The Vital of Cyber Network in the Electronic Governance

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ABSTRACT

This study speaks or illustrates the importance of transition to electronic government. In order to upgrade to the best ways to accomplish many tasks for citizens and between other institutions and how to interact between them. Many developed countries implements the electronic government system and have benefited from the development in the field of information and communications technology. This study is also about communication types, especially fiber optical cable, which is currently the backbone of the process of linking between institutions. And the importance of converting all institutions to link fiber optic cable used in many areas such as technical construction, power plants, railways and other uses. In 2015, the Ministry of Planning carried out a survey of all Iraqi state institutions on the preparation of the state to switch to the E-Government in cooperation with the Ministry of Science and Technology. The survey included all the ministries of the state and non-affiliated bodies as well as the provincial councils, Where work was done in two phases:-

Phase 1: All the major formations of ministries and entities not connected to a ministry that have financial and administrative independence were covered. The results of the survey showed that the total number of the formations is 574.

Phase 2: The selection of the profiles that have better than the readiness of the shift towards the electronic ministry in accordance with the criterion of availability of electronic services and the number of 131 formations.

The objectives of this survey are to build a statistical database that includes the extent of the use of information and communication technology in the institutions, in addition to the changing of all citizens' services to electronic services, which privacy and security of citizen information. With the development of future plans to improve the performance and development of the use of electronic governance. Through the results obtained, ability of the state's institution to shift to electronic governance has been assessed as Poor in the application of E-Governance. The main criterion for measuring the evolution of E-Governance is the interaction between citizens and government institutions, and that services provided by institutions to the citizen are partial services.

Key Words: E-governance, Information Technology, survey, The electronic government, , The electronic Communication.

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1. INTRODUCTION

Information and communication contribute significantly to the achievement of the goals of a good governance and to benefit from the tremendous developments of communication in the contemporary, preparing an efficient infrastructure of information technology contributes. The provision of information technology and communication infrastructure and efficient use and transparent use contributes to the provision of electronic services, whether between state agencies or between state agencies and business companies (the private sector and civil society organizations).

The processing of transferring data between government institutions is very necessary to reach maturity in the concept of electronic governance. And to make all services for the service of the citizen electronic be special privacy and security of all

requirements and make them require no effort in time and money on the citizen. Under e government will make all citizen services running electronically with high security and save time, money and effect.

2. E-GOVERNANCE TERM

According to reference [1], imagine a situation in which all interaction with the government can be done through one counter 24 hours a day, 7 days a week, without waiting in lines at government offices. In the near future this is possible if governments are willing to decentralize responsibilities and processes and they start to use electronic means such as the Internet. Each citizen can then make contact with the government through a website where all forms, legislation, news and other information will be available 24/7. Of course, at first the front office will retain several communication channels, such as office counters, telephone, (e-) mail and Internet to serve everyone properly, but this will change dramatically in the next few years. In Europe and the USA, commercial banks already work according to this concept. Only in a few very special situations one has to go to an office counter. Most transactions can be done at either at ATM, by mail or by the Internet, which has saved banks an enormous amount of costs. In other words, they do more work, with less people, in less time and with less and smaller offices: They use the Internet. Government, as a collector and source of information, may also follow this trend, in order to serve its customers (citizens, business, and other interest groups) better and to save costs by making internal operations more efficient. The E-Government is one of the treatments to tackle the corruption, which requires the institution to seriously work and access to information and respond to the requests of citizens directly. Though institutions use old procedures (traditional methods) such as telephone and paperwork. The ultimate target is to transform these long and routine procedures in to the electronic forms so that all individuals can access easily and quickly any service in less time and cost and eventually government will gain more confident of their citizen.

The prime objective of E-Governance is to support and streamline governance for all parties - government, corporations and citizens. ICT can be used to communicate between the three parties and support operations and activities. In other words, E-Governance uses ICT as a means of support and good governance. The objectives of E-Governance are therefore similar to those of smart governance. Smart governance can be seen as an exercise of economic, administrative power to improve the management of a country at all levels. It is useful here to present objectives for E-Government. The two main objectives of e-democracy are:

- To provide citizens access to information and knowledge about the political process, about services and about choices available and Securing all consumer needs and services for citizens.
- To make possible the transition from passive information access to active citizen participation by informing the citizen representing the citizen, involving the citizen, encouraging the citizen to vote and consulting the citizen.

