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AEX 402 COMMUNICATION AND INFORMATION MANAGEMENT TECHNIQUES 1+2

THEORY

Transfer of technology-importance in agricultural development, major components - communication, scope, importance, elements and models - messages - selection of information, information management systems- selection of channels. Feedback - factors affecting communication, Communicator - receiver relationship. Diffusion and adoption - Process and meaning.

LECTURE SCHEDULE

THEORY

1. Transfer of Technology - Meaning, Importance In Agricultural Development
2. Communication, Scope And Importance
3. Elements of Communication - Importance of Elements
4. Models of Communication - Characteristics of Each Element
5. Models of Communication - Aristotle's Model, Berlo's Model And Paul Leagan's Model
6. Message and Selection of Information.
7. Information Management System
8. Selection of Channels And Combination of Channels
9. Mid semester Examination
10. Effective Feedback Mechanism - A Critique
11. Factors Affecting Communication
12. Communicator-Receiver Relationship For Effective Communication
13. Modern Gadgets For Communication

14. Constraints For Effective Communication
15. Approaches For Effective Communication
16. A Model For Effective Communication
17. Diffusion And Adoption Process And Meaning

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1. TRANSFER OF TECHNOLOGY - MEANING, IMPORTANCE IN AGRICULTURAL DEVELOPMENT

1.a. Transfer of Technology (TOT)

Transfer of Technology (TOT) is a systematic process of making farmers 'aware' of a new technological components or system, then creating farmer's interest in the new technology, so that they can 'evaluate' it within their own farming system and their own agro economic conditions.

In transferring new end science - based technology to farmers, extension systems use mass media in the early stages to create farmers' awareness and interest. When farmers become interested in a new technology, they may need more specific in-depth knowledge about the technology, so that they can learn how to use it and to evaluate its expected costs and anticipated benefits.

At this stage, group methods, including meeting, demonstrations and field days are typically used. These methods are supplemented with in-depth brochures that farmers can take home so that they will know how to incorporate the new technology into their farming system. In general, most information about new technology (indigenous science based) travels from farmer to farmer through word of web of mouth informally.

1.b. Importance and major components

Technology transfer begins at the research system. The process of taking technology, mature technologies generated by the research system into the extension system and on to farmers are a vital component of the technology transfer process.

Regular communication between researchers and extension agencies can help to ensure the successful transfer of new agricultural technologies, to end-user, the farmer communication with researchers is vital for extension agencies to acquire appropriate technical information that will enable them to help farmers.

This communication channel enables extension agents to retain information on new and improved agricultural technologies to their clientele. A well planned and directed communication effort, bring together researchers and extension agencies, can ensure that there is a timely movement of necessary technical information into the extension system and on to the farmers and other users.

A research extension communication channel benefits not only the work of extension agencies but can help to improve the work of researchers as well. Effective communication between research and extension agencies will help researchers to better understand the current practices, problems, social conditions and technological needs of farmers. This communication can result in the establishment of priorities ensuring that more appropriate and cost effective research programmes are followed.

Over the years, several campaign models for technology transfer activities have been designed. But an effective model should be

1.c. Participatory: Involving research, extension and communication experts in the formulation, application and evaluation of the communication process.

1.d. Integrative: Combining researchers, extension agents and communication specialist in a continuous interactive process of strategy developments.

1.e. Practical: Focusing on 'real' problems in farmer's fields and using local resources to solve the problems. In agriculture technology transfer, extension workers and farmers are main target groups to which we have to supply agricultural information and new technologies for the agricultural development.

Before supplying agricultural information and new technologies, a survey should be made to find out the problems and constraints of the extension workers and farmers in the adoption of latest agricultural technologies.

2. COMMUNICATION, SCOPE AND IMPORTANCE

2.a. Definition: According to (i) Paul Leagans, it is a process by which two or more people exchange ideas, facts, feeling of impressions in ways that each gains a common understanding of the message. (ii) Howland, it is the force by which an individual communicator transmits stimuli to modify the behaviour of other individuals.

E.g. Extension worker influencing the farmers, to make them to orient towards positive attitude to adopt new technologies.

2.b. Meaning

(i) Process of social interaction (i.e.) in communication selection, two of more individuals interacts.

(ii) It apparently influences the ideas, attitude, knowledge and behaviour of each other.

(iii) In a face-to-face situation, it is not a mere exchange of information, but something more, apart, because in such a situation along with information, gestures, expressions, language, the manner of expression and for all produce impact.

Some kind of change occurs as a result of interaction.

The change may be visible in terms of knowledge and behavioural change.

E.g. Adoption of technology or practice of agriculture.

2.c. Scope of communication

(i) **Oral:** An average man spends 70 % of his precious time on communicating verbally and spends 10 to 11 hrs/day on oral communication and sends our ideas for other's perception.

(ii) **Non-verbal:** Through symbols like gesture, facial expressions, movement of arts, raising eyebrows, rolling eyes, starring look, stern look etc., would make communication effective.

(iii) Communication can be made possible in different ways, levels and reasons.

E.g.: An extension worker reads the letters - written communication received or else. Communicate his subordinates through message slip about his work.

(a) An extension worker speaks to farmer in a meeting - spoken communication.

(b) He addresses a gathering - A group communication will persist there.

(c) He contemplates for the next month's programme (Introspect)- A self-communication.

(iv) Communication in employment - provides opportunities to get employment accessibility in journalism, advertising, filmmaking, public relations, televisions, television programme co-ordinator and audio-visual counselor.

(v) Communication industry - Opinion seekers, attitude researchers and marketing researchers etc., play their roles in communication.

(vi) Communication in management - In any management sector, everything is done only by means of effective communication between superior-subordinate, superior-employees at lower levels, labourers, experts, skilled workers. As administration grow, even the machine operator spends more time in manipulating symbols.

(vii) Communication removes the time lag - Communication has an inbuilt snowball that makes the message reach its audience instantly without any delay. What occurs today may be obsolete tomorrow. Hence, the day to day development can be diffused immediately without any lag and gets introduced among the mass.

2.d. Importance of Communication in Extension work

(1) Communication establishes a favourable climate in which development can take place.

E.g: All mass media and personal channels give upto date and updated information, so that mass audience are enabled to get acquainted with recent technologies, information to be utilized.

This media accessibility facilitates a proper exchange of information, ideas etc.

(2) Communication has a multiplier effect. It brings synergy in its process of communication in the sense, a sort of reinforcement of ideas due to various convergent forces.

(i) Print media effectively communicates the recent technologies to the needy clientele.

(ii) Spoken communication cautions the farmers about weather forecast, seasonal warnings, irrigation methods etc.

(iii) Geographical information system and computer aided network are advanced systems of communication that would ensure soil type of varied zones.

(3) Communication raises and aspirations of the people.

E.g. Communication skill of extension worker to a greater extent would convince and create trustworthiness about the HYV's, genotypes, tissue culture, biotechnology etc.

They kindle the minds of the farmers to think of advanced technologies and to apply it for their betterment and thus fulfilling their aspirations of becoming a higher socio-economic category.

