

# **Twinning between informal and formal information Systems**

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## **Abstract**

The importance of the informal information system is reflected in the fact that the informal information system is the "twin system" of the formal information system in the management of organizational activities, whether it is in providing support for formal channels of communication or in helping the administration to deal with different situations. Any administrative activity must be accompanied by informal information using. However, the informal information system has not received sufficient attention in organizational thought compared to the attention given to the formal information system at the level of research or even management practices. The aim of this study is to demonstrate the importance of the informal information system as the "twin system" for the formal information system in the organization. To achieve this, a comparison was made between the two systems through several axes: concept, elements, importance, networks of data and information flow, characteristics and effectiveness.

**JEL classification numbers:** D8 , M1

**Keywords:** informal information system, formal information system, twin system, comparison, networks of data and information flow.

## **1 Introduction**

Researchers agree that the success of managers in the decision-making depends significantly on the possession of information systems that provide the necessary information. On the other hand, the researchers argue that the information systems in the organization are classified into two types :

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-Formal information systems that provide managers with formal information, the information that flows through formal communication channels in the organizational structure of the organization .

-Informal information systems that provide managers with informal information, the information that flows through informal channels in the organizational structure of the organization

In other words, cannot be successful in the case of managers rely on one of two types of information systems, based upon the management of organizations must not only seek to acquire the two types of information systems, but also the integration of these two systems a way that enhances the levels of success of the decision-making process.

In light of this introduction, this study is trying to clarify the concept of informal information systems and statement the importance of these systems and the differences between them and the formal information systems in terms of the flow of information networks, as well as the characteristics of the information that provide to managers.

## 2 Research problem

Informal information system plays a significant role in the management of organizational activities, regardless of whether they support the formal channels of communication or in securing the management's ability to deal with different situations. Despite this importance, the informal information system has not been given sufficient attention as it is for the great attention given to the formal information systems, either in literature, or even on the level of management practices.

The researchers and organizations managers have moved away ignored its significance. researches and studies that have addressed this subject is characterized by sparse, with some fragmentary references here and there sometimes, implied or marginal references at other times with giving priority to the surface by the look without going into detail or deeper into his roots, and here lies the danger in this topic because the weakness of interest in the informal information system makes it vulnerable to a lot of the negatives that have contributed to the reduction of its effectiveness and also a source of stirring many organizational difficulties, if not mostly.

We can express the problem of the study through the weakness of interest to informal information systems. So, we found that the most important of our priorities as specialists in information systems management attention to this

important topic, as the same amount of attention to formal information system, according to the fact that these two systems represent two sides of the same coin .

From the above the research problem can be illustrated through the following questions :

- Is informal information system gaining great importance in the organization ?
- Is the flow networks of informal information differ from the flow networks of formal information
- Do the informal information characteristics differ from formal information characteristics?

### **3 Research Objectives**

This study aims to achieve the following :

1. Clarify the concept of informal information systems .
2. Identify the importance of informal information systems
3. Illustrate the types of informal information flows networks, .
4. Statement of the most important characteristics of informal information.

### **4 The concept of the informal information system**

Almost all acknowledge that little agreement exists regarding what informal information system means or how properly to assess it, unfortunately, this plethora of writing and research has failed to produce a meaningful definition of informal information system. So Researchers differ greatly in determining the concept of the informal information system and their view of this system, adopting multiple trends in defining the concept. The coming review the most important of these trends:

-The first trend focuses on the concept of the “ rumors” in the definition of informal information system by emphasizing that these “ rumors “ are one of the types of information bearing by the informal communications network and have a later effect. (Tortorriello et al., 1978:59). While (Bader, 1982:154) sees the rumors as “an anonymous source social pressure characterized by uncertainty and ambiguity and receive the attention of broad sectors or many individuals within the organization. The “Rumors “raises in order to create excitement.”