3. BACKBONE OF ACTIVE GOVERNANCE

In reference [2], the concept of smart governance has also emerged from the felt need called New Public Management which began in the early 1980s, to improve public service efficiency. The core values around which new public management works are economy, efficiency and effectiveness. E-governance making use of ICT for better government functioning is a tool for achieving good governance. Good governance requires a long-term, strategic approach evolved through a consensus process. It also requires a long-term perspective on what is needed for sustainable human development. This can only result from an understanding of the social context of a given society or community. E-governance connects the citizen and government with ease and speed and hence has a pivotal role in the governance agenda. Good governance has 8 major characteristics. It includes participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive services and follows the rule of law. It ensures that corruption is minimized and transparency is maximized, that views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision making. It is also responsive to the present and future needs of society. Good governance is considered the single-most important factor for national development and poverty alleviation. It is based on certain key characteristics which are presented below.

3.1. Involvement

Involvement by both men and women is the key cornerstone of good governance and it could be either direct or through legitimate intermediate institutions or representatives. Involvement needs to be informed and organized. This means freedom of association and expression on the one hand and an organized civil society on the other.

3.2. Rule of law

Good governance requires fair legal frameworks that are enforced impartially. It also requires full protection of human rights, particularly those of minorities. Impartial enforcement of laws requires an independent judiciary and an impartial and incorruptible police force.

3.3. Consensus oriented

There are several actors and as many viewpoints in a given society. Good governance requires mediation of the different interests in society to reach a broad consensus on what is in the best interests of the whole community and how this can be achieved. It also requires a broad and long-term perspective on what is needed for sustainable human development and how to achieve the goals of such development. This can only result from an understanding of the historical, cultural and social contexts of a given society or community.

3.4. Transparency

Transparency means that when decisions are taken their enforcement is done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to those who will be affected by such decisions and their enforcement. It also means that enough information is provided and that it is provided in easily understandable forms and media.

3.5. Equity and Inclusiveness

A society's well-being depends on ensuring that all its members feel that they have a stake in it and do not feel excluded from the mainstream of society. This requires all groups, but particularly the most vulnerable, to have opportunities to improve or maintain their well-being.

3.6. Accountability

Accountability is a key requirement of good governance. Not only must governmental institutions be accountable to the public but also private sector and civil society organizations must be accountable to their institutional stakeholders. Who is accountable to whom varies on whether decisions or actions taken are internal or external to an organization or institution. In general an organization or an institution is accountable to those who will be affected by its decisions or actions. Accountability cannot be enforced without transparency and the rule of law.

3.7. Effectiveness and efficiency

Good governance means that processes and institutions produce results that meet the needs of society while making the best use of resources at their disposal. The concept of efficiency in the context of good governance also covers the sustainable use of natural resources and the protection of the environment.

3.8. Responsiveness

Good governance requires that institutions and processes try to serve all stakeholders within a reasonable timeframe.

4. COMMUNICATION

Data transfer media is the backbone of the data transfer process. Transmission media can be defined as physical path between transmitter and receiver in a data transmission system. And it may be classified into two types as shown in Figure 1.1 The first is guided which mean the transmission capacity depends critically on the medium, the length, and whether the medium is point-to-point or multipoint (e.g. LAN). Examples are co-axial cable, twisted pair, and optical fiber. The other one is unguided that provides a means for transmitting electro-magnetic signals but do not guide them. Example wireless transmission.

