

SWOT Analysis of the Regional Development Strategy City Field Services for Clean Water Needs

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Abstract

The need for clean water from year to year due to increasing population and increasing quality of life and urban activities are growing rapidly. Clean water is initially considered social goods that are free to be the stuff needed to get economic costs. Along with population growth and increased economic activity. The purpose of this study is to formulate a model of water services development strategy that is optimal in order to improve the water needs of different customers in the city of Medan.

The data used in the study was obtained from the primary relevant agencies and the public in the city of Medan. Primary data were collected by 30 respondents. The analysis model used is a SWOT analysis.

The results showed that the model of development of water management strategies to future aggressive human resources and cooperation of improving water management in order to meet consumer needs for clean water in the future.

Keywords: Regional Development, Water Supply, Water Demand and SWOT

JEL: M150, Q53

Introduction

Medan as one of the cities with the status of an autonomous region in the province of North Sumatra, Medan which became a strategic place in the region. The implementation of regional autonomy demands Medan city governance more advanced and modern in creating a better quality of public service, fast, easy, fair, and without discrimination for the greatest welfare of the people and the progress of the city of Medan.

Based on the description of the characteristics of the region, the city of Medan can be identified as an area that has the potential to be developed as a center of the region's economy and a major regional importance as well as on the island of Sumatra. Medan has the position, function and role and strategic importance as the main gateway for trade in goods and services activities of domestic finance, and regional and international in the western

region of Indonesia with the support of the dominant factors has. The desire to make the city of Medan as services, trade and industry regional and national scale is supported by several factors, among others: (1) amounted to 60.8% of the banking industry chose the location in the city of Medan, (2) amounted to 84.8% of bank credit absorbed by the city's economic activity, (3) the business industry continues to grow, which to date has reached 5,596 businesses, both large-scale enterprises, medium and small, (4) the availability of industrial areas, (5) the development of shopping centers, shops, offices, new towns, hospitality, hawker centers, etc., and (6) the economic structure of the city is formed until the moment that tends to be strong in fundamentals (Medan in Figures, 2011).

Spatial characteristics of Medan create economic potential based service sector, trade and restaurants are also influenced by the pattern of development of Medan were characterized by increased trading centers are large-scale, building hotels and restaurants, as well as the transportation and telecommunications industries. One of the challenges that need to be faced in the future by providing a range of facilities and amenities for the community, one of which is how to provide water that can accommodate the needs of additional economic activity in the city of Medan increasing the number and density of population. The need for clean water from year to year as well as the population increases and increased quality of life and urban activities are also growing rapidly. Clean water is initially considered social goods that are free to be the stuff needed to get economic costs. Along with population growth and increased economic activities such as industry growth both small and large scale, the development of public facilities, increasing the welfare of the community, the needs of residents of the city of Medan on clean water is increasing as well.

Problem

Various problems faced by water companies today, such as: the need for clean water continues to increase in line with the increase in population as a result has not been able to fulfill the needs of the community clean drinking water both in quantity and quality, the impact on the regional development and the provision of clean water needs as well as needs be formulate an alternative model of water management services as a management company and provider of clean water in the city of Medan without sacrificing customer service to clean water.

Literature

Planning Area

There are many definitions of planning, which looks different between the textbook with other textbooks. The difference between the definitions contained textbook primarily on one branch of science with textbooks in other branches of science. However, in any one branch of science there is a difference between the definitions of a writer with other writers. This difference is due to differing viewpoints, the focus of attention differences, and differences in the extent of the field covered by the planning itself. Simple definition of that planning is to set a goal and choose the steps needed to achieve those goals. Definition it is suitable for simple planning that goal can be set up easily and there is no significant limiting factor to achieve these goals.

Another sense, planning is setting a goal after observing internal divider and external influence, choose, and sets out the steps to achieve that goal. In this definition made the assumption that the limiting both internal and external influences can be anticipated from the beginning.

