

Analysis of Optimum Solution to Enhance Utilization of ICT services at the Grassroots Community: The Case Study of Dodoma Municipal Council in Tanzania.

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Abstract- The study intended to analyze the optimum solution to enhance utilization of Information and Communication Technology (ICT) services to the grassroots community in Dodoma Municipal Council (DMC) in Tanzania. The specific objectives of this study were to: identify the availability and use of ICT infrastructures for service delivery at grassroots level; identify possible Local Government Authorities (LGAs) services/products offered through the use of ICT services; identify challenges that LGAs face in using ICT infrastructures for service delivery and recommend the best solution to enhance utilization of ICT services to the grassroots community for efficiency and effectiveness of service delivery to the grassroots community.

The study findings points out that a variety of ICT tools and services have not been used in the Dodoma Municipal Council (DMC) for service delivery and communication to the grassroots community. The following are the factors that were identified why ICT has not been used for service delivery to the grassroots community: - inadequacy of ICT infrastructures; lack of necessary skills; lack of awareness of ICT services; lack of an ICT policy; lack of proper planning for the embracing ICT technologies in DMC and lack of ICT education on how to use ICT equipments.

Therefore, recommendations were made on the optimum solutions to enhance the utilization of ICT services to the grassroots community which includes: - Installation of ICT infrastructures and ICT technologies to the DMC as well as to grassroots community.

Index Terms- Information Technology and Communication (ICT), Grassroots Community.

I. INTRODUCTION

Information and Communication Technologies (ICT) is a compound term that is used to refer to the convergence of a wide array of new computer-based communication technologies that are presently being developed and used in the creation, processing and transmission of information by electronic means such as radio, television, cellular phones, computer and network hardware and software and satellite systems (Blessing M. et al, 2011).

Information and Communications Technologies (ICT) advances since the end of the 20th Century have led to multiple convergences of content, computing, telecommunications and broadcasting. They have brought about changes in other areas,

particularly in knowledge management and human resources development. Increasing capacity of ICT has further been empowered by the growth of a global network of computer networks known as the Internet. It has impacted the way business is conducted, facilitated learning and knowledge sharing, generated global information flows, empowered citizens and communities in ways that have redefined governance, and have created significant wealth and economic growth resulting in a global information society (D.N. Gupta, 2008 & URT, 2003).

The rapid development of ICT, particularly the Internet, is one of the most attractive factors in the development of many countries around the world particularly in the area information dissemination and communication. ICT powers our access to information, enables new forms of communication and serves many online services in the world of business, communication, education, advertisements and entertainment. It is used as a tool for service delivery to the citizens; for efficiency and effectiveness of service delivery to the community at any time anywhere with affordable cost, to be available 24hrs/7days. The use of ICT has made a big step in the development of the economy in many countries all over the world. Such countries include inter-alia: - Finland, Singapore, Sweden, Netherlands, Norway, Switzerland, United Kingdom, Denmark, United States, Germany, Israel, Japan, Australia, South Africa; South Africa; Egypt; Cape Verde; Rwanda; Morocco; Kenya; Ghana; Botswana; Uganda; Namibia and Zambia (Janet, K, 2004, Patricia J, 2003, WEF, 2010 & Yonazi et al, 2010).

Tanzania like any other developing countries embarked on the use of ICT in 1990s as a part of both Public Service and Local Government reform. Since then, Tanzania has made remarkable progress in its development by deploying Information and Communication Technologies (ICT) in various sectors of the economy. This progress has been well received by the citizens and service providers who are striving to address unmet demand and competition in newly liberalized markets. Most of government ministries, departments, agencies and institutions (MDAs) and LGAs have deployed ICT infrastructures, yet still most of services are offered manually, such services include:- Business registration; Business license; business tax; tendering and procurement services; Government housing services; payment of different government taxes (URT, 2003).

Local government authorities (LGAs) are sub national level of government that are operating within a specified local area of jurisdiction, their main function is to provide services to the grassroots community in a participatory manner. The grassroots

community refers to the beneficiaries of all services that are offered by LGAs. The grassroots community currently is using manual way of accessing services in LGAs. It is expensive and time consuming to access manually services from LGAs. There are many challenges that are facing LGAs in provision of quality services to the grassroots community and stakeholders. Most of LGAs have installed ICT infrastructures, yet they still provide services to the community manually. As a result, they experience inefficiency in service delivery and information sharing (Yonazi et al, 2010).