(4) Communication is essential for all activities.

E.g. To inform people, to instruct people

To persuade and convince for acceptance of idea

To educate the people

To entertain the audience etc.,

(5) Communication is essential for good leadership

One, if wanted to succeed, he should communicate clearly, concisely and unambiguously. His message should not be fallacious (misleading). He can guide people in a desired, direction to achieve the goals and objectives. In that way, it is essential quality need to be possessed by a successful leader.

3. ELEMENTS OF COMMUNICATION - IMPORTANCE OF ELEMENTS

I. (a). The four basic elements in the communication process.

(i) Source: To say the person whose ideas or meanings to be transferred to another person.

(ii) Second element is the receiver, namely the person to whom the ideas or meanings are to be transferred.

(iii) Thirdly, there must be a message that can be transferred from the source to the receiver.

(iv) Finally, message should have to travel through a channel or medium in order to make the passage from source to the receiver.

The six steps or stages in the process require a little more explanation.

II. (a) **Creation**: The person who is the communication source conceives an idea, which he wants to transit to someone else. Be clear and determine the message, you would communicate. A poorly conceived idea almost certainly results in poor communication.

(b) **Encoding**: Meanings and ideas are structures of mind. They cannot be seen or heard or felt. If converted into symbols or words, it can be seen and heard. Words are Symbols that stands for meaning. In case, suitable symbol is not available, he can use a gesture or guidance. Moreover, appropriate symbol or word with suitable gesture would facilitate better understanding.

(c) **Transmission**: An idea has been encoded into symbols is called as message. A message is simply an encoded idea. Messages have to be either spoken (or) written and displayed.

1) Who is trying to communicate?

2) How long is the message?

3) What is a physical distance?

4) What technical means are available to the source?

All the first three stages are within the control of the communication source.

(d) **Reception**: Transmitted through appropriate channel. Message received depend upon the environment conditions under which the message is sent.

Secondly, on the state of mind and readiness of the receiver to receive it .Environmental condition affects reception:

E.g. (1) Poor lighting conditions.

(2) Receiver's tiredness.

(3) Degree of congruence between message sent and message received.

(4) Environment has direct bearing on fidelity. Fidelity means, which and how many of the receiver's five senses are activated to receive the message.

(e) **Decoding**: Encoded message must now be decoded by receiver in order to comprehend its meaning. One cannot decode a message whose symbols one does not recognize.

A more serious situation arises when the receiver believes he has understood the message, whereas, in fact the source intended it to convey a different meaning. The result in this case is misunderstanding.

In such a situation, greater care must be taken in encoding messages and transmitting them. It is probably impossible to avoid this misunderstandings, but atleast it can be minimized.

(f) **Assimilation**: This is the final stage. In order to make, sense of the decoded message, to understand it, the receiver, must relate and interpret it to what he already knows and assimilate it with the total information available to him. Without such assimilation, the decided message remains meaningless.

III. To summarise: The communication process involves four basic elements and six stages:

a) The source
b) The message
c) The channel
d) The receiver

The six stages of the process are

a) Creation
b) Encoding
c) Transmission
d) Reception
e) Decoding
f) Assimilation

4. MODELS OF COMMUNICATION - CHARACTERISTICS OF EACH ELEMENT

4.a. There are normally 4 elements present in the communication model. They are

(i) Source
(ii) Message
(iii) Channel
(iv) Receiver

In the recent modified model, audience response is also included, which is otherwise called as feedback … Feedback is important in giving the opinion or suggestions for improvement to be made by using appropriate channel relevant and feasible to the needs of the receiver.

4.b. Characteristics of Good Communicator

The qualities of a source should be

(i) Innovative in his ideas

(ii) Should have greater exposure to mass media sources

(iii) Cosmopolitan in nature

(iv) Access to social participation to a greater extent

(v) Interested in audiences betterment and welfare

(vi) Interested in message (subject matter) and ensure its helpfulness to people

(vii) Aware of the communication channels with more intactness

(viii) Capable enough with professional abilities

(ix) Able to plan for judging the merit of the results

(x) Skilled to select treat, express the messages (verbal and written)

(xi) Capable to gathering evidence of results

In toto, a good communicator is supposed to visit villages and listen to the people's views, needs, problems etc.

4.c. Characteristics of a good message

A good message should be

(i) In line with the objective to be attained

(ii) Clear understandable by the audience

(iii) In line with mental, social, economic and physical capabilities of the audience

(iv) Significant - economically, socially or aesthetically to the needs, interests and values of the audience.

(v) Specific- no irrelevance (or) misleading material

(vi) Simple - cover only one point at a time

(vii) Accurate - scientifically sound, factual and current

(viii) Supported by factual material covering both sides of the argument

(ix) Appropriate to the channels selected

(x) Appealing and attractive to the audience

(xi) Applicable - can apply recommendations to one's own particular situation

(xii) Adequate - combining principles and practices in effective proportion

(xiii) Manageable - can be handled by the communicator and within the limits of time.

4.d. Characteristics of channel

Certain characteristics of channels are identified and are delineated below.

(i) It specifies the direction of message flow

(ii) It gives the message accuracy. Low (in interpersonal) and high (in mass media)

(iii) It selects the recipient depending upon the channel

(iv) It produces feedback to the sender of the message

(v) It overcomes the selectivity process

(vi) It is capable of bringing desirable effects as the part of the audience

4.e. Characteristics of audience (receiver)

(i) Active participation increases learning

(ii) A good predictor of communication behaviour as educational level

(iii) Individual tends to select that which is most accessible

(iv) Lack of attention affects communication

(v) Receiver is liable to misinterpret and misperceive the message

(vi) Research re-emphasises the influence of personality differences on response

(vii) Most of them jump to conclusions

(viii) Most of them incline to closed minds

(ix) Most persons listen to only to words than to the meaning.

4.f. Characteristics of feedback (Audience response)

(i) Response is a function of the whole personality
(ii) Misperception is a continuous problem
(iii) Influential groups are involved in message response
(iv) Mass communication intensifies propaganda conflicts
(v) Much available information is imperfectly absorbed
(vi) Lack of primary experience affects communication
(vii) Communication builds on existing attitudes

(viii) Mass communication increases the commonality of experience
(ix) Communication devices have the ability for thought control
(x) Induced action and social interaction might affect communication effects
(xi) Books, Newspapers, Magazines, Leaflets have effects like instrumental, prestige, reinforcement, enriched aesthetic experience and respite
(xii) Cultural values and the social organization are determinants of communication.

5. MODELS OF COMMUNICATION - ARISTOTLE'S MODEL, BERLO'S MODEL AND PAUL LEAGAN'S MODEL

Definition: Model is a simplified graphic presentation of ideas.

5.a. Aristotle's model

Three elements are necessary in the communication process.

1. Speaker : The person who speaks
2. Speech : The speech that he produces
3. Audience : The person who listens

In the rhetoric, Aristotle (384 - 322 BC) provides the first basic persuasive communication model. He said that we have to look at three communication ingredients: namely, the speaker, the subject and the audience. He meant that each of these elements is necessary to communicate and that we can organize our study of communication process under the three headings.