But then the above definition concerns the meaning of the planning itself but has not touched the area element. In order for the planning of the regional planning must be coupled with elements of the region. Regional planning is knowing and analyzing current conditions, forecast the development of various relevant factors are not controlled, estimate the limiting factors, establish goals and objectives are expected to be achieved, sets out the steps to achieve those goals, and to determine the location of the various activities that will be implemented to achieve the goals or objectives (Tarin, 2004).

According Miraza (2005) that regional planning is a long-term planning, gradual, and composed with a clear goal area. Clear objectives that are related to the overall interests of stakeholders, both public from various layers, groups of employers and the government itself. Regional planning concerns on how to use the potential of the region, both the potential of natural and artificial potential, must be implemented fully and efficiently in order to use the potential is really impacted on the welfare of society as a maximum.

Regional Development

Development of the region in the long term with more emphasis on the introduction of natural resources and the potential for local development area can support (generating) economic growth, and social welfare of the community, including poverty alleviation, as well as efforts to overcome the obstacles existing development in the area in order to achieve development goals. In this regard, it is in the national development plan, the development of the region with more emphasis on the preparation of integrated regional development package to identify strategic sectors (potential) need to be developed in an area (Friedmann & Allonso, 1964).

According to Walter Isard as a pioneer of the science that examines the development of the region causal relationship of the main factors, namely the formation of spatial physical factors, socio-economic and cultural.

Hirschman (1958) argued that the effect is known as forward linkage and backward. Forward linkages to encourage investment decisions in the sector or industry that utilizes a specific output for the next production process. This can lower the cost of production in the downstream industry through external economies. Backward linkages in the sector to encourage investment decisions that provide input. Improved linkages between sectors or between industries which further stimulate increased investment driven demand for input is the output of a particular sector or industry that eventually boost economic growth. This is known as the theory of polarization effects and the trickling down effect with the argument that the development of an area does not occur simultaneously.

Myrdal (1960) with theories that explain the relationship between the forward region of the hind region using the term backwash effects and spread effects.

Friedmann (1960) which emphasizes on the establishment of a hierarchy or level of development in order to facilitate the development of the system that became known as the center of new growth theory. This means that the development of the region need to develop new growth centers and new growth centers are inter-related with the growth of existing centers within the region.

Douglass (1970) introduces a model of the birth of linkages between rural and urban or rural urban linkages in a developing region, with villages and city hopes to have a mutually beneficial relationship or a win-win solution that is generative relationship, not the other way that is not mutually beneficial relationship that is parasite relationship.

Science of regional development is the integration of various theories and applied science, namely, geography, economics, sociology, mathematics, statistics, political science, regional planning, environmental science, and so on (Budiharsono; 2005)

Methods

The population in this research that the customer PDAM Medan, where the total population of the stakeholder is not known with certainty then used nonprobability sampling techniques are sampling one of them by way of purposive sampling. The amount of sample in the formulation of water management models are as many as 30 people, it is in accordance with the opinion of the Sugiyono Roscoe (2006) a decent sample size in a study of at least 30 people.

SWOT analysis using the SWOT matrix analysis to generate strategies. This matrix shows the opportunities and threats as well as strengths and weaknesses. SWOT matrix are based on the logic that can maximize the strengths and opportunities as well as to minimize weaknesses and threats. Therefore, we will know how the strategy of development of water services in the city of Medan.

The steps of making a SWOT matrix:

1. Gather the information that aims to determine the development of water services in the area of research.
2. Know the factors that influence the development of water services in the city of Medan.
3. Having obtained the factors that influence the development of water services in the city of Medan, then selected factors more strategic or dominant in influencing the development of water services in the city of Medan. Factors - the most dominant factor is obtained through a review of the field directly to the sample using questionnaires and interviews.

