

E-Government in Iraq

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Abstract

Information Technology has become one of the core elements of managerial reform, and electronic government. E-governments can be considered as use of information and communication technology in public administrations.

The purpose of this paper is to examine the adoption-future of building E-Government services in Iraq. The implementation of E-Government requires several pre-request steps; one of them is ICT (Information and Communication Technology).

This work will focus on ICT to develop human resources. Based on our knowledge, the percentage of leaders and political decision makers who have experience in ICT in Iraq is lower than (10%). The strategy in this work will require 3 years to provide practical skills of ICT to all responsible persons (from ministers to government Employees), based on Standard Materials and International Certificates.

Keywords: E-Government, ICT, Skills and Knowledge, International Certificates, Global and Education Level.

الخلاصة

تمثل تكنولوجيا المعلومات احدى مكونات الادارة المشكلة للحكومة الالكترونية. يمكن اعتبار الحكومة الالكترونية على انها استخدام تقنية المعلومات والاتصالات في المؤسسات العامة. ان الغرض من هذا البحث هو دراسة نظرة مستقبلية عن بناء خدمات الحكومة الالكترونية في العراق. يتطلب تطبيق الحكومة الالكترونية عدة خطوات وإحدى هذه الخطوات هي تقنية المعلومات والاتصالات. يركز هذا العمل على تقنية المعلومات والاتصالات في تطوير المصادر البشرية. بالاعتماد على المعرفة فان نسبة القادة وصناع القرار السياسي الذين يملكون خبرة في تقنية المعلومات والاتصالات في العراق هم اقل من 10%. ان الاستراتيجية المتبعة في هذا العمل تتطلب ثلاث سنوات لتوفير المهارات العملية الى كل الاشخاص المسؤولين (بدء من الوزراء الى الموظفين الحكوميين) اعتمادا على المناهج القياسية والشهادات العالمية.

1. Introduction

The internet is now ubiquitous. In the past, it was mainly used for educational and information provision and sharing purposes, but internet applications now facilitate many essential day-to-day activities. E-Government is an important application of the internet and is used by authorities to encourage broad use of computers and to facilitate communication and interactions with its institutions, citizens and businesses ^[1].

E-Government is the use of electronic media in the facilitation of government processes. It covers a wide range of applications making use of multi-media broadcasting, radio networks, computer networks, mobile phone communication technologies, and other similar electronic devices. Internal information systems of Government agencies, information kiosks, automated telephone information services, SMS services and other systems all comprise E-Government services. All these are applications of Information and Communications Technologies (ICT) to improve the services of the Government towards its primary clients: the citizens ^[2].

A brief history of E-Government indicates that, in the 1990s, some governments around the world adopted e-government solutions, but the scope and pace of adoption varied significantly, ranging from simple web presence and one-way communication to two-way communication and transactions with citizens and business. Finally, this moved on to more integrated web presence and e-democracy. At a local level, many agency started to develop E-Government strategies between 1994 and 1999 and many local governments around the world already have an official web site. These web sites offer a variety of services, ranging from online payments, licensing and permit applications to simple provision of online documentation and email communication; the scope has continued to expand more advance to e-participants ^[3].

1-1 Definition of E-Government

E-Government refers to the use by government agencies of information and communication technologies (ICT) that have the ability to transform relations with citizens, businesses, government employees, and other arms of government in the delivery of services. For the World Bank, it is the use of ICT to improve the efficiency, effectiveness, transparency, and accountability of government ^[2]. There are different uses and advantages of E-Government and this requires many tools to achieve it such as ICT, the internet and mobile computing.

E-Government is a system that literally engages and covers every entity in its area of authority (i.e. citizens, businesses and public organizations). In other words, depending on the services offered, its scope includes everyone in its jurisdiction. In some instances, its scope can surpasses jurisdictional boundaries, where external services to people and businesses, such as tourism and foreign investment services, are provided. If E-Government is properly designed and developed, it provides all stakeholders with a winning situation, enabling savings in time, cost and effort ^[1].

Figure (1) illustrates mapping from Physical World to Digital (electronic) World.

