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Report on importance of MIS and GIS on local governance

E-Governance [CSC 366]

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Abstract

The objective of this paper is to argue for a new model of Geographic Information System (GIS) implementation and MIS, for supporting decision-making in local government as well as potential authorities . In this paper, we study the implementation of such systems and the benefit they provide. The study also tries to study the state of implementation and how such systems are functioning. We first defines the concept of implementation and role of GIS in local government as a base for further discussion. Special attention is given to analyze the variables that influence the employees' acceptance and use of the GIS in the work. The paper concludes that Web-based GIS and MIS, by combining GIS technology and Internet technology and MIS based web or application, can distribute GIS resources, MIS data and information and geo-processing tools and distributing data to a wider range of potential users. In addition, flexible user-oriented GIS and reliable Management Information System applications can best be developed with intensive user participation and feedback. One of the arguments proposed is that the Web-based GIS and MIS can be used to help the local government employees to provide better service for the public and improve the performance of a specific local government agency in processing land development permit applications.

Introduction

Management Information Systems (MIS) is the planned system for study of people, technology, organizations, and the relationships among them along with the collecting ,storing and disseminating data of management. MIS provides selected decision-oriented information needed by management to plan and evaluate the activities of the organization. The whole system is designed with the aim of enhancing profits, exercising better control and performance planning at all levels**.** Information systems are used at all the levels of a organization in order to collect, process or store data. However, this gathered information needs to be carried out in an efficient manner which actually helps in business growth. So, MIS professionals create information systems for data management. They manage the various information systems in such a way that it is able to meet the needs of management, staff as well as clients. MIS professionals play a critical role in areas of information security, integration as well as exchange.

A Geographic Information System (GIS) is a computer system that analyzes and displays geographically referenced information. It uses data that is attached to a unique location.Geographical Information System (GIS) is the backbone for development planning and management. Essentially it seeks to integrate a large range of space and non space information with respect to topography & other space information including- urban services, infrastructure and socio-economic information. With the help of satellite based map and digital information all the required information are integrated in the GIS based. This not only helps to unify but also enable updating information as and when required with ease and accuracy. This information can also be made available to the citizens through web based interface. This has specific importance in the context of slums and informal settlements where accurate representation of the ground scenario with that of the socio-economic conditions of the people is a necessity for planning inclusively.

Background of the study

In Recent Years, the information system is developing and use of the resources in different fields are increasing rapidly. For the management of the governmental data and the overall nation data such as Collecting Data, Processing Data, Information Storage, Information Retrieval and information propagation are used to be a challenging task for the governmental workers as well as for the citizen to understand the flow of the management and geographical information system. In terms of shaping state and local government process, workflow, policies and engagement with citizens the geographic information system helps to question how we can improve our environment, safety, economics, infrastructures etc. The study points and to analyze the system that manages the people resources, data resources, software resources, hardware resources and process. Which helps to crime analysis, law enforcement, and public safety and land records.

Problem of the study

Governments are facing the corruption, data inefficiency about the economics, state structure, resource allocation, law enforcement, public safety, geographical structure and the other management processes. Implementation of the information system helps in proper process but due to the lack of knowledge of the management and the geographical structure along with activity data of that particular state. The Management and Geographical Information System is poorly conducted to modernize operations, gain new perspective on the balance between natural and built environments, and create equitable and inclusive policies.

Objective

The Objective of this study is to clarify how the management and Geographical Information System helps in developing local governance. The key points that are being focused are:

1. Knowledge of the data collection, storage, retrieval and propagation

2. Crime Mapping

3. Management of public Transport and Works

4. Environments and Natural Resources

Research Questions

1. How local government utilize and manages the data of the citizen, environment and natural resources?

2. How is GIS different from using traditional, hand-drawn maps?

3. What are the local government key directives for the strategic directions of GIS?

Scope and Limitations of the Study

The scope of this study covers a detailed topographical survey of all identified open spaces, collection of attribute information, environmental checklist, collection of data on critical infrastructures around each identified open space and development of various maps. The scope also includes dissemination of the maps through both digital and hard copy platforms as well as installation of map boards at prominent locations within the Municipality. Further, the study promotes the preparation and use of open data for disaster preparedness as the datasets collected during the survey will also be uploaded to the national disaster information management system.

After understanding what is MIS and the nature of management, we move on to the scope of MIS. Information Systems is growing at a fast pace to become one of the most promising career fields in today's world. With everything happening digitally, the demand for MIS professionals is increasing more than ever. MIS involves performing a number of task simultaneously such as-

- Processing data

- Initiating transactions

- Responding to inquiries

- Producing reports and its summaries

- Manage the data created within the structure of a particular business

Significance of the study

This study helps to uncover the importance and benefits of MIS and GIS to local governance as well as to point out deficiencies in the implementation of such systems and any shortcomings. Thus, local government can be encouraged to set up department for it, or improve the existing one.