Characteristics and quality of data transmission are determined by medium and signal characteristics. For guided media, the medium is more important in determining the limitations of transmission. While in case of unguided media, the bandwidth of the signal produced by the transmitting antenna and the size of the antenna is more important than the medium. Signals at lower frequencies are Omni-directional (propagate in all directions). For higher frequencies, focusing the signals into a directional beam is possible. These properties determine what kind of media one should use in a particular application. In this lesson we shall discuss the characteristics of various transmission media, both guided and unguided, [3].
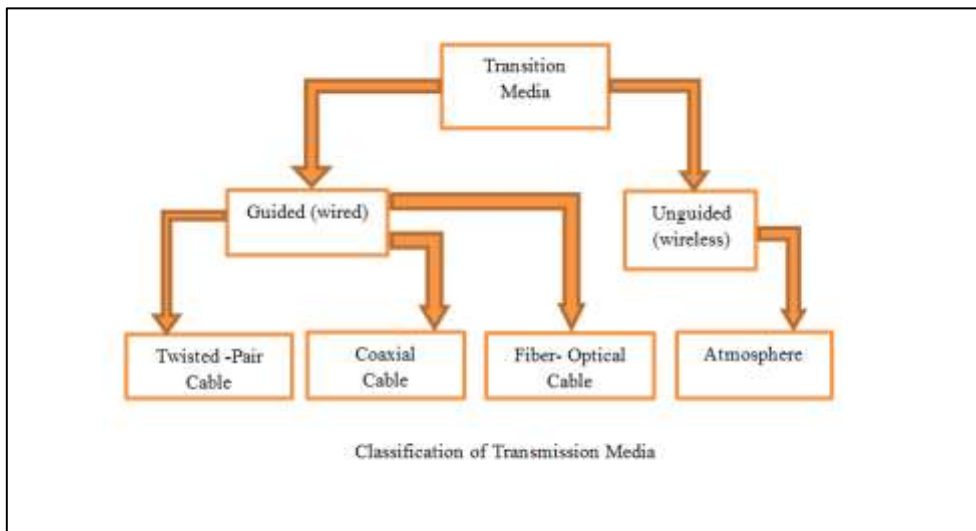
Figure 1.1: Data Transmission

4.1. Fiber optics

In fiber optic technology, the medium consists of a hair-width strand of silicon or glass, and the signal consists of light pulses. For instance, a pulse of light means ``1", lack of pulse means ``0". It has a cylindrical shape and consists of three concentric sections: the *core*, the *cladding*, and the *jacket* as shown in Figure 1.2. The core, innermost section consists of a single solid dielectric cylinder of diameter d1 and of refractive index n1. The core is surrounded by a solid dielectric cladding of refractive index n2 that is less than n1. As a consequence, the light is propagated through multiple total internal reflection. The core material is usually made of ultra-pure fused silica or glass and the cladding is either made of glass or plastic. The cladding is surrounded by a jacket made of plastic. The jacket is used to protect against moisture, abrasion, crushing and other environmental hazards, [3].
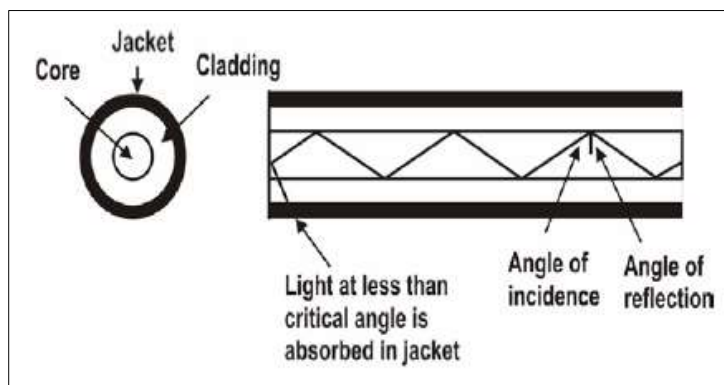
Figure 1.2: Fiber Optical Cable

4.2. Types of optical fiber

According to reference [4], optical fiber can be classified into:

4.2.1. Multi-Mode:

(a) Step-index – Core and Cladding material has uniform but different refractive index.

(b) Graded Index – Core material has variable index as a function of the radial distance from the center.

4.2.2. Single Mode – The core diameter is almost equal to the wave length of the emitted light so that it propagates along a single path.

4.3. Advantage of Fiber Optical Cable

As in reference [5], the benefits are electromagnetic/Radio Frequency Interference Immunity Optical fibers are immune to electromagnetic interference and emit no radiation.