For these reasons there was a need of finding a best way of solving these problems in order to improve quality of service delivery at Dodoma Municipal Council (DMC) to the grassroots community. Embracing ICT services is best solution to overcome these problems; since it is the powerful tool for providing information faster and at affordable price, more flexibly and more concisely than it would be possible without the respective tool.

II. RESEARCH ELABORATIONS

2.1 Study area

The study was conducted at Dodoma Municipal Council (DMC) in Dodoma region. Dodoma region comprises of nine councils (Dodoma Municipal Council, Dodoma district Council; Kongwa District Council; Chamwino District Council; Bahi District Council; Mpwapwa District Council; Kondo District Council and Kondo Township Authority and Chemba District Council). Dodoma Municipal Council was selected due to its fastest growing area in terms of increased number of higher learning institutions; government offices including parliament and its nomination as capital city of the United Republic of Tanzania. Such increased number of government institutions implies that there is increased demand of ICT use.

2.2 Sampling techniques

In this study both random and purposive sampling method were used to select a sample of 50 respondents from both DMC's staff and members from grassroots community. Random sampling refers to sampling whereby all members in the population have an equal chance of being selected to form a sample and Purposive sampling refers to sampling whereby the researcher consciously selects particular elements or subjects for addition in a study so as to make sure that the elements will have certain characteristics pertinent to the study, normally targets a particular group of people (Adam, J and Kamuzora, F., 2008).

Random sampling technique was used only in selecting wards as well as villages and Streets to be sampled out of thirty seven (37) wards, one hundred sixteen hundred (116) Streets and forty nine (49) villages (Census, 1988/2002). In this case, 37 pieces of paper were prepared in which each was written a name of one ward. The pieces of papers was sealed and put in a container, in which they were mixed and thereafter one piece of paper was selected randomly to obtain four wards and then the

excise continued until the required sample of eight (8) Streets/Village was obtained.

Therefore, in this case the following four wards were selected as a sample: - Hazina ward; Kilimani ward; Kizota ward and Hombolo ward, of which two (2) Streets/Village were selected to make a total sample of eight (8) Streets/Village, where by 5 respondents were selected from each Streets/Village to make a total of 40 respondents.

On other hand, purposive sampling technique was applied to 10 respondents which included the Municipality Director, Municipality Human Resource Officer, Municipality Planning Officer, Municipality Treasure, Municipality Community Development Officer and five members from ICT section.

2.3 Types of Data

The study employed both primary and secondary data; both interviews and semi structured questionnaires were used for collecting primary data on the optimum solution to enhance utilization of ICT services at the grassroots community from both grassroots community and DMC's staff. Secondary data was collected from field through documentary analysis such as books, academic journals; professional journals, magazines, internet, government publications, different official annual reports, research reports as well as other publications related to optimum solution to enhance utilization of ICT services at the grassroots community (Kothari, C.R 2006).

2.4 Data Analysis and Presentation

Collected data were coded, entered, verified and cleaned before analysis. Collected data were analyzed by using Statistical Package for the Social Sciences (SPSS) 21.0 version. The analyzed data were summarized in frequencies and percentages and then presented in tables, graphs and figures; thereafter were interpreted and discussed. Therefore, after discussions of findings, conclusion and recommendations were made basing on the interpretation of data in the tables, graph and figures.

III. RESULTS AND DISCUSSION

In order to identify whether ICT services are being utilized in service delivery at LGAs or not, data were collected, presented and there after discussion and conclusions were made. The findings were obtained from: - Awareness in the ICT; Installed ICT infrastructure in DMC; Computer facilities connected to the Internet at DMC and finally Services offered by DMC through the use of ICT services.

3.1 Awareness in the ICT

Figure1: Provides a summary of responses on whether grassroots community and DMC employees have awareness of ICT or not. The data were collected through structured interviews and questionnaires from 40 respondents from the grassroots community and 10 respondents from DMC. Respondents were requested to tick the correct answer.