(i) the person who speaks

(ii) the speech that he produces and

(iii) the person who listens.

Traditionally the creation of significant things to say by the source has been treated as rhetoric invention. In classical antiquity, a speaker was taught that five processes were involved in the study of communication, namely invention, organization, language memory and delivery. Message preparation, according to Aristotle, involved invention (finding material to be included in the message), arrangement (organizing the material some persuasive manner), language (or) style (to fit the speaker and the audience), memory and delivery (the practice of actual presentation). Invention was the most important to many rhetoricians, since the discovery of ideas was central to the whole process and all other elements seemed to emanate from it. Indeed, Aristotle uses 'discovery of the available means of persuasion' as his definition of the whole art of persuasive communication. Another implication of Aristotle's conception of rhetoric is that persuasion is contingent upon the impression that a speaker creates or maintains. By and large Aristotle and later rhetorical theorists were interested in the ability to communicate effectively.

Merit

Many of our earlier communication models bear the imprint of Aristotle's model, although several new key concepts have been added.

One of the greatest faults in Aristotle's theory was his view of persuasion as a one way process flowing from the communicator to the receiver. He did not include in his writings the role that the communication encoder is responsible for taking the ideas of the source and putting them into a code, expressing the source's purpose in the form a message. This requires a third ingredient, an encoder. The communication encoder is responsible for taking the ideas of the source and putting them into a code, expressing the source's purpose in the form of a message.

The fourth ingredient needed in a communication act is a channel. A channel is a medium, a carrier of message. It is correct to say that message can exist only in some channel. However, the choice of a channel is an important factor in the effectiveness of communication. When we talk, somebody must listen. When we write, somebody must read. The person(s) at the other end can be called the communication receiver(s), the target of communication. Just as the source needs on encoder to translate his purpose in a code, the receiver needs a decoder to translate feedback can play in influencing the speaker.

- Invention
- Organization
- Language
- Memory
- Delivery

5.b. Berlo

According to David Berlo (1960) the model of communication consists of

Berlo's model of communication

Berlo (1960) model is one of the most widely used and is based on an impressive background of behavioural theory and research. As a result, it has exercised a far-reaching influence on communication research in the social sciences.

According to this model, all human communication has some source. Given a source with ideas, needs, intensions, information and a purpose for communicating a second ingredient is necessary for communicating. The purpose of the source has to be expressed in the form of a message. This requires a third ingredient, an encoder in their structure, elements, content, code and treatment. Berlo emphasizes that this model is far from static and needs feedback between source and receiver and the receiver becomes a source. Once again, this is a linear model of communication with emphasis on the communicator. As stated earlier, this model has had a far-reaching influence on communication literature.

5.c. Paul Leagans(1963)

It has the following elements:

1. Communicator

2. Message
3. Channel
4. Treatment of message
5. Audience
6. Audience response

Paul Leagan's model of communication

Leagans (1961) defined Communication as a process by which two or more people exchange ideas, facts, feelings impressions, in ways that each gains a clear understanding of the meaning, intent and use of the message.

According to him, successful communication in extension education requires a skilled communicator sending a useful message through a proper channel, effectively treated to an appropriate audience, that responds as desired. Thus the key elements involved in this is to translate his purpose message to express purpose in a code, the receiver needs a decoder to retranslate, to decode the message and to put into a form that the receiver can use. So, according to Berlo(1960), the ingredients in a communication process include

- the communication source
- the encoder
- the message
- the channel
- the decoder
- the communication receiver.

Merit

In this model, communication is seen as a continuous process in which noise is reduced by a process called feedback. As stated earlier, this model includes four elements - source, message, channel and receiver. It is fairly explicit about the elements involved in each. In sources, we find that the source's communication skills, attitudes, knowledge and social and cultural systems are the important variables. The receiver has the same variables. Channels include seeing, hearing, touching, smelling and testing and messages are varied model are

(i) Communicator

(ii) Message (or) content

(iii) Channels of communication

(iv) Treatment of message

(v) The audience

(vi) Audience response

Leagan's emphasis on treatment of message and audience response comes from his background in extension education. According to him, the extension educator derives from his knowledge of technology and extension processes, the principles and content from which he synthesizes a system of communication to achieve educational objectives: he should continue to communicate, repeat, motivate, persuade, until the desired response occurs on the part of the receiver(s).

6. MESSAGE AND SELECTION OF INFORMATION

6.a. Message

A message is usually perceived as some alterations (or) disturbances of the physical environment, which can be attended to and discriminated from the rest of the physical environment.

But, from the extension point of view message means the facts, feelings, impressions, attitude, information etc., that a communicator wishes his audience to receive, understand, accept and act upon to achieve the goal.

6.b. Dimensions of a message (Berlo, 1960) (Intended message)

Three factors need to be taken into account in the message. They are

(i) Message code

(ii) Message content

(iii) Message treatment

1. A message code: A code is anything, which has a group of elements (a vocabulary) and a set of procedures for combinig those elements meaningful (a structure). Language is a code. Even drawing involves a code.

2. The message content: This can be defined as the material in the message selected by the source to express his purpose. Content like a code, has both elements and structure. While presenting information some order of sequence should be maintained.

3. The message treatment: The treatment of a message can be defined as the decisions, which the communication source makes in selecting and arranging both code end content in order to achieve comprehension on the part of the receiver.

c) Treatment of the message

Treatment means the way a message is handled, dealt with, so that the information gets across the audience. The purpose of treatment is to make the message clear, understandable and realistic to the audience. Treatment of message by the communicator shall depend to a great extent on (i) choice of the channel and (ii) nature of the audience. Treatment is a creative task that has to be tailor-made for each communication function.

6.c. Factors affecting the message

The message when communicated must be comprehensible to the receivers. A message may be framed properly and effectively treated to the extent that it actually imprints these three qualities on the receiver's mind.

a) Methods of message organization

It includes repeating the key ideas, comparing and contrasting the important ideas presenting the ideas in chronological, and psychological sequence, using inductive and deductive analysis, drawing explicit conclusion for the audience or leaving conclusion implicit for the audience to draw etc.

b) Methods of getting attention

The intensity and the extensity of the voice, the movements of the communicator and changes in rate movement, loudness and pitch while communicating a message are attracting the attention of the receiver.

c) Methods of speaking

It includes the nature of ideas. Knowing himself giving accurate, up-to-date and timely information, knowing the audiences, keeping the communication interesting, by local proverbs, stories and adding a bit humour and personal touch, the message can be made effective.

7. INFORMATION MANAGEMENT SYSTEM

7.a. Information management

Definition: Ivan (1974) defines information management as an advanced communication system, which utilizes modern data processing technique in recording, storing, processing and making available data required by management for operational decision making.

It may be defined more precisely as the effort to control and utilize this information resource through formal systems of processing, storage and retrieval.

As we live in the age of information explosion, the intended users of the information need to understand and acquire the skill to manage the required information.

7.b. Information management: Basic steps

Information management deals with the software aspects.