Related Work

Some Related work done in government along with business operation rely on the management and graphical information are:

1. Land-use planning

2. Subdivision review

3. Permit tracking

4. Parcel/tax mapping

5. Engineering design

6. Road and utility maintenance

7. Event (crime, fires, accidents)

8. Reporting

9. Emergency management

10. Infrastructure assessment and development

11. Cartography

12. Environment

13. Property management

Current Situation of E-Governance

E-Governance has been rapidly growing since the inception of the internet. Although, it has matured in the developed world, it is still in infancy state in countries like Nepal. The recent COVID-19 crisis has forced the government to swiftly implement E-Governance to plaster the absence of physical government. The use of websites, social media, apps, mobile phones in circulating information and providing governance has increased. There is a hope that the start of apps like the Nagarik app will help in to push the E-Governance to maturity.

Research and Methodology

As our topic stands for management and geographical information system, we utilize the internet as the quantitative methods (analysis on existing data).Our aim is to find how the local government utilize and manages the management and geographical information system.
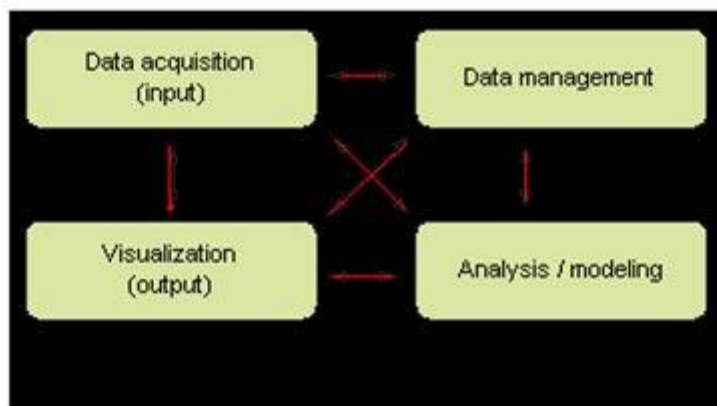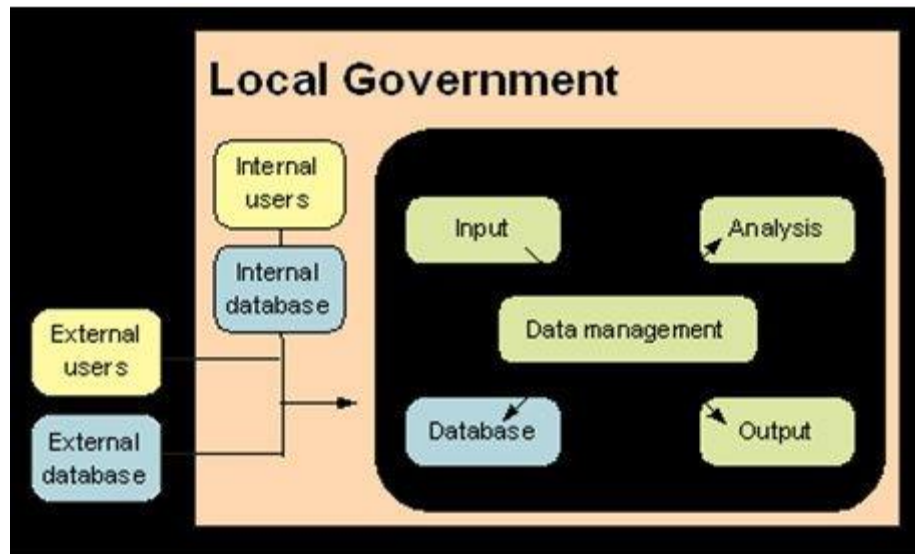
Quantitative methods

Existing Data:

1. we managed to find some useful information about the GIS in the website (https://www.geospatialworld.net/article/gis-is-an-important-tool-for-local-government/)

Qualitative methods

Existing data: AS a group, we observe the structure and the visual aid to understand the process flow used in management and geographical information system done in the local government.

Implementation

The implementation of MIS includes the census, vital registration, web based form to collect info about particular subject like vaccination, survey etc. These process can be effective and highly efficient if done through the electronic media as the population can involved with it at their selected time.

The implementation of GIS include the creation of maps with different layer, with each layer describing the particular condition based on the data collected by the goverment department. It can include layer for land topography, climate analogy, forest, rivers, hills, plains, plateau etc

Conclusion

Thus, the thorough study of MIS and GIS showed their usefulness in tackling the problems of a society based on its geography and population demographic. Those places where separate departments are set up for MIS and GIS has benefited from it. It has helped them to tackle natural disasters and other calamities, population problems such as ethnic diversity, unemployment, crimes like theft etc.

It is also found that not many local government uses the systems or have separate departments for it. Thus, an awareness and an educational program can be helpful to help them understand the benefit of it. Those places where the system are implemented also lack in efficiency, be it manpower, data adequacy etc. Thus, the local goverment needs to pay attention to it and maintain the department from time to time.

Lastly, public feedback is vital to improve the existing MIS and GIS process. The government routinely needs to conduct survey to know the public feedback and also add a method for public to provide their criticism when they desire to.

References

https://www.geospatialworld.net/article/gis-is-an-important-tool-for-local-government/