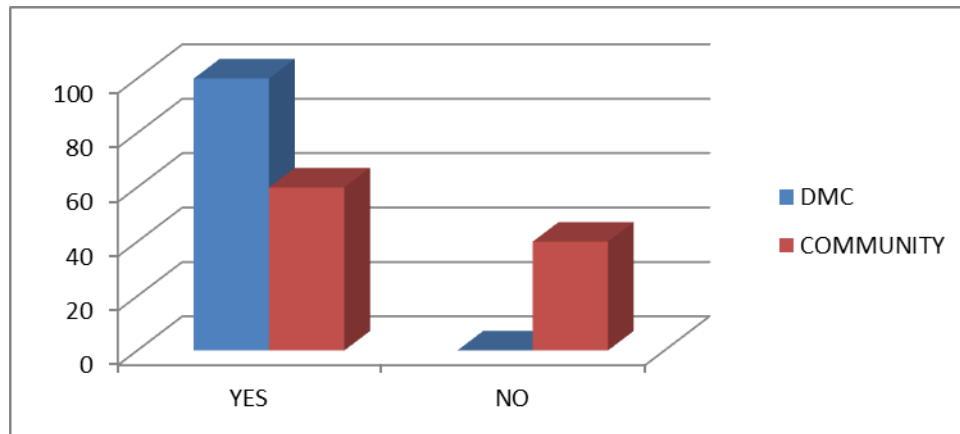


Figure1: Respondent’s Awareness on the ICT
Source: Field data, 2011

According to the findings summarized in figure 1, it can be noted that 20 (50%) of the total respondents from the grassroots community argued that they have heard about ICT while all 10 (100%) respondents from DMC said that they have heard about ICT. On other hand, 50 (50%) of the respondents from the grassroots community said that they have not heard about ICT.

On the basis of the above findings, majority in the grassroots community were aware with the ICT, only few of them were not aware of ICT. On the other hand, all respondents from DMC had heard about ICT. This means that there are many people in DMC and its surrounding who are aware of ICT than those who are not aware. Hence, the usability of ICT services in the grassroots

community is possible since there is high acceptability of ICT services around.

3.2 Installation of ICT Infrastructure at DMC and at Community Level

Table1, below shows responses on the installed ICT infrastructures in DMC and at the grassroots community. The data were collected through structured interviews and questionnaires from 40 respondents from the grassroots community and 10 respondents from DMC. Respondents were asked to tick the correct type of network installed at DMC as well as at grassroots community.

Table1: Installation of ICT Infrastructure at DMC and at Community level

Grassroots Community			DMC	
Responses	Frequency	Percentage	Frequency	Percentage
Local Area Net work	15	37.5	2	20
Wide Area Network	20	50	1	10
Not Applicable	5	12.5	7	70
Total	40	100	10	100

Source: Field data, 2011

According to the findings on table1 above majority (37.5% and 50%) of the respondents from the grassroots community pointed out that in their living and work places there were installations of ICT infrastructures such Local Area Network and Wide Area Network, while at DMC only10% and 20% of the respondents pointed out that there was installations of Local Area Network and Wide Area Network respectively.

Basing on the above analysis, it can be concluded that majority of respondents from the grassroots community said that there were ICT infrastructures installation in their living and working places while at DMC majority of the respondents argued

that there were few installations of ICT infrastructures in some offices, hence poor communication and service delivery to the grassroots community.

3.3 Computer Facilities Connected to the Internet at DMC and at Community Level

Figure 2: Reviewing responses on the computer facilities connected to the Internet. The data were collected through structured interviews and questionnaires from 40 respondents from the grassroots community and 10 respondents from DMC.