Both (Haz and Thomas, 1984:290) looks at informal information systems as the talk that is not based on specific knowledge but is just gossip or anything heard from someone else. While (Durbin, 1990:334) confirming informal information systems as the real or false messages that do not depend on the formal word and flows through informal communication channels. From our perspective, the definition of informal information systems, as rumors derives its content through consideration rumors kind of information transferred over the informal communication network, so we found that under normal conditions of the organization, the a good proportion of them be correct.

-The second trend of researchers adopted the concept of the secret source of information when they define informal information system. As (Davis & Newstrom,1985:335) indicate that the idea of informal information systems appeared in the civil war in the United States when a telegraph lines was attached to trees in a similar manner in the irregular wrap grapevine leaves on the walls and barriers which resulted in distortion of information flowing through these lines. This system shall be established within the informal of organization regulations and designed to transfer highly confidential private information because of its unusual ability to penetrate the strongest defenses of the secrets of the organization through the bypass organizational lines and direct dealing with individuals who possess these secrets. (HodGetts & Altman, 1979:326) seen informal information system as an expression of a network of social relations that automatically appear between individuals and bind to one another and are used to support the formal communication channels.

While (Schwartz, 1980:326) describes informal information system as a network used by informal groups and more shapes importance in the secret source of information is information that is not transmitted through the follow-up documentary, and it depends on the gossip. So, we find that the definition of the informal information system informal secret information source indicates the degree of automatic processes as well as the absence of documentation to the extent that it embodies the Property of informality in these systems.

-The third trend of researchers goes to focus on cronyism in defining the informal information system, as defined by (Hawari, 1980:325) “is the framework made by informal groups within the formal organization in order to achieve personal interests of its members in the face of other informal groups’ competition to them”.

-The last trend focuses on the “Social Information System” in the definition of informal system information, as (Gerloff, 1985:203) pointed out that the basic idea behind the “Social Information System” is the fact that individuals are living and adapted organisms, they adapt their attitudes, their behavior, their beliefs with their social surroundings, Taking into account their behavior and their condition in the past and present.(Blomfield, 1977:144 ) adds by Confirmation that this system

is created through social interactions and expresses the natural incentive for individuals to share information, this system is a natural and unusual activity as it is a human privilege. So that once a group of individuals founded, this system appears.

Accordingly, we find that the “Social Information System “reflects the concept of informal information system being arises through social interactions, and embodies the employees social behavior, as well as, this system characterized with many of the features that characterize the informal information system.

In light of the previous discussion of the four trends and what was referred to by the researchers in this aspect, we can say that these trends share a set of points representing agreement bridges , these points are as follows:

- Informal information system is product of social interaction.
- Informal information system is Consists outside of formal frameworks specified by the regulations and restrictions.
- Informal information system is Index of social pressure, and a safety valve for the expression of psychological feelings facing workers in the organization.

From here we see the possibility of reaching to a procedural concept for informal information system according to the following context: non structure formations that arises as a result of social interactions between members of the organization, which contribute to securing the automatic flow of data and information in an informal way form internal and external environment of the organization without being restricted with a time limit and certain amount, and provides service to all organization episodes that passed between being a living embodiment of the reactions of the member towards organization events.

## 5 The importance of the informal information system

Organization theory and management information systems researchers agree to count the informal information system the twin system of formal information in any organization. (Kozar, 1989:12-13) stressed the need not to assume that the formal information system is the only source of information that organization need, but must take into account access to data and information from other sources. This means the need to avoid total dependence on formal channels to get information and confirmation on the sources of confidential information being extra channel contributes to bridging the information gap between those systems (Gary & Strake, 1988:488). Which means that the fully information system composed of two systems, formal and informal information systems (Davis & Olson, 1985:50).

As well as (Durbin, 1990: 334-335) believes that informal Information System is the measure which reveals the concerns of individuals and provide treatments that provide them with stability through the disclosure of emotions that wander in their minds. At the presentation of the function of feedback provided by the system, the information is not formal until it reached case managers of many to use this system to find out what is going on in the corridors of their organizations and diagnose problems that are likely to be confronted with the aim of pointing the sources of conflict and frustration.