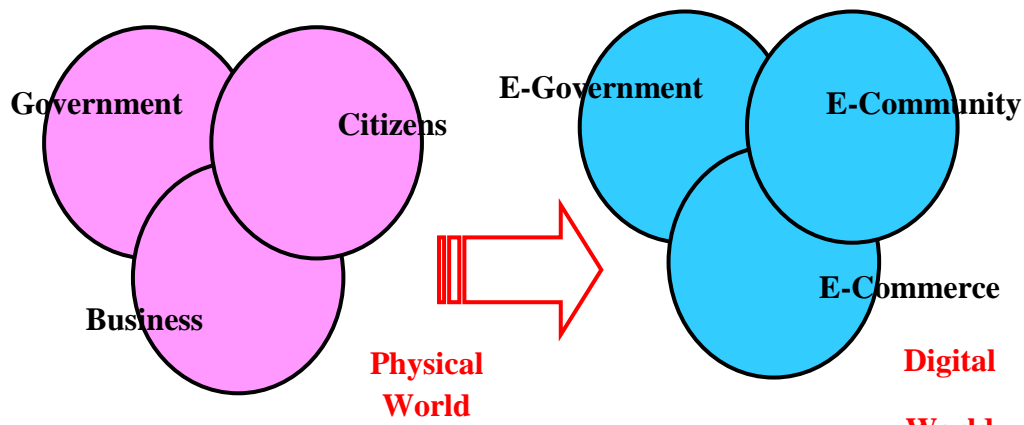


Figure (1): Mapping from Physical World to Digital World ^[4].

1-2 Benefits of E-Government

There are a number of reasons to consider implementing E-Government. The following are benefits of E-Government ^[5]:

1. A transparent government.
2. Improved and streamlined services with speed and convenience.
3. Expanded service capability to 24x7, at any time, at anywhere, as shown in Figure(2).
4. Realized efficiency gains, reduced human related errors and reduced unnecessary duplication of information by integrating databases and networking web sites and other gateways.
5. Increase of users' ICT skills and knowledge.
6. Timesaving and more useful and useable information .
7. Cost savings, improved efficiency.
8. Increased satisfaction, better public decision-making, more responsive government.
9. Improved life standards, happy and informed citizenship .
10. Build trust between governments and citizens.

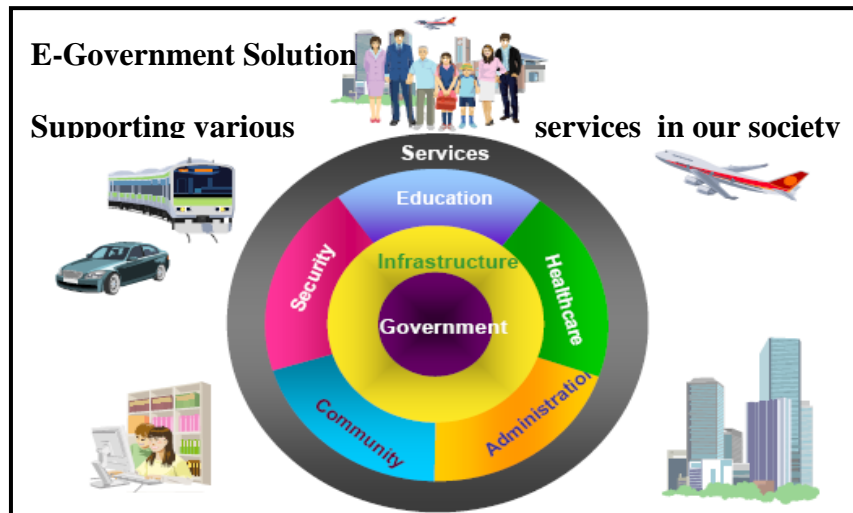


Figure (2) : Services of E-Government ^[6].