The basic steps involved in the process of Information management are input, processing, storage, retrieval, output, utility and feedback. The intended user of the system can be called as an Information manager.

The first step, input refers to the collection of new data, which can be obtained from resource persons, office records, private studies, talking with local farmers, surveys and investigation. Data processing, the next step refers to the activities of manipulating the collected data, such as classifying, arranging, comparing, analysing, merging, computing and summarizing. Processing activities make it possible the transformation of input into output. The processed data or information needs to be stored for future use.

Storage of information is noting, indexing, categorizing, or cataloguing and transformation for reproduction in a suitable form, amplification or reduction of initial information in separate files or records. Information retrieval is the process of searching for a document or its surrogate with an ultimate aim to identify and retrieve it. The output is the result of an operation on raw data, which is feedback to the system after its utility by the intended users.

7.c. Information Technology (IT)

'IT' goes far beyond mass media communication offering possibilities for change and a new perspective. It deals with hardware aspects. It is the acquisition, processing, storage and dissemination of vocal, pictorial, textural and numerical information by a micro electronics based combination of computing end telecommunications which has been developed in response to the demand for information processing and exchange.

'IT' permits rapid dissemination of ideas, values, processes, supplements, education, science, provides potential for two way exchange of information to have what people really need and manage resources and data to facilitate production and distribution of wealth.

7.d. Information technology: Extension's future

We are drowning in information, but starved for knowledge. The extension service must be able to provide information that makes a difference be need to adopt technologies that will enhance delivery system and bring us gracefully into the next century as a critical and valued partner with other information providers.

7.e. Expert systems: ES

Expert system is an important development in IT. It is an intelligent computer programme, which advise formers, which alternative to choose from a wide range of possible alternatives by processing data from a large number of variables according to certain decision rules.

Expert systems can be developed for crop prediction, estimates, diagnosing crop and livestock diseases, farm planning and monitoring, irrigation and feeding systems.

7.f. Information shops

Need to be set up at block / village level in a state. The envisaged information shop will be computer based. The design of the shop should be made keeping in view the information needs and appropriate services required. It would help the villagers to monitor their agricultural assets and environment to make crop production and production decisions.

7.g.Integrated information systems

Both traditional (like folk media, demonstration) and recent (computer aided extension, space applications) information technologies should be blended in a suitable manner to disseminate the innovations to the farming community.

To farmers, "harvesting is believing" and hence the economic impact of the new information spread in a village through these suggested ways will determine the sustainability and replicability of such an intensive knowledge and skill transfer

programme. For this, appropriate blend of information methods should be done based on preferences of the villagers themselves.

8.SELECTION OF CHANNELS AND COMBINATION OF CHANNELS

8.a. Channel: Definition

Channel of communication constitutes the medium through which information flows from a sender to one or more receivers.

Face to face, word of mouth is the simplest and yet one of the most widely used and effective means of communication. As the society is in transition from tradition to modern, the emphasis transforms form oral to media system of communication. The sender and receiver of messages must be connected together.

An account of larger number of audience and larger physical distance, it is essential to use different media of communication.

Even in interpersonal, face-to-face communication, it is necessary to use some aids for communication effectiveness. They are the transmission tones or physical bridges between the sender and the receiver.

8.b. Characteristics of channels

Certain characteristics of channels are identified and are delineated below:

(i) It specifies the direction of message flow

(ii) It gives the message accuracy low in interpersonal and high in mass media.

(iii) It selects the recipient depending upon the channel.

(iv) It overcomes the selectivity processes.

(v) It produces feedback to the sender of the message.

(vi) It is capable of bringing desirable effects on the part of the audience.

8.c. Selection of communication channels

It is obvious that there is no one channel that is effective or best for all situations.

A parallel combination of channels is necessary in order to have intended impact. Proper selection and use of channels would reach a given audience to achieve pre-determined objective. Some factors that govern the selection of channels are

(i) Availability of the channel to the sender of message

(ii) Suitability of the channel for audience and message

(iii) Competency of the communicator in using the channel

(iv) Frequency of use of the channel

(v) Ability to combine different channels.

(vi) Relative effectiveness of channels.

(vii) Efficacy of the extension education system.

Combination of channels for Effective Communication

A combination of mass media and interpersonal channels is perhaps the most effective way of reaching people with new ideas and persuading them to utilize these innovations.

The media forums are organized small groups of individuals who meet regularly to receive a mass media programme and to discuss its contents. The mass media linked to the forum may be radio, radiophonics**,** television, video etc.

Furthermore, by integrating mass media and interpersonal channels, the following may be effected.

(i) Interested in attendance and participation is encouraged by group pressure and social expectation.

(ii) Attitudinal change could be possible due to combination of channels.

(iii) Group decisions may be facilitated.

(iv) Novelty effect of channels and subsequent high credibility may lead to success of media forum.

(v) Feedback obtained from these media forum is comparatively quick and organized and relatively more objective and usable.

9. MID SEMESTER EXAM

10. EFFECTIVE FEEDBACK MECHANISM - A CRITIQUE

10.a. Feedback

If a communication source decodes the message that he encodes, if the message is put back to his system, we have feedback. In other words, action-reaction independence in communication is referred as feedback. The sender can use the reaction of the receiver as a check of his own effectiveness and a guide to his own future action.

When a source receives feedback that is rewarding, he continues to produce some kind of message. If he gets non-rewarding feedback

(a) he eventually will change.

(b) it concerns with to and fro communication. This return process is called feedback.

(c) It serves to control and correct the signals end go forward,

(d) it also serves to realign all the signals within the network in relation to one another,

(e) feedback is an error correcting mechanism that would overcome noise,

(f) we often overlook the strength and power of feedback.

We fail to realize the extent to which the receiver affects communicator.

In case of mass media, drastic changes are made as a result of the feedback obtained in the form of opinion polls, attitude surveys etc.

(g) Communication research bears testimony that learner's perceive better gain, more knowledge and retention longer when personal communication permits maximum feedback. (1) The source has an opportunity to change his message on the spot as a result of the feedback, he gets. It can be concluded that gain in knowledge is directly proportional to the amount of feedback.

10.b. (i) Understanding Vs knowledge

Communication must promote understanding than laying of facts alone to the receiver. It will remove all the barriers that intervene between the sender and receiver.

(ii) Acceptance Vs rejection

Mental acceptance precedes the physical action. If human mind doesn't believe, it will not accept leading to rejection of ideas.

(iii) Remembering Vs forgetting

When changes for an action are not readily available, it may be forgotten. So, transmission of right message, at right time to the appropriate audience is often on integral factor in effective communication.

(iv) Mental Vs physical action

Changes in the mind always precede change in action. So feedback is essential to remove the mental barrier.

(v) Right Vs wrong

The intent of communication is to promote desirable action by an audience. For a variety of reasons, people might fail to behave precisely, inspite of their understandability and acceptance.

11. FACTORS AFFECTING COMMUNICATION

11.a. Factors affecting channel

Noise: Sometimes messages do not get through the source and the receiver because of distracting and unwanted stimuli. This distraction is called noise. You have undoubted have had the experience of talking to someone else about something you considered important and being abruptly interrupted.