In addition, they acts as a single source to contact with senior management expressing what individuals wants and what they feel about the various positions in the organization, which extends senior management with information about these individuals and their experiences and promotes the visions that they hold towards them and thus recognizes the active role of the informal information system for organizations success (Tripathi, 1980:50). Consistent with this (Al-Shmmae, 1991:286) refers to be an important part of the information about the tasks of individuals and the administration's policies are transferred informally as that indicates the role of the informal information system to supply manager with information about subordinates and their experiences and the possibility of treatment with the immediate problems.

(Hicks & Gullett, 1975: 322) confirms that the informal information system is be useful in the quick resolution of the problems in the organization, communications, horizontal, which takes place in the framework of this system contribute to the decision-making by individuals at the organizational level itself. This is an affirmation the contribution of the informal information system in providing collective solutions to many problems, as it is practiced individuals most influential in the social milieu role in the presentation of the solutions that are often received acceptance from the presence of others(Weisband & Schneider, 1994:1124-1125)

(Saunders, 1981:42) confirms that, despite the ability of informal information systems to provide required information, it is rarely used in reality after design. Many studies proved that the use of formal information systems depends largely on the psychological reactions to the beneficiaries, hence the interaction of individuals in different departments each interconnected while carrying out their official functions through formal information systems that would generate some sort of familiarity over time, which encourages them to exchange informal information.

By contrast, in several cases, informal information system holds Information does not the formal system want to holds and let this information deliberately outside its framework. Or the management may deliberately disseminate confidential information through informal information flow networks in order to fostering the

efficiency of organization policies and procedures through the dissemination of information in different parts of the organization.

(Berkley, 1975: 288) emphasizes the role of informal information system in reducing the level of boredom on the job and in helping individuals to bear the monotony and boredom in some jobs, and then handle many of the psychological aspects of individuals that can be a source of problems in the organization.

The importance of informal information system was not limited to what has been mentioned, but beyond that to remove the discrepancy between the various organizational units and then control the balance of power, so if the informal information available in an unbalanced way between organizational units they lead to imbalance and thus creates a conflict between them because of the lack of confidence and weak participation in this information. An informal information system plays a key role in enhancing trust and support information participation and then creates a balance of power (London, 1975:537-543).

Moreover, informal information system contributes significantly to determine the degree of power of the individual within the organization through the information they possessed and then controls their transfer. This gives him the ability to have perceived power to control over other individuals, and that this ability include other indicators such as access to information, delay information, suppress information, distortion information, reduce uncertainty (Mechanic, 1962:353). From here, informal information system is the engine morale for workers and Strengthening their social power through its active role in the statement of the social aspects of the organization (Durbin, 1985: 335). In the same trend (Gray, 1988:395) confirms that these information itself is powerful, and that the individuals who owned and regardless of the validity they are treated people with power and influence.

The consensus among researchers on the importance and role of informal information is ambiguous and cautious because of the potential negative effects of improper handling of this system (malicious rumors). Hence, the responsible authorities must adopt an appropriate approach to the adoption of this system, and thus ensure proper exchange between the two systems (formal information & informal information).

The exchange means the extent to which each system contributes to the overall management information system of the organization, in other words, how much is the contribution of the formal information system to the overall management information system and how much is left to the informal information system in line with the fact that the absence of atonement of either systems will contribute to creating the information gap that leads to organizational problems which are difficult to solve without realizing the actual participation of the absent information system or the atonement information system, both formal and

informal, which indicates the need for compatibility and coordination between them as part of efficient and effective exchange.

(Hicks & Gullett, 1975:526) pointed out that the informal information system can enhance the role of the system of formal information system or hinder it. So, it requires full awareness of this system while trying to make it work in the same direction as the formal information system, which means that the informal information system is no less important than the importance of the formal information system if not surpassed, according to the views of many researchers,

(Holland) concluded that the informal information system is a valuable source of information in three distinct aspects: broad communication, diffusion of innovations, and the psychology of attitudes changing (Gerloff, 1985:290) . (Davis & Olson, 1985:52) emphasized that many important decisions are based on available information through the informal information system, which cannot be counted formal, especially at the level of senior management.