Once known factors - strategic factors, then these factors are classified into two parts:

- a. Internal factors, ie factors that can be controlled by the water services in the city of Medan.
 - b. External factors, ie factors that can not be controlled by the water services in the city of Medan.
4. Once the factors the internal and external classification, then prepare a questionnaire to determine the score (rating) of each factor.
 5. The score determines whether these factors are internal factors (strengths and weaknesses) or external factors (opportunities and threats).
 6. After the scores obtained for each factor, and then be weighted within each factor. According Rangkuti (2005), mathematically weighting can be done using the following formula:

$$\text{Weighting} = \frac{\text{X Total Weight Rating}}{\text{total Rating}}$$

7. Having obtained the strategic weight of each factor, and then performed an evaluation matrix of water services development strategy in Medan by multiplying the score with weights obtained from each factors to obtain a weighted score results. Weighted scores obtained values to determine how the development of water services in the city of Medan on strategic factors external and internal strategic factors.

Then performed the preparation of strategic factors by using the SWOT matrix, which resulted in four sets of possible strategic alternatives, namely SO strategy, ST strategy, strategy WO and WT strategies.

SWOT Analysis Determination of Development Strategy of Water Management in Medan

Next step is the evaluation matrix development strategies of water management strategies to compute multiplication between the scores and the weights on the internal factors which aims to obtain a weighted score value. Multiplication of the weights and scores on internal factors in the development of water management strategies in Medan are presented in Table 1

Table 1
Matrix of Strategic Internal Factors Evaluation

No	Strategic Internal Factors	Weight	Score	Score X Weight
strength:				
1	The ability of HR has good views of the educational aspects	0,153	3,57	0,544
2	The presence of co-operation with some of the Company's clean water and other institutions	0,154	3,60	0,554
3	Easy chemicals obtained in the local market so as to facilitate the production process	0,136	3,17	0,430
4	The quality of treated water production improved	0,148	3,47	0,515
weaknesses:				
1	Loss of water due to leaking pipes can not be accurately quantified	0,094	2,20	0,207
2	The technology used in Water Treatment Plant is relatively old and less efficient operations associated with future as well as the technology continues to evolve	0,107	2,50	0,267
3	Composition of the number of subscribers is still quite large subsidized	0,101	2,37	0,240
4	Composition of the center and the branch number of employees has not proposonal based on education and experience	0,107	2,50	0,267
	Total	1,000	23.38	-

Source: Primary Data, Processed, 2014

The results of the weighting factor is the highest internal HR capability has good views of the educational aspects (strength) with a weighted score of 0.544 and the cooperation with some of the Company's clean water and other institutions (strength) with a weighted score of 0.554. The analysis showed that the influence of the most dominant internal factors occur in both human resource capabilities already seen from the aspect of education. The ability of human resources and the cooperation with some of the water company and other institutions in accordance with the development of clean water sources, so as to improve the water supply in the city of Medan. The ability of human resources is one contributing factor in the success of the water supply. Water supply activities without adequate human resources will be very difficult to develop a good supply of water quantity and quality aspects. Multiplication is then

performed between the scores and weights on external factors which aims to obtain the results of the weighted scores. Multiplication between weight and external factors scores are presented in Table 2

Table 2.
Matrix Strategic Evaluation of External Factors

No	Strategic External Factors	Weight	Score	Score x weight
	Opportunities:			
1	The number of people or households increased	0,142	3,50	0,496
2	The growth of the settlement or business property increased	0,140	3,47	0,487
3	The need for clean water continues to increase	0,134	3,30	0,441
4	Having access to adopt water management technologies and wastewater through cooperation with other institutions.	0,117	2,90	0,340
	Threats:			
1	The attitude of the people who still lack of clean water information	0,104	2,57	0,267
2	The existence of consumer protection laws that make people become increasingly critical of the quality of services in accordance with the standard	0,130	3,20	0,414
3	Access to clean water with other sources by the community increasing	0,128	3,17	0,407
4	The low fees charged to local government agencies as well as the lack of control on ground water users illegally by relevant agencies.	0,105	2,60	0,274
	Total	1,000	24,71	-

Source: Primary Data, Processed, 2014

The results of the external factors weighting the highest number of people or households are increasing (opportunity) and the low fees charged to local government agencies as well as lack of control on ground water users illegally by relevant agencies (threat). The analysis showed that the influence of external factors the most dominant is the number of people or households continues to increase with the weighted score of 0.496. The growth of the settlement or the property business opportunities for manufacturers rose to the addition of water to clean water. The settlement of the growth factor or increased property business is an opportunity that can be achieved. The presence of increased consumer to consume water in Medan with a weighted score of 0.485 is an opportunity for water providers. Furthermore, the merger between strategic factors internal and external strategic factors are presented in Table 3 and Table 4