1-3 E-Government Requirements

Implementation of E-Government idea requires lots of efforts in a systematic and designed plan. These requirements can be summarized below ^[7,8]:

1. Plan or Strategies are essential to e-government formulation because they provide objectives for state agencies and governments.
2. Hardware, Using communication networks as correspondence highway between main government structure and lower levels of government agencies and customers of governmental services
3. Software, use in homes, schools, workplace, economy, government, everyday life, number of internet users, cellular users.
4. Human Recourses, ICT education, training, development programs, available skilled workforce, mass education, employment and skills,

Figure (3) illustrates main domain of E-Government Initiatives.

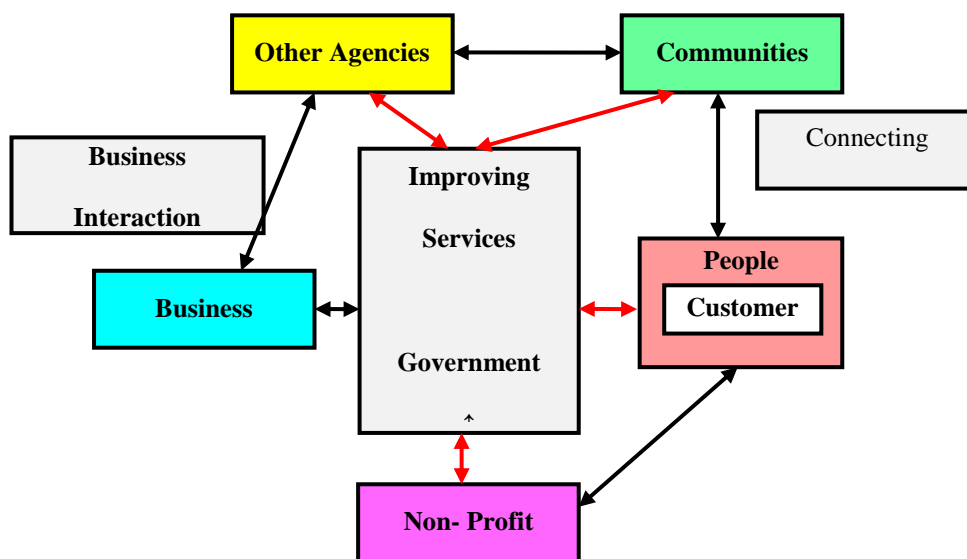


Figure (3) : Main domain of E-Government Initiatives ^[9].

1-4 Categories (Models) of E-Government

Citizen is the most important factor for the government, therefore, to increase the social prosperity, to modernize the social services, and to serve the citizens shall be given great severity to fulfill the requirements of not only the present time but also the future, as people want better access to better-quality public services ^[5].

The E-Government offers many services that can be categorized according to the service areas that have the greatest impact and are of the highest value to the consumers. These services differ according to users' needs and ICT capacity, and this variety has given rise to the development of different applications of E-Government. In general, these services can be organized into three categories:

1. Government-to-Citizen (G2C).
2. Government-to-Business (G2B).
3. Government-to- Government (G2G).

1-4-1 Government to Citizen (G2C)

This service delivery category focuses on the ability of the government and citizen to communicate information to each other in an efficient manner using electronic format ^[10]. The citizen has a number of relations to the state. These include client, customer, voter, subject (to laws and regulations), claimants, beneficiaries, etc.

G2C interactions vary in their level of complexity and in the symmetry of the transaction ^[5]. The majority of government services lie in this application ^[1].

1-4-2 Government-to-Business (G2B)

This is the second major application of E-Government. The Government-to-Business (G2B) application is as useful as the G2C system, enhancing the efficiency and quality of communication and transactions with business. Businesses do not vote, but instead, with other relations, they may act as providers to government in instances where government contracts services to businesses or operates in conjunction with them. Businesses as well as individuals have transactions with the government, examples being: renewing registrations, lodging taxes, downloading tenderers’ information, and many others ^[1,5].

1-4-3 Government-to-Government (G2G)

The relationships between different government institutions may occur at different levels or may even cross from one level to another, like supranational, national, regional and municipal levels. As with the exchanges between government and citizens, E-Government exchanges between government agencies may be a two- way process, where user provides information to trigger the flow of information. In another use, one government agency can provide information for another one to browse ^[5].