‘ Mebeath “emphasizes that the use of the informal information system compensates for the lack of information provided by the formal information system and provides an alternative model for the flow of information that may not be available through the latter system(Gordon, 1974: 216).Which indicates the difficulty of feeding formal communication channels with all kinds of information because this leads to the doubling of efforts and the depletion of time, so the informal information system enriches and expands the content of the formal information system by reducing the time spent in providing appropriate information, thereby enhancing administrative efficiency(John, 1988: 28-32) .

This confirms the findings of the survey conducted by “Powell & Goodin ” for ten studies on the use of Informal Information System by managers, which show that managers in many organizations and at all organizational levels consume the major part of their time in oral communication (50% - 89%), as well that the tasks they practice do not allow them to adopt the formal information system and for this reason, showing a degree of preference and the tendency towards informal information system(Gerloff, 1985:289) . Consistent with this, “Mintzberg” study found that nearly 80% of managers' time was spent on oral communication and a similar result was found in (Davis & Olson, 1985:52 ) study of information systems managers. (Gerloff, 1985:290-291) adds that many engineers and scientists rely on informal channels more than formal channels in the performance of their functions, although this conclusion cannot be applied to all types of organizations.

Some researchers believe that the reason for the adoption of the informal information system due to its ease of use. Research on the behavior of engineers in their choice of sources of information found that the rule adopted is the lowest effort and derives this rule by direct orientation to individuals who possess this



information(Special connector in Informal Information System) in order to achieve the economy in time and effort as well as benefit from their expertise(Gerloff, 1985:290-291 ). (Davis & Olson,1985 :53) suggests that the argument for defenders to expand the informal information system is to increase the productivity of managers and thus benefit their organizations, especially when reducing the time spent by them in oral communication. While skeptics see this claim that the information system affecting administrative productivity strengthens the existence of the informal information system.

In contrast, some researchers believe that the informal information system is a double-edged sword. While its passive use can affect the achievement of the organization's goals (malicious rumors that destroy the organization's goals), it can enhance the effectiveness of organizational communication if handled well (Tortorriello et al., 1978:26). In the same vein, some researchers consider the informal information system to be a serious threat to the organization as it carries gossip and misinformation (Nigro, & Nigro ,1958:234 ).Others exaggerate the concerns and uneasiness of managers when adopting this system (Alan,1988:30-42 ).

From our perspective, there are a several factors that contribute to determine the degree of inclination towards any of the two types of systems , these factors are: the nature of organizational problems faced by the administration, the type of the tasks assigned to the formal / non-formal of organization members, the proportion of informal organization's members at the decision-making centers, the level of the of informal organization members and culture, the degree of uncertainty, The degree of recognition of the decision-makers that there is informal regulations..

## 6 The elements of the informal information system

Defining the concept of the general model of the system contributes to the crystallization and diagnosis of the elements that make up any system.

Since the Informal Information System is one of these systems, it is necessary to define its constituents in such a way as to support the assumptions of the Open System theory regarding communication and interaction between the Organization and its environment as one of the essential requirements for continuity, so we find it necessary to discuss and reveal the distinctive elements of this system. The following are the highlights of these elements

### 6.1 Input

Inputs are data transmitted through informal internal channels relating to the activities of the organization, individuals and external sources (the environment surrounding the organization) to feed the system with data on emerging situations,

attitudes and events that may arise through consultations, private meetings or during breaks at rest periods. Gatekeepers, opinion leaders (Keshta, 1981:123-124), secretaries, employees, motorists have a prominent role in generating these data, which may be directly related to the nature of organizational life but are presented outside official channels as an embodiment of an existing situation or as an attempt to mitigate the effects or desire to disseminate such data, where experience and maneuverability play a major role in generating this data (Adley,1992: 59-78).

As these data are related to social interactions, they are characterized by repetition and diversity according to the diversity of social relations and the variety of configurations that are expressed in all its related functions, difficulties or circumstances that contribute to the revolutionizing and dissemination periodically and frequently of these data. This repetition in the data may lead to the loss of many of its original content and make it linked to the subjective nature of its traders.