- Decreased cost, size and weight: Compared to copper conductors of equivalent signal carrying capacity, fiber optic cables are easier to install, require less duct space, weigh 10 to 15 times less and cost less than copper.
- High accuracy: Optical fiber has lower attenuation (loss of signal intensity) than copper conductors, allowing longer cable runs and fewer repeaters.
- Safety: Since fiber optic systems do not emit RF signals, they are difficult to tap into without being detected.
- Base: Fiber optic cables do not have any metal conductors; consequently, they do not pose the shock hazards inherent in copper cables.
- Electrically Isolated: Fiber optics allows transmission between two points at no electrical potential between them.
- No sparks or shorts: Fiber optics does not emit sparks or cause short circuits, which is important in explosive gas or flammable environments.

According to the reference [6], Engineered to fit extension of demands: Fiber optics is affordable today, as electronics prices fall and optical cable pricing remains low. In many cases, fiber solutions are less costly than copper. As bandwidth demands increase rapidly with technological advances, fiber will continue to play a vital role in the long-term success of telecommunication.

5. CYBER TECHNIQUE IN BRIEF

As shown in Figure 1.3, all institutions involved in the electronic connection should provide infrastructure through a number of equipment and devices. The establishment of a data center for each institution with standard specifications, contains (fire alarm, cooling equipment, firewall, smart UPS to manage remotely, security cameras…etc.) in addition to network devices and programs. When connecting institutions together a special protocol must be established to contribute to auditing and cooperation. The development of information structures is very important in the establishment of unified databases between institutions, this improve the speed of making decisions and information exchanged rabidly between institutions where citizens can track the completion of transactions remotely and does not require the presence of citizens to the institution.

For example: in a new born baby which has a birth in any hospital, by using cyber technique the personal information of the new born baby will be recorded in database system then this data will be transferred to all government authorities to issue the necessary document and papers (unique national number, citizen ID, birth certificate …etc.) and the same technique can be followed in case of death.
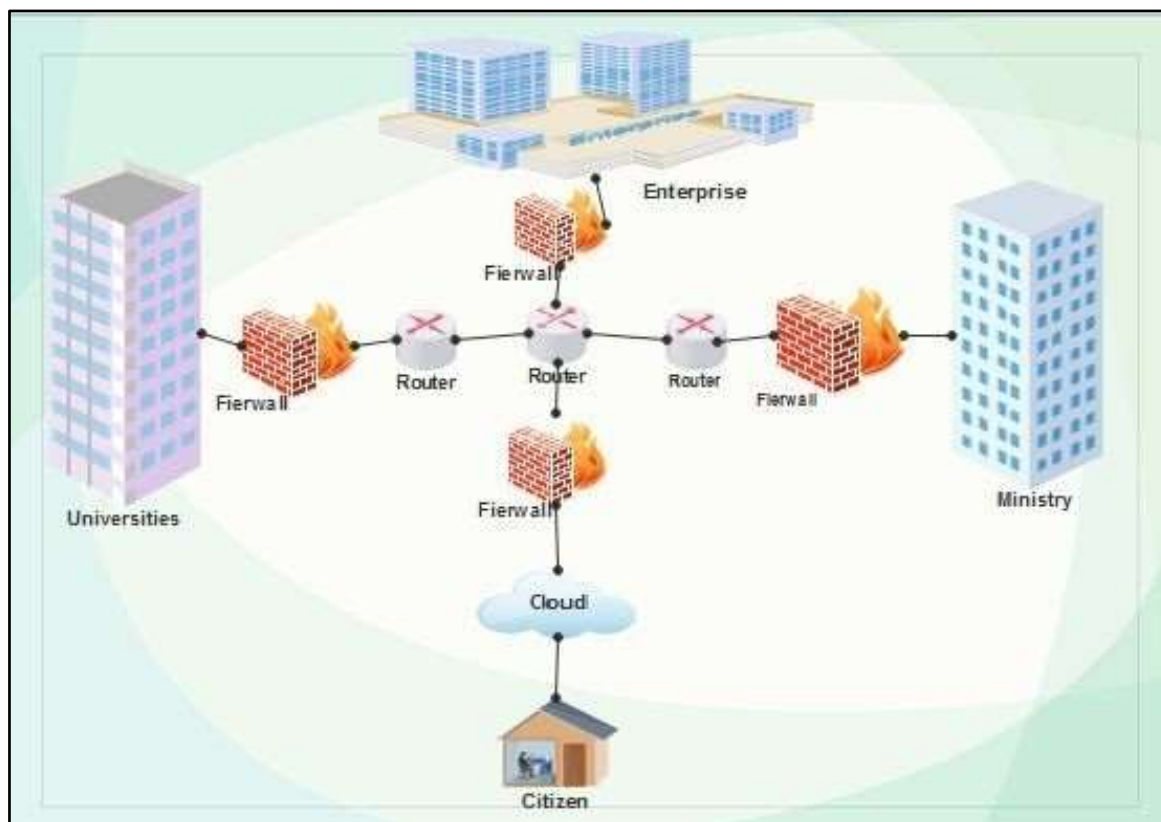