A simple example is when you and your friend are conversing about an important matter in an express way and they are drowned out by a noisy truck. Such interruptions cause frustration especially if they are repeated. Such interference is called as noise.

11.b. Causes for Noise

If there is any discrepancy exist between the message transmitted and the message received, it would cause noise when a speaker, chooses incorrect words to express an idea and causes misunderstanding in the receiver, the speaker creates this kind of noise.

11.c. Types of noise

(1) Physical noise

Physical noise is the technical interference. It may be caused by disturbance in the channel - a bad telephone connection for example-or by a speech disorder in the source or deafness in the receiver. Physical noise is obvious. Someone is using a power of mouth outside the classroom window as you are trying to give a speech or there is static on the car radio and so you can't hear your favourite station.

(b) Psychological noise

It occurs in the minds of the sender or receiver and distracts him or her from the message. It you go to a class right after you have had a quarrel with your room-mate, you will probably be so distracted by thoughts of the previous communication that you will not receive much of the communication in the class. Psychological noise could also be caused by distortion in feedback. Whenever the distortion occurs in the mind of the communicator or receiver, the interference can be labeled psychological.

(c) Reduction of noise

The best way to reduce the influence of noise is to eliminate the cause- you can slow down so as not to miss the exit while trailer truck passes.

Research studies have shown the importance of effective communication in promoting technological change in farming.

For imparting Knowledge and skills into the minds and actions of the farmers without delay and with least distortion, an agricultural communication strategy needs be planned.

11.d. Communication behaviour

(i) Communication skills: Ability to read, write, speak, see, hear, understand, reason out, draw or plan etc.

(ii) Attitudes: Towards self, message, channel, audience, environment etc.

(iii) Knowledge level: About self, message, channel, audience, environment etc.

(iv) Position within a social-cultural system. Social relationship and status vis-à-vis receivers.

11.e. Role perception and Role performance

11.f. Relationship with Audience

(i) Empathy

(ii) Credibility

(iii) Homophily

(iv) Extension contacts

(v) Language Compatibility

(vi) Use of opinion leaders

11.g. Programme content

(i) Nature and characteristics of the programme.

(ii) Programme's compatibility with clientele's needs.

11.h. Other factors associated with communication fidelity in

(i) Language compatibility of communicator with that of receiver

(ii) Communicator's degree of contact with receiver

(iii) Profitability of message

(iv) Frequency of use of channel

(v) Socio-economic status of receiver

(vi) Receiver's past experience

11.i. On the basis of communication research, conducted in India, the following suggestions are made.

1. Efforts should be made to create correct perceptions of their role amongst the extension workers, their supervisors and the farmers they serve.
2. Extension workers should plan an increased role at the evaluation stage, so as to make better decisions.
3. Key communicators in the villages are to be identified, trained and used effectively in their communication programme.
4. Demonstrations should be conducted in non-progressive villages.
5. The spread of cello phones should be encouraged in villages.
6. Farmer to farmer extension may be encouraged.
7. Media forums, for listening to farm radio programmes on the radio and viewing farm programmes on television may be encouraged.
8. The social linkage concept should be fully exploited.

11.j. (i) Physical interdependence

The functions of the source and receiver are physically interdependent, although the functions are performed at different points of time and space. For making, communication effective and to occur, a sort of physical interdependence is necessary between the communicator and communicatee.

(ii) Action- Reaction interdependence or feedback

Generally referred as feedback. This is a return process and says how the messages are being interpreted and comprehended. An experienced communicator is highly attentive to feedback and constantly modifies his speech or content in the light of what he observe or hears from his audience.

Even when an individual communicates with himself, the message he encodes is feedback. The action-reaction interdependence acts as a check of the communicator's

effectiveness and as guide to his own future reactions. Findings of communication research prove that free feedback is an aid to accuracy in interpersonal communication. The presence or absence of feedback affects the sender-receiver relationship. Lack of feedback is accompanied by low confidence and hostility free feedback is accompanied by high confidence and amiable atmosphere.

(iii) Empathy

Another form of interdependence between the source and the sender is that of expectations or empathy. Empathy refers to the ability to project ourselves into other people's personalities and to understand other person's internal frame of mind and reference.

All human communications involve prediction about how each other (source predicts the reaction of the receiver) will respond to a message. Sources take into account his receiver when he produces a message. He anticipates possible response of his receiver and tries to predict it ahead of time.

So, when we develop expectation, when we make predictions, we are assuming that we have skill in what we have referred to as empathy.

Empathic accuracy

(i) When we are insensitive to the behaviour of others, empathic accuracy is less.

(ii) Empathic accuracy also decreases when we are not motivated in a communication encounter.

So, a knowledge of the composition and working of a social system is useful in making predictions about how members of that systems will behave in a given communication situation.

(iii) Interaction: The term interaction refers to mutual and reciprocal influencing of each other's behaviour. The term interaction names the process of reciprocal role taking the mutual performance of empathic behaviour.

(iv) Homophily-Heterophily: Homophily is the degree to which pairs of individuals who interact are similar in certain attributes, such as beliefs, values, education, social status and so forth. Heterophily is the degree to which pairs of individuals who interact differ in certain attributes such as beliefs, values etc. For effective human communication certain amount of heterophily is required.

12. COMMUNICATOR-RECEIVER RELATIONSHIP FOR EFFECTIVE COMMUNICATION

In the communication encounter, the communicator and the receiver must have some conceptual relationship examining the relationship in terms of

(i) Physical interdependence

(ii) Action-reaction interdependence

(iii) Empathy

(iv) Interaction

(v) Heterophily-Homophily

13. MODERN GADGETS FOR COMMUNICATION

13.a. Information is an important resource in modern agriculture. The development of computers and improvement in telecommunication offer farmers many new opportunities to obtain technical and economic information quickly and use effectively for their decision-making.

Previously the mass media gave generalized advise to farmers, but with modern information technology extension can provide for each farm and farmer without visiting the farm personally.

13.b. View data

This transmits the information from a central computer by telephone line to the screen of a home television set or a computer. The amount of information the system can store is limited only by the capacity of its computer. The farmer interacts with the central computer containing the database. He can request the computer to make certain calculation by combining information from the database with information from his own farm.

For e.g. He can calculate results he can expect from using different production techniques, or the income he can expect from selling livestock of a certain height at a particular market.

13.c. Teletext

It is system somewhat like view data in which printed information is broadcast through television rather than transmitted through a telephone line. It has no interactive capacity and it has a very much smaller database.

13.d. Microcomputer

Through a microcomputer on the farm the farmer can process accounts and data from his farm production. Many extension agents in industrialized countries now have microcomputers and can similar calculations for farmers.

13.e. Network system

Network systems in which view data is connected with the microcomputer of the farmer or extension agent. This makes it possible to use data or computer programmes from view data in the microcomputer or to process data from the farm in the view data main frame. Computer, which can accommodate more complicated models than a microcomputer. These network systems become important in relation between farmers and their suppliers and customers.

Following are some of the examples.