## 6. 2 Processing

(Davis & Olson, 1985 : 51) Indicates in the gallery comparable for processing between the formal and informal information systems by saying that the informal information systems processes the data that are essential for the completion of the organization's activities without formal documentation for processing. The question is: what processes are handled within the informal information system and what is the nature of those processes?

In order to answer these questions we can say that the data processing takes a unique path that differs from the path adopted in the formal information system since these processes do not emanate from formal rules and procedures, but are based on spontaneous considerations related to the personal or shared interest of the informal organizational groups that collects data from their sources and perform the processing without being restricted to the documentation procedures. In this context (Tortoriello et al. 1978: 59), pointed out that the data processing within the framework of rumors occurs when the individual accepts them, which dictates a degree of tendency to distort future events in accordance with them.

(Kolasa, 1969: 439-440) goes on to say that processing in the informal information system takes three forms: the settlement through the brief and simplified description of the informal information, highlighting by focusing on the specific details in this information, justification for maximizing the opportunity for the individual carrier For informal information.

While (Davis, 1981: 334) focused on the filtering process through the individual receiving the data and then transfer it in his own sense and distortion, while maintaining the general framework without details, In other words, the filtering process is done in such a way as to reduce the story in a number of basic details

that can be remembered in an easy manner, each individual chooses the appropriate details for his perceptions and then transfers them to others. This means that the filtering process is carried out in line with the desired goal of the beneficiaries and according to the values adopted by the informal groups without any formal restrictions on the organization and its consequences.

In our view, other than the filtering process in the formal information system, which is based on the exclusion of unnecessary, erroneous, obsolete and contradictory vocabulary, and the retention of what is necessary and useful, filtering process in the Informal Information System is based on the addition of new details to the original case, As well as repetition, which facilitates the possibility of distortion expressing the feelings and emotions of informal groups members in the organization, and the extension of it is done with two main considerations: attention and ambiguity.

After the filtering process, the coding process of informal information is completed in a way that makes it easier for the traders to understand and assimilate them in a unique position, as well as to enhance their Impression (Showmanship) among their peers, as well as to secure many of their psychological needs as one of the sources of informal information that many members of the organization can access it or understand its meaning. It should be noted here that the coding process does not take an active role in all informal groups because of the nature of these groups, which are based on social interactions, ignoring many of the official bases and controls. Hence, even in the success of the coding process, it remains limited to individuals and groups only, because of the multiplicity of regulators that deal with this information, which may not have the foundations of sound coding, making it captive spontaneous.

### **6. 3 Outputs**

Is informal information that flow to users inside and outside the organization, this information is traded through oral communication and can be seen through verbal messages transmitted quickly over the transmission of written messages (Baron, & Greenberg, 1990:349) .These messages take several formats including: Gossip, rumors, and the correct news. This information is thus characterized by:

- Give rise to a set of behavioral dispositions as they contribute to the drawing frames administrative actions and scheduling of works by proposing the appropriate order for the problems that fall within the responsibility of the administration (Post, & Epstein, 1977: 86-87)
- Provide social support for the organization through various types of oral communication.

- Tend to skip some individuals and even present at the sites sensitive to regulatory decision-making and dating this rationale Skip to physical separation and ethnic differences as well as the shortfall in the chain of friendship.
- Leave their mark and the positive and negative effects for those who fall under their influence misguided.

#### 6.4 Feedback

The feedback is gaining great importance both for the organization's members as well as for the management of the organization. Relevance to members of the organization is achieved through the provision of informal information to these members in line with their goals. For the management of the organization, the importance achieved by employing this information and directed them towards achieving the organization's goals and to develop the appropriate mechanism that will make this information as soon as possible to the information that you want the administration, a way that does not raise the ire of members of the organization.

As shown above, the elements of the informal information system had some of the characteristics that hardly differ from the elements is present in the formal information system to the extent that it makes it difficult to complete familiarity with these elements.