Figure 1.3: CYBER TECHNIQUE

6. DATA COLLECTION

According to reference [8], a part of the plan of the central Statistical Organization for the year 2015 was the implementation of the electronic readiness survey of the state institutions for the transition to E-Government. The survey was carried out by the Ministry of Planning and the Ministry of Science and Technology which included all ministries and non-associated with the Ministry in the provinces of Iraq. The object of this survey is to build a statistical database that includes the quality of the use and

advantages of information technology and communication. To achieve the ultimate of the concept of E-Governance in Iraq in addition to the development of future plans and policies to improve and speed up the processing of citizens application to any of government services. We will show some of the key indicators and statistical analysis of the readiness survey to shift towards electronic governance.

The results showed that the surveyed entities have a commitment to the E-Governance within the government program through the first category plan (activity / program / project) for the years 2015-2018. And the percentage of this center was 44% of the total surveyed .While the highest percentage appeared in the second category is the initiative (activity / program / project) amounted to 49%.Of the total number of entities covered .The results also showed that 32% of the total number of respondents do not have a commitment to the electronic governance clause. The Figure 1.4 below shows the details of Commitment to electronic governance.
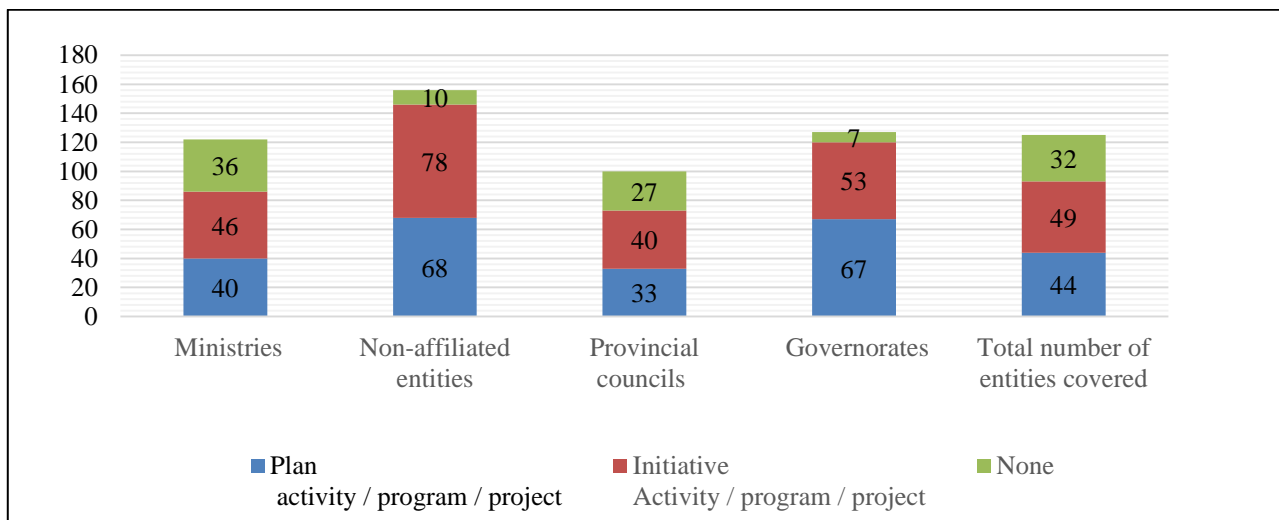