Table 3
Gabungan Matriks Evaluasi Faktor Strategis Internal dan Eksternal

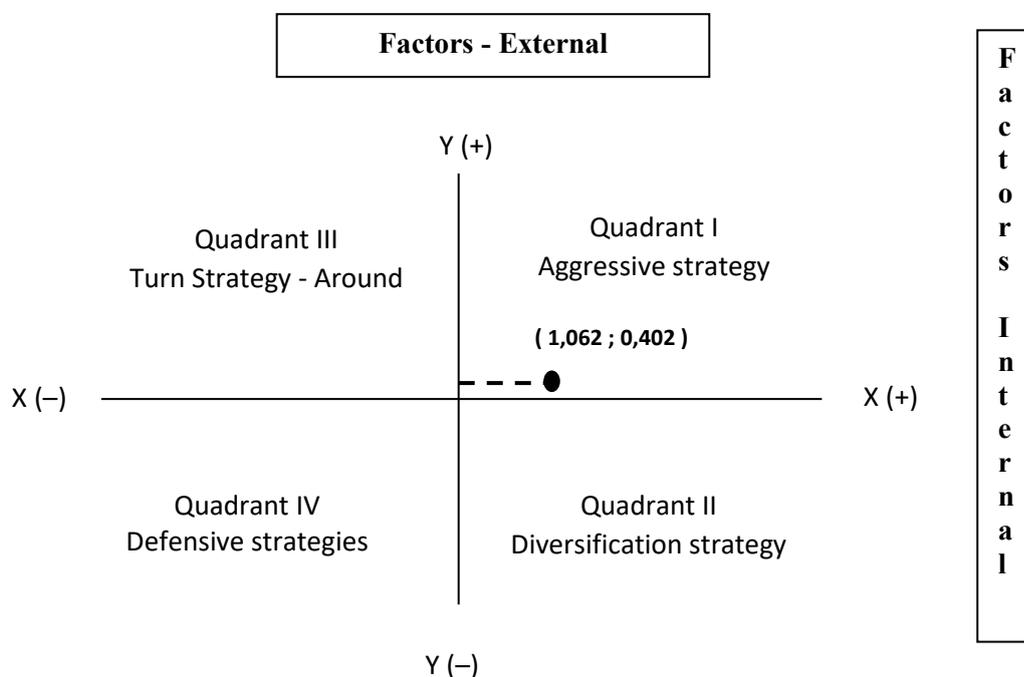
No	Strategic internal factors	Weight	Score	Score X Weight
	Strength:			

1	The ability of HR has good views of the educational aspects	0,153	3,57	0,544
2	The presence of co-operation with some of the Company's clean water and other institutions	0,154	3,60	0,554
3	Easy raw materials obtained in the local market so as to facilitate the production process	0,136	3,17	0,430
4	The quality of treated water production improved	0,148	3,47	0,515
	Total Score Strength			2.043
	weaknesses:			
1	Loss of water due to leaking pipes can not be accurately quantified	0,094	2,20	0,207
2	The technology used in Water Treatment Plant is relatively old and less efficient operations associated with future as well as the technology continues to evolve	0,107	2,50	0,267
3	Composition of the number of subscribers is still quite large subsidized	0,101	2,37	0,240
4	Composition of the center and the branch number of employees has not proposonal based on education and experience..	0,107	2,50	0,267
	Total Score Weakness			0.981
	Difference Strengths - Weaknesses			1,062
	Factors - External Strategic Factors			
	opportunities:			
1	The number of people or households increased	0,142	3,50	0,496
2	The growth of the settlement or business property increased	0,140	3,47	0,487
3	The need for clean water continues to increase	0,134	3,30	0,441
4	Having access to adopt water management technologies and wastewater through cooperation with other institutions.	0,117	2,90	0,340
	Total Score Opportunities			1,764
	threats:			
1	The attitude of the people who still lack of clean water information	0,104	2,57	0,267
2	The existence of consumer protection laws that make people become increasingly critical of the quality of services in accordance with the standard	0,130	3,20	0,414
3	Access to clean water with other sources by the community increasing	0,128	3,17	0,407
4	The low fees charged to local government agencies as well as the lack of control on ground water users illegally by relevant agencies.	0,105	2,60	0,274
	Total Threat Score			1,362
	Difference Opportunities - Threats			0.402