## 7 Flow networks of informal information

The Informal Information System provides additional channels of communication for the Organization, working in conjunction with the official channels, despite the disparity between them in terms of the types of these networks as well as the flow trends, indicating the divergence of the contribution of the members of the Organization. Here are the most important types of these networks (Herbert, 1981: 328-331 )

### 7.1 Unilateral Cue Network

Is similar to a long series through which the first individual tells the second person, who tells the third person until the chain ends by failing or returning it due to the outdated or inappropriate information. This series is also called the one (single) node network. As shown in Figure 1.

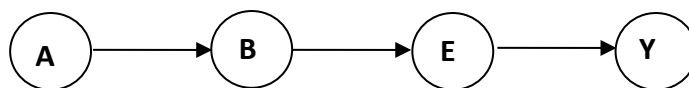


Figure 1: Unilateral cue network

### 7.2 Information Seeding (Chatter) network

Whereby the communication process occur among individuals without a specific choice of those who are to contact him, it is characterized by abundance of their information and access to users. Figure 2 illustrates this (Kumar, 1982; 63).

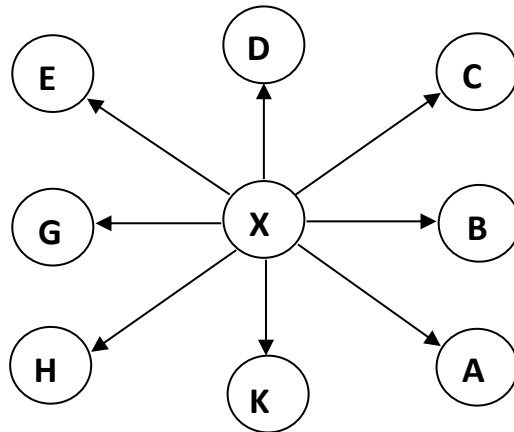


Figure 2: Information Seeding (Chatter) network

### 7.3 Cluster Network

Through this network the individual communicate with others in a selective manner based on the degree of trust between them; this selection is not limited to specific individuals (sender and receiver). Figure 3 shows that the sender has to choose three receivers where the two of them do not want to pass the information versus the third desire to be connected to the others.

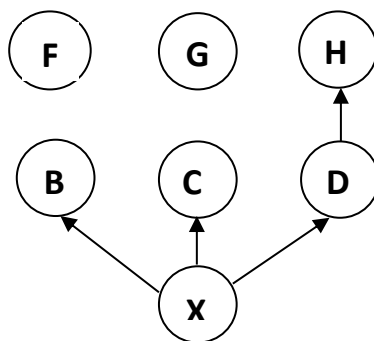


Figure 3: Cluster Network

#### 7.4 Private network

This type of network is limited between those with power and influence and high status in the organization as well as between kin and who have personal interests. Informal information that flows through this network is characterized by a kind of secrecy, where only acquaintance by the categories mentioned exclusively in the above, although this information is informal. Figure 4, illustrates this type of networks.

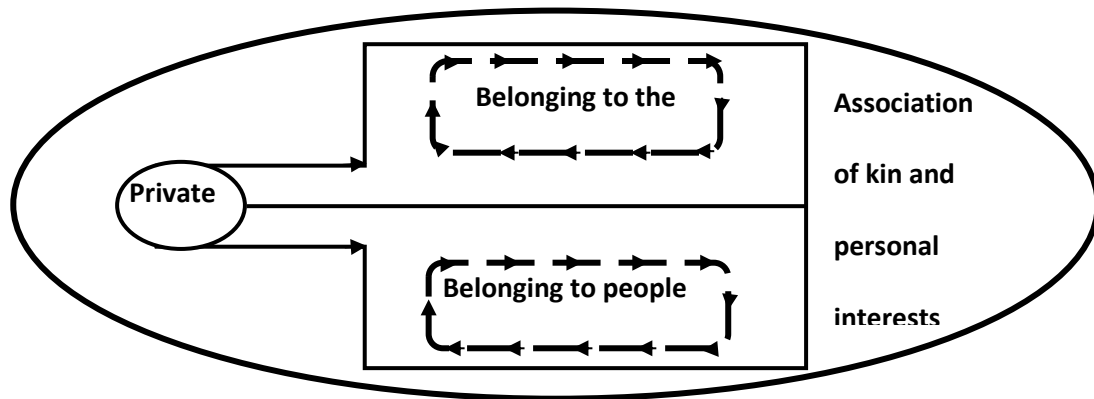


Figure 4: Private network

#### 7.5 Free Network

This type of network embodies the principle of free flow of informal information and ensure freedom of expression, so what is going on in this network does not exceed news that do not affect the goals of the organization as well as, this news is characterized by spontaneity. Figure 5, illustrates this type of network.

