owner?
3. "..... Never argue with a customer. Adopt the attitude that the customer is always right no matter how wrong he is". Discuss with reference to this case study.
4. What should Mungo have done to attract more customers?
5. What other factors could have influenced the customers to shift to a nearby new service station?

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