Example A:

Dairy farmers have to decide how much and what kind of concentrates to give as supplement to the roughages their cows receive. Their decision depends on the amount of milk each cow gives, the quality and quantity of the roughages, the age, stage of pregnancy of the cow etc. Each cow is connected with a computer through a small radio transmitter. This identifies the cow as it approaches the machine, which dispenses the concentrates. The computer then calculates the appropriate ration and signals the machine, which dispenses the measured account of feed to the cow in her stall. This system ensures the fewer concentrates are consumed because each cow receives only as much as she needs in a series of small amount, which she uses efficiently to produce more milk.

Example B:

A farmer has to decide which wheat variety to grow and when to sow it, without knowing the rainfall pattern of his district as well as the agronomic characteristics of the wheat plant. In minutes, he can stimulate twenty different years using the computer model to predict the yield each year. This means the farmer can learn quickly from the accumulated experience, without the danger of losing money if he makes the wrong decision. Some simulation models incorporate farmer's observations of weather conditions and the extent to which their crop is infested with various insects and diseases and make recommendations for the use of pesticides based on these data.

When farmers use this information technology, the role of extension agents changes

1. How to select a computer and computer system?
2. Which data he has to collect and record on his farm to use with the computer programme?
3. How to collect this data, for e.g., how to recognize the infection rate of different wheat diseases?
4. To collect the information, he need for his decision-making and
5. How to interpret correctly the information he receives?

17.F. E-Mail

E-Mail is the short form for electronic mail, which is based on the use of computers for the transmission of messages rather than through the postal system. The E-Mail system connects a network of personal computer (PC) spread over the globe. A PC is set up as a message server in the system. The users at other PCs can link up with the server at any time to receive and transmit messages.

Each user to the E-Mail system is allotted a lock number or address in the E-Mail directory. To send a message, a user has to " key-in " the message in his PC along with the directory numbers allotted to him and the receiver of the message, The sender can indicate if the message is confidential or universal and also set a time limit for its retention. The receiver on receiving the message at his computer terminal can get it printed on paper.

The main advantages of E-Mail are that it cuts down the delay involved in postal transmission of messages. More over messages can be sent at any time of day or night, which are stored and can be retrieved by the recipient at his or her convenience. Besides once the contact between the transmitter and receiver PCs is established E-Mail requires only a few minutes time to transmit even a bulky message.

17.G. Fax (or) Facsimile

It is a device used for transmissions of a written document, photograph, map or any other graphic, material electronically. It is one of the variants of E-Mail. For transmission the original documents placed in the facsimile or fax machine, which scans the document and converts the written or graphic information into electronic signals and establishes a link up with a similar receiving fax reconverts the electronic signals into written or graphic form. As the sending machine scans the documents the receiving machine reproduces the scanned image, which is an exact duplicate of the originals.

A typical fax machine can transmit a document of A4 size in less than a minute over thousands of kilometers. Since fax operates through the normal telephone lines the fax number is usually a telephone number. Also the same STD and ISD codes are used for sending a fax to another city or another country. The document is scanned page by page in the fax machine. Like the E-mail, fax communication eliminates the postal delay and is very convenient for communication between persons located in different time zones, but it costs than the E-mail.

17.H. The internet

The Internet is a network of networks, the international linking of tens of thousands of business, universities, and research organizations with millions of individual users. The Internet is a global electronic community of over 50,000 interconnected computer network. Which means more than 50 million people are linked together, computing on what has been aptly termed as the "information super highway". Internet has added a new dimension to our existence by placing within easy reach a mind-boggling range of information. It gives each of us the option to be a publisher of our information and views.

The Internet offers a wealth of business opportunities. More and more business is advertising their services to customers on the Internet. The Internet is a source of up-to-date information and assistance too, related to business, stock market, education, research, medical advances etc. Many organizations also set up an "Internet". This is a network used on the Internet to communicate and share information across the organization.

17.I. Optical Communication Technology

Use of light waves for communication purposes gave rise to the modern technology of optical communication. In this new method, optical fibers that are very thin, long (several tones of kilometers) stand of ultra purity glass are being used to link the transmitter and the receiver. Information in the form of a series of light pulses produced by small semiconductor lasers is passed through such fibers. At the receiving end these light pulses are converted back into original information using appropriate detectors and decoders. Human voice, T.V. Picture and Computer data can be transmitted

and received with great ease and convenience using optical fiber communication techniques.

17.J. Cellular Mobile

It is purely known as car telephone, and the service allows two-way communication between a mobile or fixed telephone and another mobile or fixed telephone. All standard facilities like STD, ISD, Fax etc., are available with mobile phones. The mobile phones need not be fixed to a car but if the set is portable, one can carry it wherever he moves.

17.K. Radio Paging

It is called as poor man's cellular phone, facilitating one way mobile communication to users. A person carrying a pager can be contacted while he or she is on the move, by his office or even others. If one gets a message on his pager that he was required and should call up the number, which flashes, on his pager. All one need to do is to go to the nearest public call office and establish contact with his office. Infact an extensive page-phone network, in conjunction with radio paging, is a good substitute for cellular network. Particularly useful for professionals on the move.

17.L. Very Small Aperture Terminal technology (VSAT) Service

This service provides satellite - based network for business communication using the cost effective VSAT technology. All it does is to link head office of company or a corporate house to its various locations like factories, service units and other officers particularly those located in remote areas, using satellite network. Such networks are called Closed User Group (CUG) network. Besides high-speed data transmission from one location to another people can even talk on the network.

17.M. Electronic Data Interchange (EDI)

It enables two organizations, usually a customer and supplier to exchange routine documents such as purchase orders and invoices using standard electronic forms and their own computers linked through a service provider. It is faster, cheaper and reliable means of exchanging export documents. It works on internationally accepted protocols and facilitates quicker exchange of documents.

17.N. Voice mail

If one wants to enjoy the benefits of telephone, without actually owning one, he should subscribe to voice mail. Get a voice mail address (Similar to a telephone number) add he can get all his calls on that number. In the evening or any given point of time he can access his mailbox, from any telephone to see (or listen) if there is any mail waiting for him. It is just like owning a post box in the post office.

17.O. Video Conferencing

Holding a conference with one's foreign partners or addressing a press conference in four different cities without traveling long distances has become a reality with the advent of video conferencing. All one has to do is to go to the studio of the service provider at the appointed hour and hold a video conference, viz., satellite links, within India or abroad. Such a system is going to cut travel costs and time for executives of top

companies. Let us give some examples of the ways in which information technology is used to improve farmer's decision-making.

14. CONSTRAINTS FOR EFFECTIVE COMMUNICATION

Communication quite often fails to convey the meaning or develop an understanding of the communication sufficient enough to bring about a change in the behaviour of the recipient. There is only a fifty-fifty chance of the communication not being understood to the degree to be satisfied with. This has been proved by a number of experiments and observations made by communication specialists.

It is not only important that a communication be sent, it is much more important that it be understood. When and understanding of the communication does not take place, we can hardly expect a desired change in the beheaviour of the receiver.