Figure 1.4: Commitment to electronic governance

E-Governance is an important part of Iraq's strategy, which is consistent with the government's public sector reform program. It is necessary to review and rationalize that strategy to ensure that the desired results are achieved. The impact of the use of governance on the overall business strategy has been assessed at three levels as shown in Figure 1.5. Percentage of the impact of the use of E-Governance on the overall work strategy in the composition and according to the levels of the surveyed entities for the year 2015.
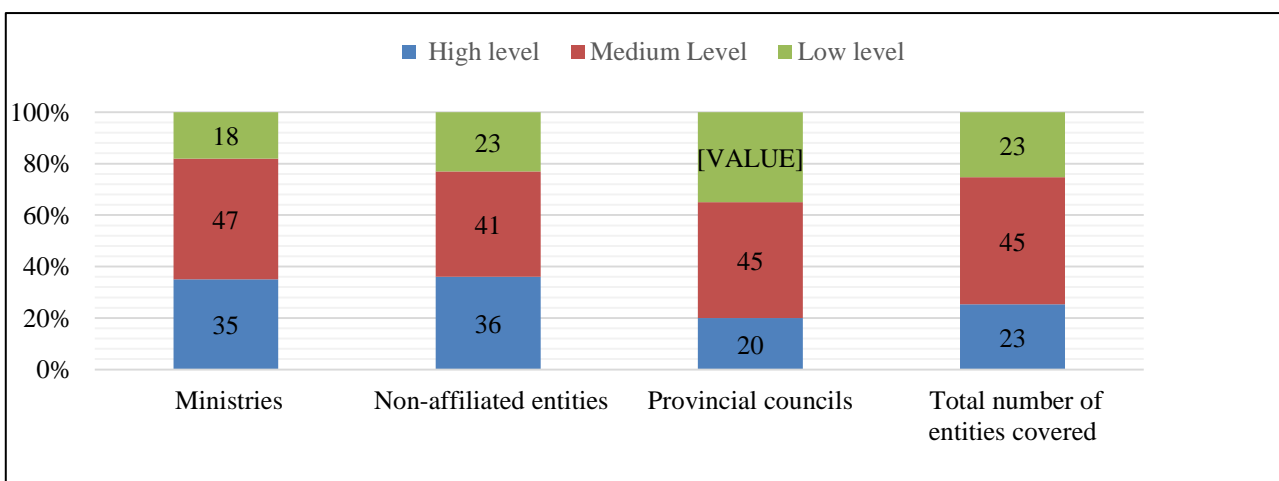

Figure 1.5: impact of the use of E-Governance on the overall work strategy

As shown in Figure 1.6, the results of the survey showed that the highest percentage of service delivery is the services of citizens and 42%. Followed by the second type, the provision of government services, to and from the government and the percentage was 38% .either the type of government services provided to businesses was 20%.
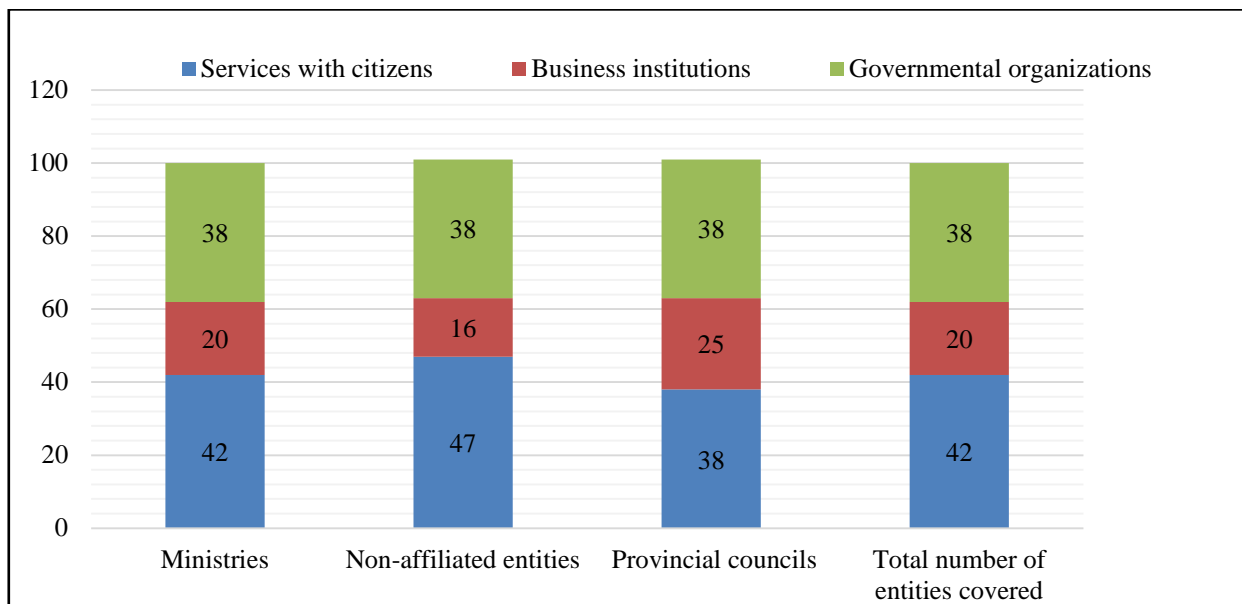
Figure 1.6: Type of electronic services