Many government processes and transactions require collaboration and inputs from different public organizations. The ultimate aim of the Government-to-Government (G2G) application is to enhance inter-government organizations’ processes by streamlining collaboration and coordination. This application serves both internal processes and activities (between public organizations themselves) and external ones also (between government organizations, citizens and businesses). Table (1) illustrates interaction (models) between Citizen, Government and Business .

Table (1): Models of E-Government ^[11].

	Citizen (Cit)	Government (Gov)	Business (Bus)
Citizen	C2C	C2G	C2B
Government	G2C	G2G	G2B
Business	B2C	B2G	B2B

1-4-4 Government-to-Employee (G2E)

Some references classified Government into four models instead of three. The fourth model is (G2E). G2E is perhaps the least adopted application of E-Government. Scholars and countries around the world usually focus on the first three applications only; others consider it as an integral part of G2G. Information and services offered by government institutions to employees and the channels by which employees interact with senior management are represented by G2E. Intranet systems developed inside government organizations are a good example of this form of communication [1].

Figure (4): illustrates relationship among Citizen, Business and Government.

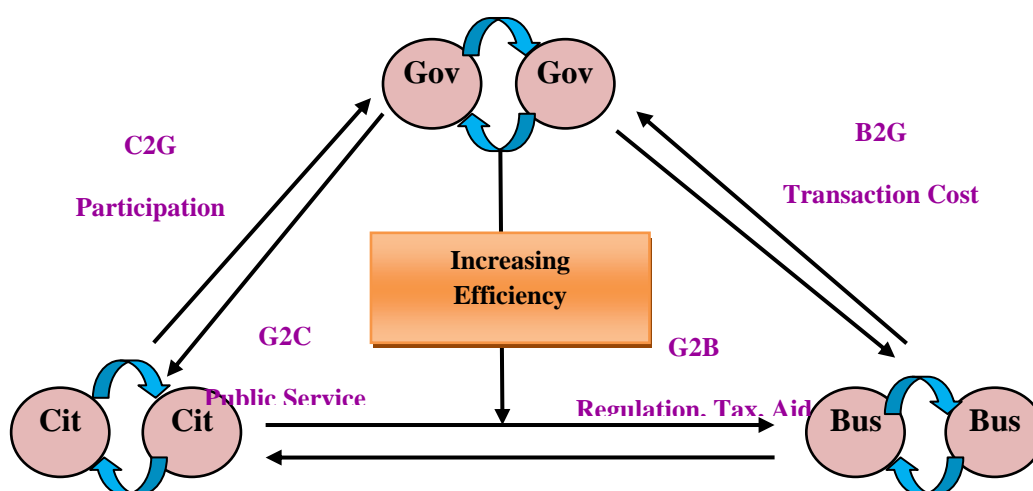


Figure (4) : Relationship among Citizen, Business and Government [12].

The following form represents sample form of citizen to fill its official approval data Concerning Dubai Health Authority of Ministry of Medicine of Dubai Government [13]. The citizen must fill the form with appropriate personal data required in specified fields.

2. Research Objective

ICT has been recognized as the engine for growth and a source of energy for the social and economic empowerment of any country, specially a third world country [14]. Despite how advanced in ICT a country is, many hurdles and dilemmas must be faced in the adoption and diffusion of E-Government initiatives [1].

The main issue which suffers E-Government is lack of specialized IT Staff. Skilled staff is one of the greatest needs and sometimes it was the highest critical one.

Therefore the proposed plan includes Training, Educating and Raising IT awareness by implemented the following prerequisites steps:

1. Develop and Increase leaders and political decision makers ICT awareness through training courses.
2. Skills and Knowledge through education.
3. Training Courses should be offered to citizens (employees).

In this research we will provide suggestive ways on how to increase usage of ICT services. We believe that as users become more aware and confident transacting on the internet, E-Government transactions will no longer face a demand issue but rather a supply dilemma.