The failure in communication arises because of certain blockages or barriers between and the receiver. The barriers that interfere with the understandings of the communication are of three kinds: Semantic, Psychological and Organisational.

Semantic Barriers

(a) Most of the difficulties in communication arise because the some word or system means different things to different individuals.

(b) Semantic difficulty may arise because of unfamiliarity with words, for example, a word of some foreign language of which the receiver has no knowledge. A technical word may also create such a problem-it may be beyond the ability of the receiver to understand it.

(c) In order to make it effective, a communication must be put into words, which are appropriate to the environment and mental framework of the receiver.

(d) Semantic barrier may further be created by body language being inconsistent with the verbal communication.

Psychological Barriers

They are the prime barriers in inter-Personal communication. The meaning that is ascribed to message depends upon the emotional on psychological status of both the parties concerned. It may be set up either by the receiver or the senders of the message.

The effectiveness of any communication depends upon the perception of the right meaning of the message on the part of the receiver. The perception of meaning is very much affected by the mental frame of the receivers at the time the message is received. Emotions, which dominate our mood at the time, e.g. anger, anxiety, fear, happiness etc., will affect our interpretation of the message.

To the receiver's mind a communication gets tied up with the personality of the source, which is called the 'halo effect'. If you receive a message from a person we admire, we are more likely to agree with it and accordingly. On the other hand, our immediate reaction will be one of disagreement with a message that has been received

from a person who do not like or trust. Thus our perception of meaning of the communication is coloured by our own value judgements about the source of the communication.

Another problem is 'cognitive dissonance'. Since an individual tends to be fed with too much of information from different sources, he becomes selective in receiving and responding to the communications. He is most likely to 'hear' only those messages that conform to his own beliefs, attitudes and judgements.

One common phenomenon with all communications is the effect of filtering. This effect is produced when the communication passes through a large number of persons. Each individual through whom the information is passed interprets facts differently.

Organisational barriers

Organisations provide a formal framework through which communication is designed to flow. The structuring of the flow itself tends to act as a barrier against free flow of communication between persons and levels in the organization. Rules may prescribe how communications are to move from one level to another in upward or downward directions. Not only there is a possibility of delay in the communication reaching its destination, but also there is possibility of filtering.

It has been observed that the upward communication is particularly subject to the influence of filtering in large organizations upward communication enables the superior to appraise the performance of his subordinates. It creates behavioural implications. It is human nature to show one's performance in a better light than what it actually is. The tendency of an individual naturally brings about a filtering through conscious or unconscious altering, withholding or interpreting facts to be transmitted upward.

Another barrier is created by the superior-subordinate relationship itself, which develops a distance between the two. People are more comfortable in communicating with persons of similar status as their own. Communication with persons of higher status tends to be formal. The distance between the superior and subordinate and the difficulty in peer communication between them tends to be heightened through status symbols, which might be used to show the hierarchical status of the person concerned. It may be in the form of separate parking space, separate bathrooms, separate refreshment rooms, cabins with stylised furniture, carpets etc. Such symbols accentuate the distance between the different hierarchical levels and tend to widen the communication gap.

15. APPROACHES FOR EFFECTIVE COMMUNCATION

Developing communication skills on the part of administrators, manager, and infact, all incumbents is prelude to good relationship and performance: one cannot do much in want of this in one's career. Some of the basic truths of communication between or among individuals within an organization or without are worth nothing.

1. People attack meaning as per their taste and liking not as per necessarily the communicated messages. E.g. Unless one is rational and fair, he would not relish even differ truths, if they don't suit him.

2. For effective communication, common frame of reference between the communicator and the receiver is a sine qua non. E.g. In order to communicate with students, the teachers must bring themselves down to the level of knowledge, understanding and comprehension of the students. In order to do a better job of communication with the farmer, one has to be at the grass root level.
3. A better communicator is one who has respect for the facts. E.g. A good/successful communicator must have ideas and facts to extend or talk to, otherwise it will be a communication without content; it will be an empty talk - a waste of time.

On the contrary, there are people who have the facts, but they can't part with them. Both are indeed, miserable. A blending of the two is essential for better utilization of innovations and ideas for the good of the people and the society at large.

4. A well-established communication network is not a guarantee for effective communication.

Organizations generally get satisfied with the structural arrangements for giving or receiving information. But such communication network is nothing better than a building blue print.

So, merely frequent conferences, meetings or so many circulars and reports cannot help the people, their knowledge, attitude and willingness alone can make the communicator fail or succeed.

16. A MODEL FOR EFFECTIVE COMMUNICATION

In Berlo's model of communication, the elements involved are, source, message, channel, receiver and response. The source is very much concerned about communication skills, attitude, knowledge, social system and culture. The content of the message should be appropriate. It should be subjected to proper treatment. Then coding of the message is done. The coded message is passed through the channel to the receiver.

Source	Message	Channel	Receiver	Response
Communication skills	Content	Seeing	Communication skills	
Attitude	Treatment	Hearing	Attitude	
Knowledge	Code	Touching	Knowledge	
Social system		Smelling	Social system	
Culture		Tasting	Culture	

In Leagans model also, all the elements like communicator, message or content, channels, treatment, the audience and the audience response as similar to that of Berlo's model are there.

Hovland (1964) designed a persuasion model of communication, which is receiver- listener-oriented. In this model, both the communicator and the message are

seen as observable communication stimuli. It highlights variables needed to predict effects in human communication.

Hovland was primarily interested in predicting attitudinal change, although this included opinion, perception, effect and action change. He observed that individuals might differ in predispositional factors such as prior opinion, attitudes, values and beliefs etc., resulting from past experience. These factors influence the reception and the role as to how the stimuli will be given attention, comprehension and acceptence. Theses internal mediating process will in turn, lead to the observable communication effects.

In Willburt Schramm (1965) model, the extra elements added are signal, interpreter in addition to the other elements like source, encoder, decoder and destination. Interpreter plays an important role in the process of communication. He makes the complex message into simple one, appropriate to the level of audience. The message should be treated in such a way that is easily understood by the audience. Then only the process of communication will be as successful one. This job is done by the interpreter, who treat the message and fine tune it in accordance with the nature and educational levels of the audience the treatment of the message will vary with the educational level of the audience.