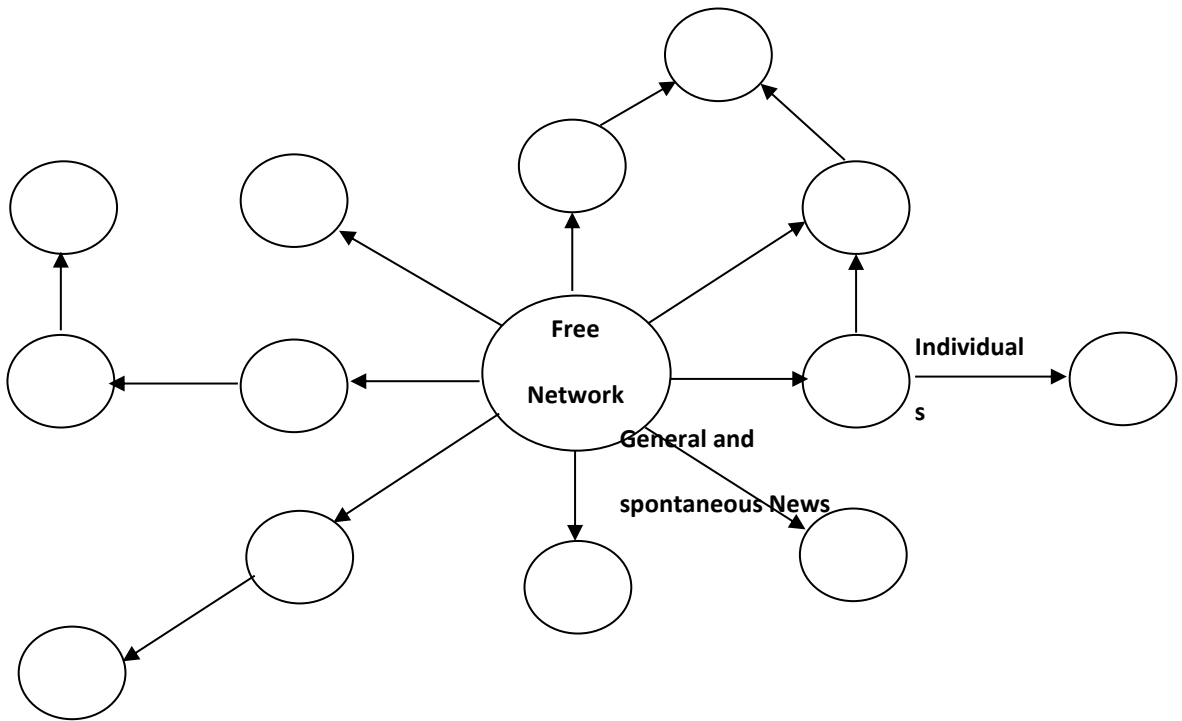


Figure 5: Free Network

### 7.6 Restricted Network

This network characterized as subject to supervisory restrictions, the flow of information which could adversely affect the organization's goals and then induce many organizations managers to assign some people to control and monitor these networks in the context of what is termed “rumors guards”. Figure 6 illustrates this type of network.