3. Implementation

Many researchers realize the importance of users in building E-Government. The governments should view their citizens as customers because E-Government is not about technology; it is about people making E-Government happen ^[1].

A society's level of ICT knowledge and education is perhaps one of the most important factors affecting E-Government take-up^[15]. People should be aware of the available online services, capable of performing the needed tasks and informed about the expected benefits over the normal means. The government should continuously publicize E-Government initiatives to inform users about where and how to utilize them^[1].

The aim of this section is to document and analyze an ICT case study in Iraq. ICT applications in Iraq were measured according to the skills in computer courses. On the basis of the above assumptions, the course focuses on three (interrelated) areas through (2) weeks:

1. Operating Systems.
2. Applications.
3. Internet and E-mail.

Iraq government likes other countries such as (Arab countries , Asian and European. for example: Jordon, Egypt, Iran, Philippines) are only in the initial phases of adopting ICT to improve financial management information and reporting, streamline the delivery of government services, enhance communication with the citizenry, and serve as a catalyst for empowering citizens to interact with the government ^[16].

Ministry of Science and Technology and ministry of Communication have pre steps for establishing infrastructure of E-Government in Iraq since 2004. Both ministries announce that after year 2010 is represented achievement of infrastructure of communication in Iraq for preparing project of E-Government to offer variety of services to citizens and Public Organizations ^[17].

Implementation E-Government in Iraq needs three requirements to be applied.

- 1- Infrastructure of communication.
- 2- Rules , legal laws and ethics required for services.
- 3- Human resource with skill knowledge (management and technology).

A Case Study of training ICT course on Computer Center of Baghdad University is conducted to 100 persons from ministry of Higher Education and Scientific Research. The participants in this course include Deputies, Public Managers, Heads of Departments, and employees. The course runs over 3 weeks and includes online assessment.

At present the government should ensure that every user has ICT units for training and supporting ICT activities. The analysis highlights the actions that would be helpful at multiple levels and required 3 years to implement these strategies:

- *First* Year, For Leaders and Political decision makers.
- *Second* Year, For Education (Lecturers and Students).
- *Third* Year, For Employees.

To ensure that diverse ICT capabilities are effectively harnessed, there is a need to establish coherent strategies at the *Global* and *Education* levels.

The government from its development goals and through its *Ministries (Global)*, and *Education* sector should prioritize use of ICT and demand to see progress in this public sector from the Local Government Authorities. The bigger picture here is that, if ICT is among the key priority areas in the Country's development policies, then leaders in the Local Government Authorities will fill obligated to stimulate ICT activities in their territories.

Presently, the civil service comprises of 33 ministries. The ongoing ICT program and work will require the development of IT literacy among ministers of Iraq (**Global Level**) and approximating (**149725**) Person (lecturers, students and employees) from ministry of Higher Education and Scientific Research (**Education-Level**). It is therefore vital that there is timely-coordination and cooperation between all ministries, departments and employees to ensure that the ICT are implemented as scheduled.

In both levels (Global and Education), the availability of expert persons (Instructors) in ICT is required. We will mention how to collect and prepare such persons.

Steps to implement Strategy

Level-1 : Ministers, Deputies of Minister.

First, the issue of connectivity should be addressed as a high-priority for policy makers. From experience, Most of the political leaders in Iraq have no interest in ICT, which may be due to lack of ICT awareness and lack of knowledge on how to use ICT services.

Let N=No. of Ministries (ministers) in Iraq= 33 ^[18].

Let M=No. of deputies for each minister=3

Thus, the no of participants of this level is:

$$\text{Total_Level1}=(1+M) * 33 = 4 * 33=\underline{\underline{132}}$$

Let NRoom represents No. of Classrooms can be used at the same time =6

NPart represents No. of participants for each course = Total_Level1/NRoom=132/6=23.

Suppose that we need 2 instructors in each classroom.

Then, NInstructor (which represent No. of Instructors required for all courses)

$$=NRoom*2=6*2=\underline{\underline{12}}$$

Level-2: Presidents of Universities, Vice Presidents, Consultants of Minister.

