Designing Website Geographic Information System for Improving Brand Image of Geographic Company

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Abstract. The purpose of this paper is to design a Geographic Information System website as a media to improve and facility that is supported a company. The method used in this research was a descriptive method by making a description of the studied object systematically, factually and accurately about the facts, nature, the relationship among the phenomenon that exists today and system development method used is the method paradigm that is Waterfall. As well as collecting data from the journals related to the object of research and conduct interviews with the owners of the company. The results of this study obtained an information system that can improve the brand, and the application of geographic information system web strategy can be developed into something new as a media campaign of the organization and science broadly and deeply that can involve across the field of science.

1. Introduction

A geographic information system is a system that uses map data including configuration data which is then equipped with information about time and attribute data that is adapted to the attributes of the objects contained in the map data. [1]. Other definitions of geographic information systems (GISs) are computer systems composed of hardware, software, data, people, and organizations components, and serve to capture, store, question, analyze, and display data from geospatial (data depicting location and attribute of spatial features) [2]. According to Jones et al Geographic information system (GIS) and the techniques it provides users The geographic information system has a greater degree of flexibility, utility, and information, because the Geographic Information System (GIS) provides a markup language that can facilitate communication between servers and clients from GIS to interactively, and enable a number of Geographic information system (GIS) features, such as network links (time-based and / or display-dependent, dynamic data layers), ground overlays, screen overlays, placemarks, 3D models and elements Stylish GIS, such as geometry, icons, description balloons, polygons, and labels in the viewer where users can see the target area [3]. It is given that in the GIS methodology, it can learn the use to identify the location that best suits its needs such as transportation routes and distance [4]. The advantage of using Geographic Information Systems is that geographic information systems can be used as an invaluable tool in many industries because Geographic Information Systems can assist in making available data concepts and answer questions visually, and allow in the integration of key statistics and geographic data to perform an analysis which is more detailed [5]. This is evident from the research conducted by Li et al by using an axial and visibility graph analysis model combined with GIS and Space Syntax in studying the corresponding relationship between road networks and city life in Hankou,

China, found out that the community-scale road network has a positive role to protect the environment. Therefore, using the Axial and visible graphical analysis model combined with GIS and Space Syntax can formulate important strategies for maintaining the vitality of urban space [6]. Later studies conducted by Nicholson and Matter used a geographic information system (GIS) to determine the exposure of deer flea and the risk of contracting humans by Lyme disease, utilizing statewide data collected in Rhode Island (USA) as a test case. Thus, through the developed Geographic Information System model showing a strong relationship between Lyme disease in humans, blacklegged black lice rate, Ixodes scapularis Say, abundance in the environment, and the prevalence of borrelia Burgdorfer in ticks. Which can then create models that can predict the risk of transmission of Lyme disease, by combining geospatial modeling techniques to study the epidemiology of Lyme disease [7].

Likewise, research conducted by Hong et al using geographic information systems (GIS) to develop a GIS-based optimization model to estimate the generation of electricity from the roof PV system, so that in the final decision making can be done easily and accurately to estimate the power plant from the system PV roofing in a feasibility study [8]. Research conducted by Cetin et al to create GIS maps created from imported data, and the optimal comfort area around Aydin city is determined, to show the range of locations suitable for the bioclimatic comfort zone in Aydin [9]. From these various studies, it can be seen that with the "geographical information" present in the current era, the main intermediary in the two-way communication between the region and the map. This is due to maps and territories are basic features of scientific study, spatial planning, and public communication [10].

So, by looking at the benefits of using Geographic Information System that has been done in some industries, this research was conducted with the aim of designing Geographic Information System website which then used as media to improve and facilities supported by company, consist of GIS prototype application module websites such as main page with geospatial, document library, discussion board, location library, frequently asked questions, and surveys. The use of a webGIS base will assist in knowledge through business processes in GIS, how to use the app, or how to locate multiple locations, and with the WebGIS prototype application design then the whole can meet the needs of users in the Information System. However, it still requires continuous improvement for maximum use.