On the other hands, as shown in Figure 1.7, the results showed that the availability of electronic systems operating at the level of the surveyed entities amounted to 67%, which are under implementation 51%, while the formations where there are no systems estimated at about 16% .On the other hand, the results of the survey showed that the non-affiliated bodies of the Ministry obtained the highest percentages at the level of (yes working) and 92% followed by the ministries by% I and the provinces of the provinces by 40%.
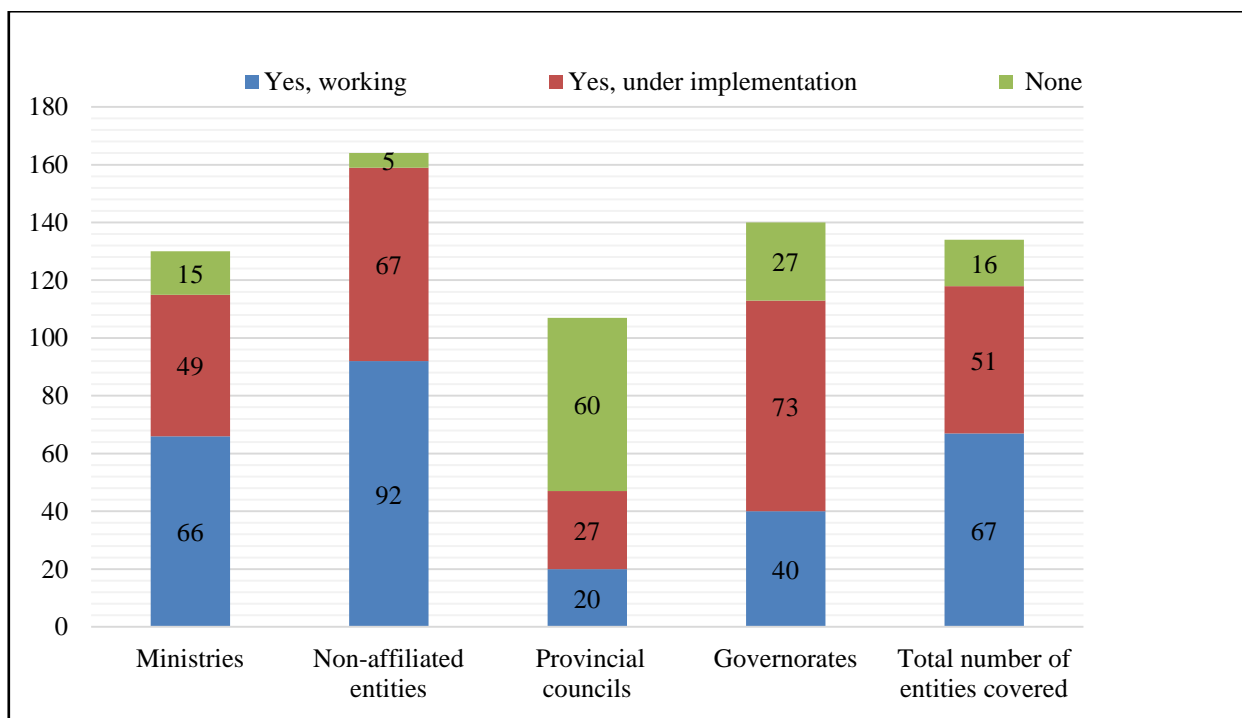