Let I=No. of Presidents of Universities in Iraq= 24, According to site of Ministry of Higher Education and Scientific Research ^[19].

Let J=No. of Vices President for each President =2

Let K=No. of Consultants for each Minister =2

Thus, the no of participants of this level is:

$$\text{Total_Level2}=\left(\left(1+J\right) * I\right)+K*N =\left(3 * 24\right)+2*33=72+66=\underline{\underline{138}}$$

Let NRoom represents No. of Classrooms can be used at the same time =6

NPart represents No. of participants for each course =Total_Level2/NRoom=138/6=23.

Suppose that we need 2 instructors in each classroom.

Then, NInstructor (which represent No. of Instructors required for all courses)

$$=NRoom*2=6*2=\underline{\underline{12}}$$

It is suggested that level 1 and 2 can be implemented at Computer Center of Baghdad University.

Level-3: Deans of Colleges & Assistants of Dean.

Let U=No. of Colleges , Centers in University of Baghdad =36

Let V= No. of Dean and Assistants of Dean for each college, Center =3

Let W= No. of Dean and Assistants of Dean in Baghdad University =U*V=36*3=108

Note: According to statistics of Ministry of Higher Education and Scientific Research about Universities in Iraq, Baghdad University is takes approximately 65% in number of Lecturers, Students and Employees comparing to other universities and this percent is used in computation for level 3 through 6.

Let Z= No. of Dean and Assistants of Dean in Other Universities =115

Thus, the no of participants of this level is:

$$\text{Total_Level3} = W + Z = 108 + 115 = \underline{\underline{223}}$$

It is suggested that level 3 can be implemented at Computers Centers of its Universities.

Level-4: Lecturers of Universities.

This level includes all the lecturers at the universities

Let O=No. of Lecturers in Baghdad University =7000

Let P= No. of Lecturers in Other Universities =3770

Thus, the no of participants of this level is:

$$\text{Total_Level4} = O + P = 7000 + 3770 = \underline{\underline{10770}}$$

The total no of participants for the first year of training is

$$\begin{aligned} \text{Total_Level_1234} &= \text{Total_Level1} + \text{Total_Level2} + \text{Total_Level3} + \text{Total_Level4} \\ &= 132 + 138 + 223 + 10770 = \underline{\underline{11263}} \end{aligned}$$

As supposed above, each lecturer can be training in its college.

Level-5: Students of Bachelors

The government should consider putting emphasis on ICT lessons in college. The educational syllabuses should be amended to include details of computer course contents mentioned above depended on , ‘Standard Materials and International Certificates, as a minimum requirement for graduated from bachelors. Currently colleges give lectures on computer but without standardization.

The University course of E-Government aims to provide the students a specialist and applicable scientific and practical knowledge of Information and Communication Technology (ICT), which can be applied to the public and non-profit sectors

Let E=No. of Student of Bachelors in Baghdad University =80000

Let F= No. of Student of Bachelors in other Universities =43077

Thus, the no of participants of this level is:

Total_Level5=E+F=80000+43077=123077

Currently, Postgraduate must obtain an International ICT Certification as a requirement for completed education.

Based on our knowledge, instructor are already existed since all colleges organized courses of basic computing for their students (first and second stage)

Level-6: Employees of Universities.

Let X=No. of Employees in Baghdad University =10000

Let Y= No. of Employees in Other Universities =5385

Thus, the no of participants of this level is:

Total_Level6=X+Y=10000+5385=15385

In Iraq, there are 21Government Authorized Centers for training and exam ICT courses based on Standard Materials and International Certificate.

In each center, there is at least two instructors for ICT, where as the Computer Center of Baghdad University has more than 25 ICT Instructors.

Table (2) gives a summary of all levels .