2. Method

2.1 Systems Approach Method and System Development Method
The approach method used in this research is structured design approach method that is equipped with tools and techniques needed in system development so that the end result of the developed system will be obtained a system with well-defined structure and clear. While System development method used is Waterfall paradigm method. In this method, there are 5 development stages for a software that will be designed. The compilation stage is structured from the top down, namely: Analysis, Design, Coding, Testing, Maintenance (See figure 1).
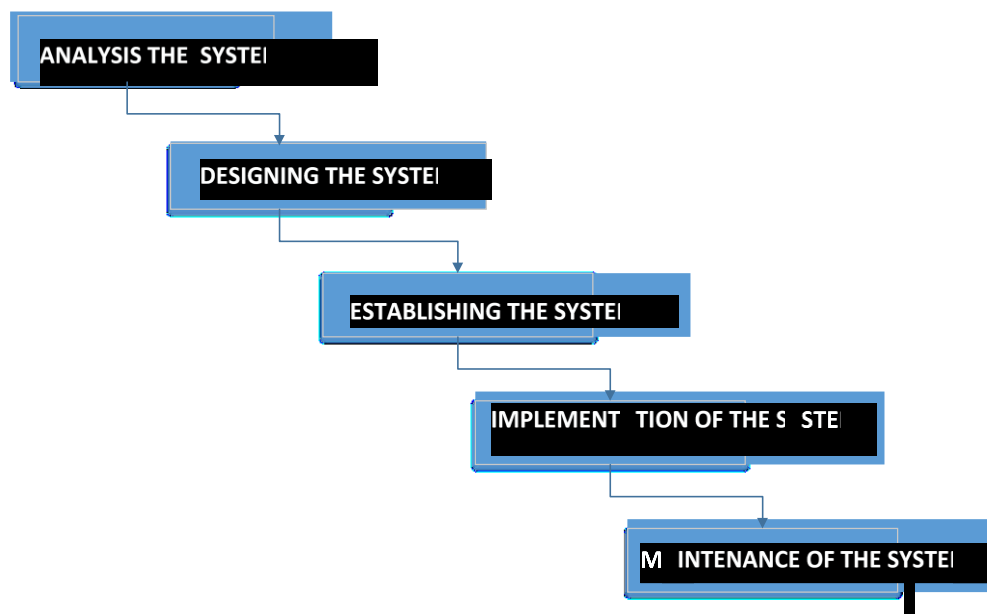
Figure 1. Waterfall Diagram.

3. Results and Discussion

3.1. Analysis of Current System
System analysis is a description of the system that is currently running and to study the existing system. System analysis is needed to describe the flow of information from related parts, both inside and outside the organization.

3.2. Document Analysis
Document analysis consists of function, source, distribution, duplicate amount, manufacturing period and data items. The following documents are used in the currently running system (See table 1).

Table 1. Documentation.

`1.	Name of Documents	Spatial Data
	Function	It is a document that contains geographic information
	Source	PT.Geo Maycom Pratama
	Distribu**tion**	Stakeholder (Private, Government)
	Multiple Amount	1
	Period	
	Item data	Raster, Vector.
2.	Name of Documents	Non-Spatial Data
	Function	Is a document that contains information about the tabular database
	Source	StakeHolder (Private, Government)
	Distribu**tion**	PT.Geo Maycom Pratama
	Multiple Amount	1
	Period	
	Item data	Shp,shx,Excel,Dwg

Table 1. Cont.

3.	Name of Documents	News
	Function	It is a document containing news information
	Source	Google
	Distribu**tion**	PT.Geo Maycom Pratama
	Multiple Amount	1
	Period	
	Item data	.PNG, Text

3.3. Analysis of Current Procedures
Procedures are precise sequences of instruction stages that explain what to do, who does it, when it's done, and how to do it. (See figure 2).
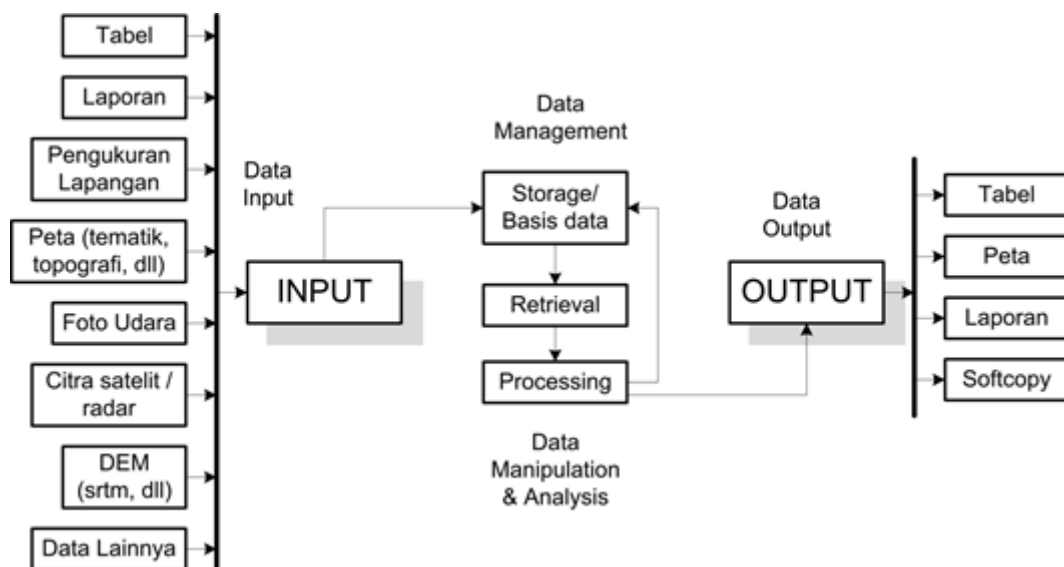

Figure 2. Procedure Analysis of Current SIG Process.

3.4. Spasial Analysis of Spatial and Non-Spatial Data Provision Procedures
Analysis of Spatial and Non-Spatial Data Provision Procedures, starting from the staffing section working on spatial and non-spatial data. Then the section head performs the QC and Bundle to report to the manager, the Manager performs QC and internal and external reports (the employer), and the Director receives the report and signs for the minutes of the job.