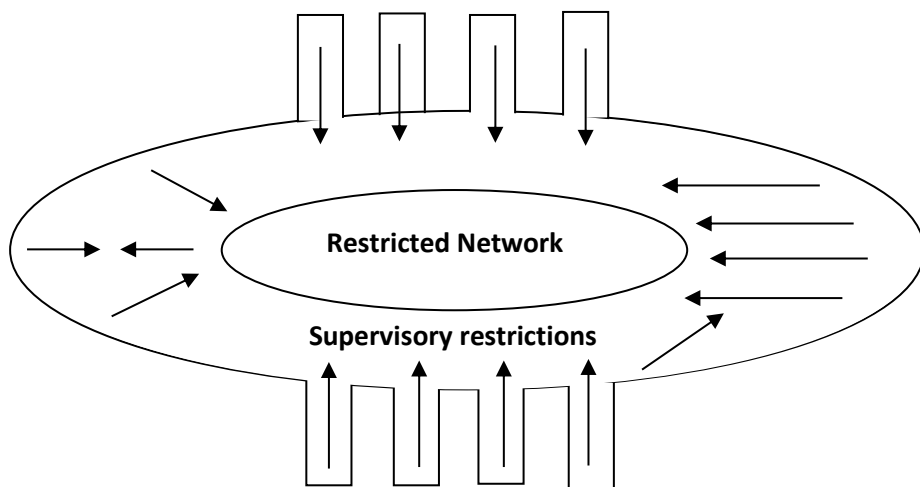


Figure 6: Restricted Network

## 8 Conclusion

We believe that the selection of any of these networks depends on a set of criteria are: the status of the group and its potential physical, cultural level of the members, the ambiguity of informal information and its importance, the degree of cohesion between the members and the personal interest, restrictions and official regulatory, organizational procedures and environmental conditions.

With regard to determining the direction of informal data flows, some researchers point to the difficulty of identifying the source and direction of informal information, which makes it impossible to diagnose the responsible individual or responsible party for false information or rumors. (Hicks & Gullett, 1975:492) believes that the direction of informal data flow is horizontal to the extent that these flows are described as "automatic horizontal communication".

While ( Tortoriello et al. , 1978: 59 ) Confirms two types of flow: horizontal and vertical, The inability of formal communication channels in most organizations leads to the use of the informal communication channels to coordinate their activities horizontally, in a way that contributes to the distribution of information to supervisors regarding the performance , attitudes and positions of individuals and their ideas.

In the same context (Feldman & Arnold, 1983: 361) confirms that the informal information flow is mostly downward, particularly at the birth of this information in the lower levels of the organization, then this information begins to spread towards the top. (Davis, 1981: 341) describes the informal information network as having unusual ability to breach organizational lines and direct dealing with individuals who possess this information. We agree with the latter view of the fact that informal information does not have a specific structure or private channels as well as they are characterized by spontaneous and pairing self-interest of both circulated, which It means that there are four major trends through which informal information is flowing (ascending, descending, horizontal and diagonal).

When determining the contribution of individuals to informal data and flow networks (Feldman & Arnold, 1983: 361 ) emphasized that each individual has a particular role in these networks, which affects the quantity and type of informal information that is received and leads to varying quantity in their flow networks, Individuals with higher levels of management receive more information via informal networks than others who occupy lower levels, particularly those who are geographically isolated. Even if they get the information, it will be too late.

In the same context (Suttor & Porter, 1968 :223) indicates that only (10%) of individuals receive informal information and they are passing it, Compared with one-third of those considered isolated, since they do not receive or pass the information. (Feldman & Arnold, 1983: 361 ) which is highlighting the need to



search for informal data flow networks within the social processes of informal groups. These processes consist of the integration and interaction of three systems, namely, communication, power and position, influenced by the prevailing power relationship, in other words, the two systems of power and position are the mainstay of the design of the communication system as a result of the different positions without being a cause. The type of communication is determined by social force, as an individual can impose his force on others (Gary & Starke, 1988 :443-444).

Hence (Davis & Newstrom, 1985: 318 ) finding the possibility to say that the informal information network is a product of the position and not the product of an individual, as the availability of the correct attitude motivates individuals to actively participate in these networks, Which are realized in a number of cases: The excitement , loss of security, friendships, updated information, the procedure that enables individuals to contact, the caller's personality, the work that allows conversation and the function that provides the information desired by others.

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