Table (2): Total No. of Participants

	Number of Participants
Level-1	132
Level-2	138
Level-3	223
Level-4	10770
Level-5	123077
Level-6	15385
Total Number of Participants	149725

Table (3) and Chart (1) show the time implementation of ICT

Table (3): Time Implementation of ICT Strategy

Year	Total Number	Levels
1 st Year	11263	1,2,3,4
2 nd Year	123077	5
3 rd Year	15385	6

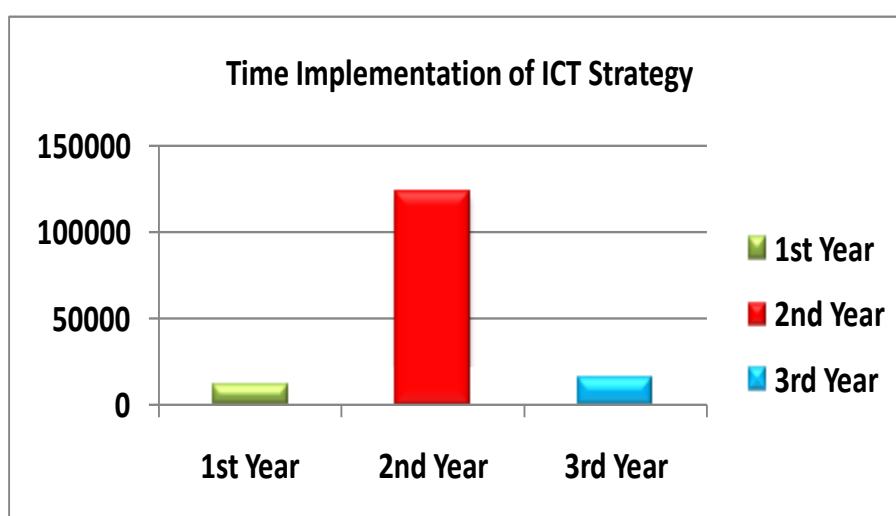


Chart (1): Time Implementation of ICT Strategy

4. Conclusion and Recommendation

In the modern world there is an increase in dependence of information and knowledge management to gain competitive advantage in the social and economic arenas. Governments in developed countries have invested in ICT to ensure that their strategies succeed through implementation and use of ICT to run their operations (E-governance).

Iraq government are only in the initial phases of adopting ICT to improve financial management information and reporting, streamline the delivery of government services, enhance communication with the citizenry, and serve as a catalyst for empowering citizens to interact with the government

At present the government should ensure that every user has ICT units for training and supporting ICT activities. The analysis highlights the actions that would be helpful at multiple levels and required 3 years to implement these strategies:

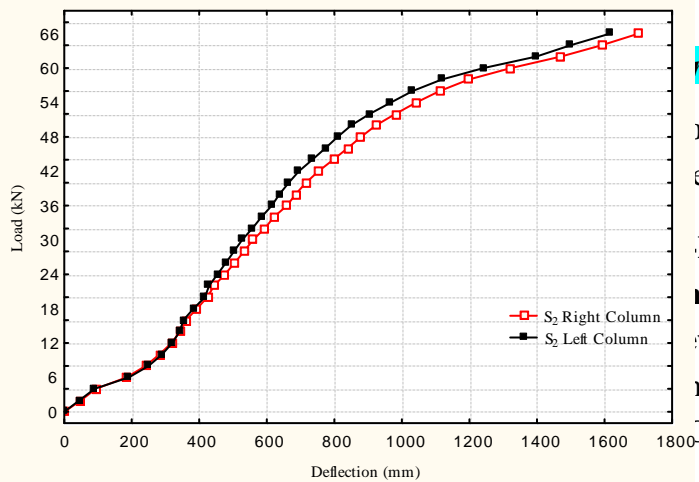
- *First* Year, For Leaders and Political decision makers.
- *Second* Year, For Education (Lecturers and Students).
- *Third* Year, For Employees.

E-Government research strategy recommendations arise directly out of the need for implement the following three challenge.

1. Allocating available amount of budgets by ministry of financial in Iraq for Human Resource IT Skills through training persons of both levels (Global and Education) through 3 years.
2. Monitoring activities of all Government Authorized exam ICT Centers (21), by selecting best five Persons from each center and evaluate the quality of system.
3. Establishing community of Expert persons named **ICT group** which is internationally authorized to design and implement ICT plan strategy.

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