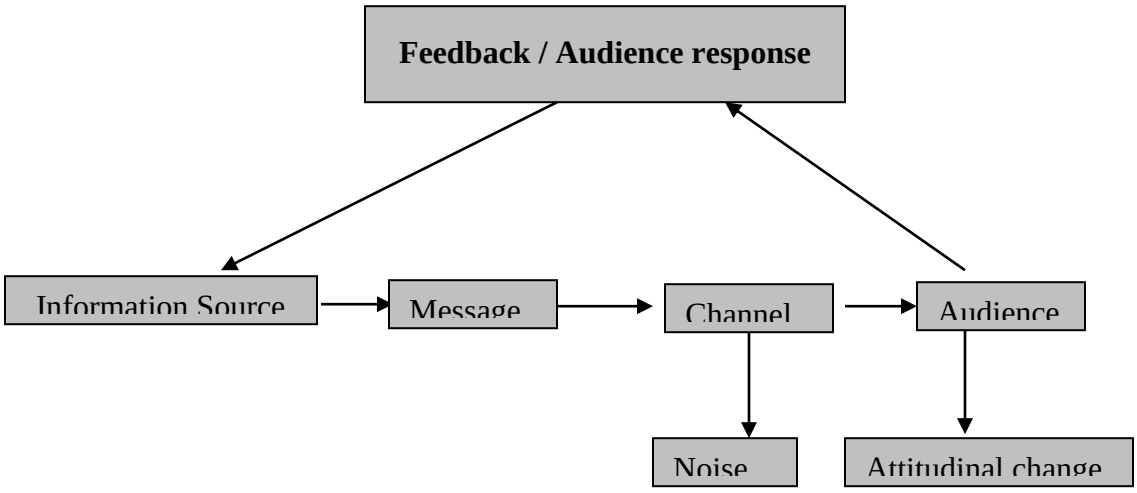
In Osgood-Schramm (1965) model, the noise is the one additional element added. The other elements of this model are, encoder, interpreter, decoder and message. When the message passes from the source to the receiver, it is frequently disturbed by other external factors. Such factors are called as noise. This noise should be reduced or eliminated from the channel and then only effective communication can take place.

In Shanon and Weaver(1949) model, the transmitter is the new element added in addition to the information source, message, sign, receiver and noise.

The major elements involved in the communication process are:

1. Information source
2. Message
3. Encoding
4. Channel
5. Noise
6. Decoding
7. Receiver/Audience
8. Audience response / Feed back
9. Attitudinal change

MODEL



17. DIFFUSION AND ADOPTION PROCESS AND MEANING

Definition

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system.

Meaning

It is a special and significant type of communication in that the messages are dealing only the novel ideas generated in the laboratory to be spread among a larger number of social systems. It is the newness of the idea in the message content of communication that adds diffusion its special trait and importance.

Difference between diffusion and communication

	Diffusion		Communication
1	It is special types of communication	1	It is process of exchange of ideas between two persons
2	It may cause more uncertainty	2	Uncertainty is less
3	Diffusion always focuses on social change	3	Communication just informs and does not focus a social change
4	It always concerns both the planned and spontaneous spread of new ideas	4	It doesn't concern so
5	It involves several channels cycles to get the information across	5	It involves only one channel or means to make the information across the

			audience
6	It takes long time to get the technology spread among the social system	6	It takes shortest time to reach a larger number of audience

Elements of Diffusion process, stages in farm practice and acceptance

Elements of Diffusion

1. Innovation
2. Channels
3. Overtime
4. Members of the social system

Innovation

It is an idea, which is new one supposed to be adopted by the intended clientele.

It may not always hold objectivity due to lapse of time since its discovery.

Channel

It is the means or transmission lines through which the innovation is communicated to reach its audience.

Overtime

It is the time period in which an innovation takes its own pace to spread. It may be faster or moderate or slower based on the innovation's importance.

Members of the social system

It is the degree to which an innovation reaches a significant group of individuals to accept and adopt the new idea being implemented.

While high cost farm equipments may be difficult to be trailed in small parts.

The element time while distinguishes diffusion from other types of communication.

Innovation: It is an idea, practice, or object perceived as new by an individual.

Characteristics of Innovation

Innovation should have the following characteristics, so as to be perceived new by an individual. They are

(i) **Relative advantage:** is the degree to which an innovation is perceived as better than the idea it supersedes. This may be measured in terms of economic outcome, but often social prestige factors, convenience and satisfaction.

(ii) **Compatibility** is the degree to which an innovation is perceived as being consistent with the existing values, past experience and needs of the receivers.

An idea that is not compatible with the prevalent values and norms of the social system will not be adopted as rapidly as an innovation that is compatible.

(iii) **Complexity** is the degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most members of the social system, others are not and will be adopted more slowly.

(iv) **Trialability** is the degree to which an innovation may be experimented on a limited basis.

(v) **Observability** is the degree to which the results of an innovation are visible to others.

2.Channels: Channel is the means by which the message gets from the source to the receiver. Channels are the physical bridges between the source and receiver. If the source wishes to inform the innovation to receiver, mass media channels are the most rapid and efficient, especially to the large audience. On the other hand source wish to bring favourable attitude towards the innovation an interpersonal channel is more effective.

3.Time: It is an important consideration in the process of diffusion. Time is the key to diffusion research. It involves three dimensions.

(i) By the innovation decision process an individual passes from first knowledge of the innovation through its adoption or rejection.

(ii) It depends on the innovativeness of the individual that is the relative earliness-lateness with which an individual adopts an innovation when compared with other members of his social system.

(iii) Rate of adoption in a social system, usually measured as the number of members of the system that adopt the innovation in a given time period.

4.Social system: A social system is defined as a collectivity of units, which are functionally differentiated and engaged in joint problem solving with respect to a common goal. The members of units of a social system may be individuals, informal groups, complex organizations, or sub systems. Extension worker should remember that diffusion going to occur within a social system. The social system constitutes a set of boundary within which innovations diffuse. In this section we shall deal with the following. How the social structure affects diffusion, the effects on traditional and modern norms on diffusion, roles of opinion leaders and change agents types of innovation-decisions. All these issues on social system considerably hinder the diffusion.

Adoption Process stages in Farm Practice and Acceptance

In any farm practice or innovation each individual passes out from 5 stages in short is called AIETA, i.e., Awareness, Interest, Evaluation, Trial and Adoption.

Awareness stage: The individual learns of existence of the new idea but lacks information about it.

Interest stage: The individual develops interest in the innovation and seeks additional information about it.

Evaluation stage: The individual makes mentioned application of the new idea to his present anticipated future situation and decides whether or not to try it.

Trial stage: The individual actually applies new idea on a small scale in order to determine its utility in his situation.

Adoption stage: The individual uses the new idea i.e., continuously on a full scale.

Adoption may be continued adoption, discontinuance i.e., Replacement or Disenchantment discontinuance.

Replacement: It is a decision to cease using an idea in order to adopt a better idea, which supersedes it.

Disenchantment: It is a decision to cease using an idea as a result of dissatisfaction with it performance.

Acceptance: It is the favourable reception and approval by the individual /group in the social system. In other words, it is an act of accepting innovations or new idea, objects or being accepted. Acceptance is the ultimate successful end point of the innovation.

Difference between Adoption and Diffusion:

Diffusion

1. Diffusion is the process of communicating the new idea into the members of social system.
2. Diffusion occurs among the units in a social system.
3. Diffusion is the initiating factor for a change.
4. Diffusion is carried out by extension worker, opinion leader, change agents.
5. Innovation, channels, time and social systems are the elements in the diffusion process.

Adoption

1. Adoption is a decision to make full use of a new idea as the best course of action available.
2. Adoption takes place within the mind of an individual.
3. Adoption is the end point indicator for a change.
4. Adoption is carried out only by the members of pre-social system.
5. Awareness, interest, evaluation, trial, and adoption are the elements in adoption process.