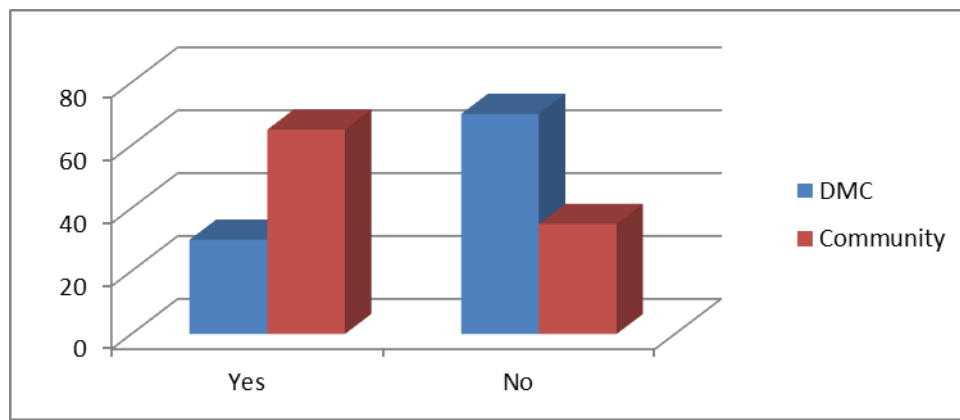


Figure 2: Computer Facilities Connected to the Internet

Source: Field data, 2011

The finding from the grassroots community shows that 26 (65%) of total respondents confirmed their computer facilities were connected to the Internet, while 3(30%) respondents from DMC pointed out that their computer facilities were connected to the Internet through the use modem. Moreover, 14 (35%) respondents from grassroots community pointed out that their computer facilities were not connected to the Internet while, 7(70%) of the respondents from DMC pointed out that their computer facilities were not connected to the Internet since the DMC does not have Internet facilities.

Hence, on the basis of the above analysis, the majority of the respondent’s from both grassroots community and DMC confirmed that their computer facilities were not connected to the Internet. This shows that Internet accessibility is still a great problem in both DMC and grassroots community. Hence, poor

service delivery to the grassroots community at anytime anywhere at affordable price.

4.4 Services offered by DMC through the use of ICT services

Table2: Gives summarizes of responses on types of services offered by DMC through the use of ICT. The data were collected through structured interviews and questionnaires from 40 respondents from the grassroots community and 10 respondents from DMC. In this case, the total items of the type of services offered by DMC through the use of ICT Services to the grassroots community were 12 in total of which some of them were mentioned with more than one respondent and make a total 135 responses from the grassroots community and 30 from DMC.

Table2: Services offered by DMC through the use of ICT services

Grassroots Community			DMC	
Responses	Frequency	Percentage	Frequency	Percentage
Payment of different taxes	1	0.7	0	0.0
Biding tenders	4	3.0	0	0.0
Business License	4	3.0	0	0.0
Purchasing or ordering goods/services	4	3.0	0	0.0
Health information	1	0.7	0	0.0
Government reports and policies	11	8.1	0	0.0
Agricultural information	10	7.4	0	0.0
Education information	11	8.1	5	16.7
Government housing services	2	1.5	0	0.0
Job advertisement	11	8.1	10	33.3
Project reports	7	5.2	5	0.0
Not applicable	69	51.1	10	33.3
Total	135	100.0	30	100.0

Source: Field data, 2011

According to the findings from the grassroots community, 69(51.1%) of the respondents which was the majority said it was not applicable meaning that there were very few services from DMC that were offered through the use of ICT services, where by 11(7.4%) of them said that ICT services were used for job advertisement and government reports and policies. However,

few respondents 10(33.3%) from DMC pointed out that there were very few government services that were offered online.

On the basis of the above findings, majority of the respondents agreed that there were very few services from DMC that are delivered to the grassroots community through the use of

ICT services. This implies that very few government services at DMC offered through the use of ICT services.

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The study findings points out that a variety of ICT tools and services have not been used in the Dodoma Municipal Council for service delivery and communication to the grassroots community. The following are associated factors the use of ICT in service delivery to the grassroots community: - inadequacy of ICT infrastructures; lack of necessary skills; lack of ICT technologies like web technology, e-government and community information centers; lack of awareness of ICT services; lack of an ICT policy; lack of proper planning for the embracing and distribution of ICT in LGAs and lack of ICT education on how to use ICT equipments.

The level of the respondents in the use of ICT services in receiving services from the DMC to the grassroots community was very poor. The interaction with some of the ICT services like Website, community information centers, video conferencing; electronic learning; electronic business and electric government was very poor as well as all electronic services, while the use of ICT such as computers; fixed line phone; Television; radio; fax machines, mobile phones, video, modem, mobile phones, and e-mail was very high.

4.2 Recommendations

Majority of the respondents argued that the optimum solution of enhancing the utilization of ICT services in service delivery to the grassroots community can be made through the installation of adequate ICT infrastructure and ICT technologies.

Therefore, in order for DMC to enhance the utilization of ICT services in service delivery to the grassroots community and vice versa, it must deploy effective combination of ICT technologies such technologies includes: - Web technology; electronic government (e-government) and Community Information Center at Ward level.

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