Figure 1.7: Electronic systems available

Finally, as shown in **Figure 1.8,** the survey results show that 42% of all survey respondents have a data network, 28% have a data network but are not effective, while the remaining 30% of the total data does not have a data network. As for the ministries, the formations that have a network of data effectively amounted to 40%. As for the non-linked to the Ministry was 80%. As for the provincial councils amounted to7%of the total of the provincial councils as for the boards of the provincial councils was 13%.
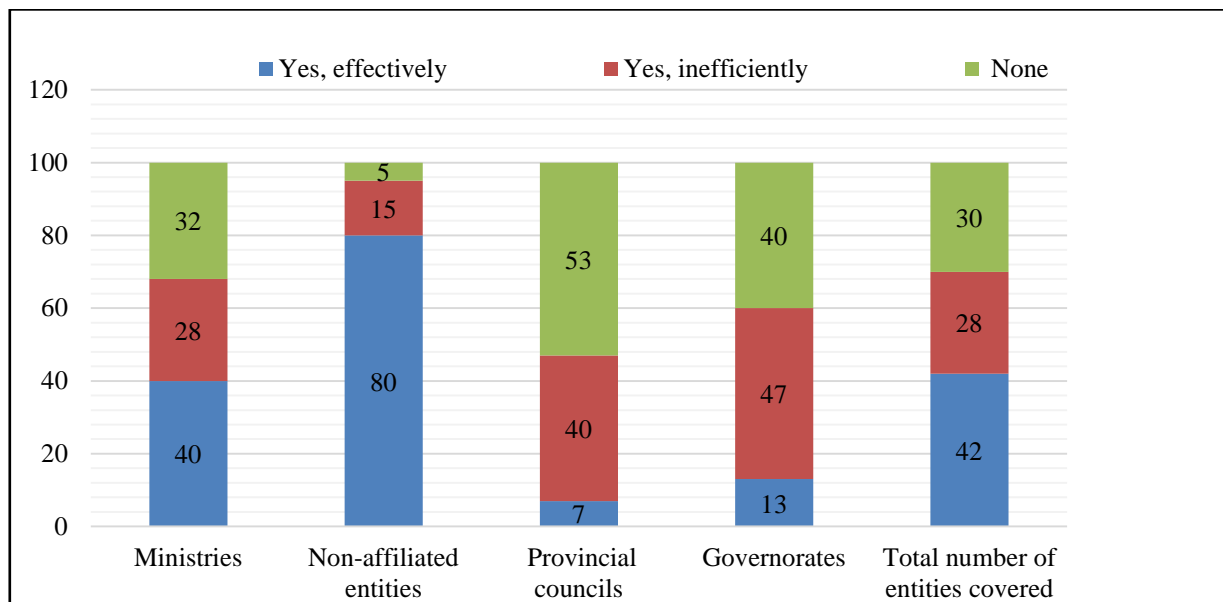
Figure 1.8: Availability of a data network

6 . CONCLUSION

- Through the results obtained, the readiness of state institutions to shift to electronic governance has been assessed poor in the application of E-Governance.
- All institutions should connect with each other by cyber network.
- Activation of laws and regulations to move to electronic rule.
- Upgrading of the infrastructure of all government institutions.
- Encourage citizens to use E-Governance.
- Provision and training of IT staff in all government institutions.
- Encouraging state institutions to establish electronic links to exchange information in order to improve the performance of all transactions of citizens electronically.
- Development of systems in the state institutions and their formations and the integration of information technology in the government sector in all its activities to raise awareness in the applications of technology.
- Consolidate long-term visions and strategies in the IT activity of all state institutions.
- Establish a data center for all institutions with standard specifications.

AKNOWLEDGEMENT

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