3.5. Current System Flow map
Flow map is a chart showing the overall workflow of the system. This flow map chart serves to explain the sequence of procedures in the system that describe the flow of data or documents from one entity to another (See the figure 3).
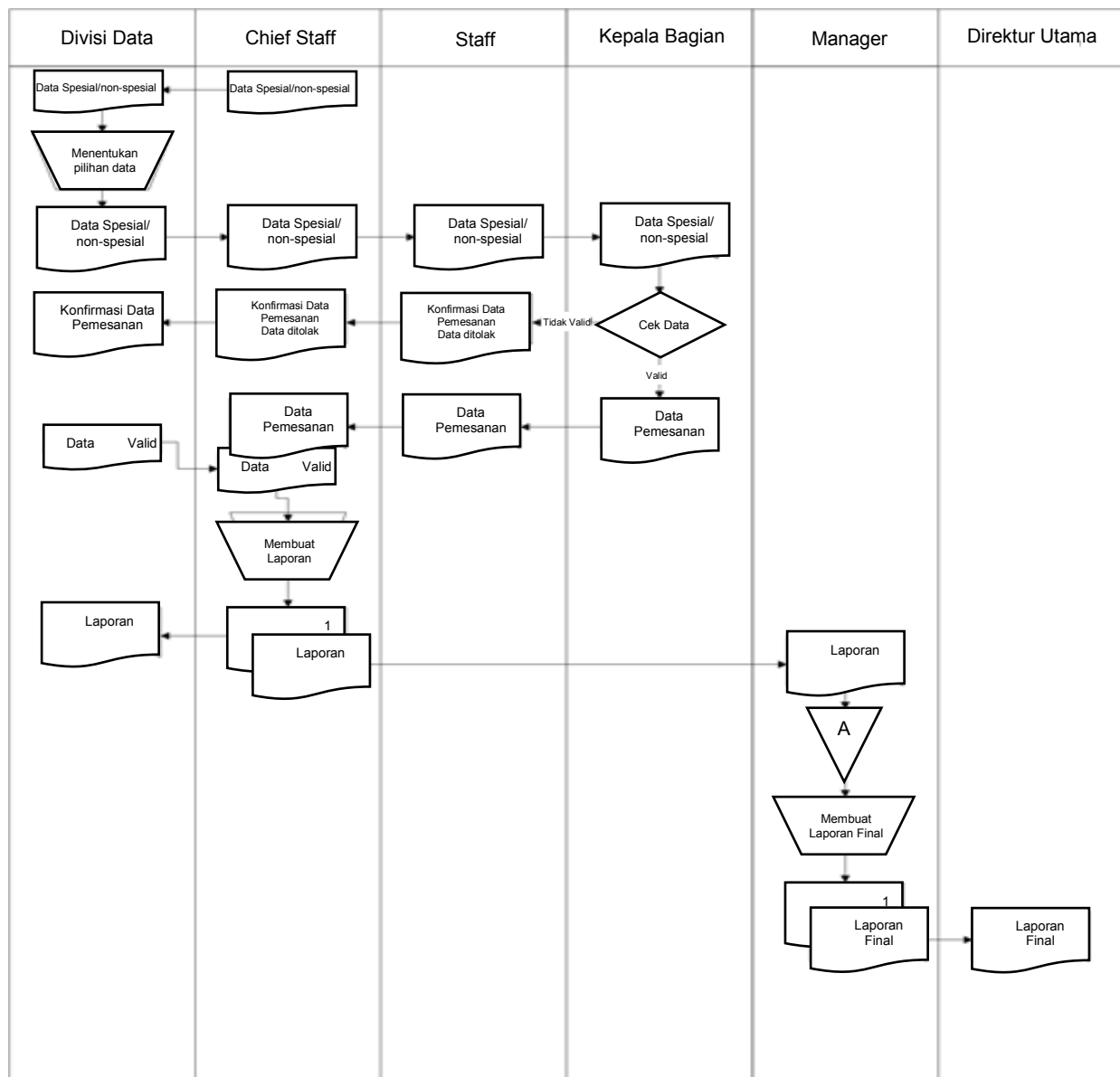
Figure 3. Flow map of running Geographic information system

Information:
A: Report

3.6. Evaluation of Current System
SystemGeographic Information System at the company still use the manual system in the recording of sales data hence can be concluded some deficiencies in the current procedure (Suppose table 2).

Table 2. Evaluation of Current System.

No	Problem	Worker	Problem Solving
1.	Spatial and non-spatial data processing processes are not well coordinated	Staff and chief staff	With the application of geographic information system based on this website is expected to facilitate the coordination.
2.	The Reporting process is as it is	Chief staff and head section and manager	With the application of this website-based sales information system, it is expected to help manager work, reports using applications that can use databases that can input, store and manage, such as PHP and MySQL programs.

4. Conclusion

Information Technology and Information Systems have a huge impact on modern human life today with which it allows flexibility with the support of other fields of geodesy and planology to make the flexibility had an accuracy that can be accounted for data, both spatial and non-spatial. The application of web strategy geographic information system can be developed into something new as a media promotion organization or science broadly and deeply involving cross-discipline of science.

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