Source: Primary Data, Processed, 2014

Table 3 shows that the difference in internal strategic factors (strengths-weaknesses) of 1.062, meaning that the effect is greater than the strength of the influence of weakness in the development of water management in the city of Medan. And the difference between external factors (opportunities-threats) of 0.402, meaning that the effect of greater opportunities than threats influence in the development of water management in the city of Medan.

Based on the evaluation matrix incorporation of internal and external factors, it can be seen the position of the development strategies of water management in the city of Medan. The position of the development strategy is analyzed using matrix position, so it will produce the coordinates (x, y). The value of x is obtained from the difference between internal factors (strengths-weaknesses) and the value of y is obtained from the difference between external factors (opportunities-threats). The position of point coordinates in a Cartesian coordinate can be seen in Picture 1



Picture 1. Position Matrix Development Strategy of Water Management in Medan

Picture 1 shows the value of $x > 0$ is 1.062 and the value of $y > 0$ is 0.402. This means that the position of the development strategies of water management in the city of Medan is in quadrant I, which indicates a strong manager and opportunity. Recommendations given strategy is Aggressive Strategy, means the manager of clean water in prime condition and steady so it is possible to continue to expand, increase growth, and achieve maximum progress by leveraging existing strengths and opportunities.

Strength in the management of clean water that is already good human resource capacity and the cooperation with other parties to make water management in Medan is a good supply of clean water in the future. And opportunities that can be exploited, namely the number of people or households are on the rise and growth of the settlement or business property in the city of Medan resulted in increased water demand will increase in the future.

Table 4

Determination of Development Strategy of Water Management Alternatives in Medan

<p style="text-align: center;">Strategic Internal Factors</p> <p style="text-align: center;">Strategic External Factors</p>	<p>Strengths (S)</p> <ol style="list-style-type: none"> 1. The ability of human resources has been well seen from the aspect of education 2. The existence of co-operation with some of the Company's clean water and other institutions 3. Easy raw materials obtained in the local market so as to facilitate the production process 4. Improved quality of treated water production 	<p>Weakness (W)</p> <ol style="list-style-type: none"> 1. Loss of water due to leaking pipes can not be accurately quantified 2. The technology used in Water Treatment Plant is relatively old and less efficient operations associated with future as well as the technology continues to evolve. 3. Composition of the number of customers that are subsidized are still quite large. 4. Composition of the center and the branch number of employees has not proposonal based on education and experience.
<p>Opportunities (O)</p> <ol style="list-style-type: none"> 1. The number of people or households continues to increase. 2. The growth of the settlement or business property increased. 3. The need for clean water continues to rise. 4. Have Access to adopt water management technologies and wastewater through cooperation with other institutions. 	<p>SO Strategies:</p> <ol style="list-style-type: none"> 1. Improve human resources in order to meet the needs of water consumers (S1, O1, O2). 2. Enhancing cooperation in water management in order to meet the needs of water consumers (S2, O1, O2). 3. Improving the availability and quality of water as a result of the availability of raw materials and appropriate technology in water management (S3, S4, O4) 	<p>WO Strategies :</p> <ol style="list-style-type: none"> 1. Improve the customer by way of extending and expanding customer access networks for customers (W2, O1, O2). 2. Increase the supply of water by reducing leakage of water (W1, W2, O3). 3. Improving water management technologies and reduce the number of customers that are subsidized in order to improve employee performance (W3, W4, O4).

Threats (T)	ST Strategies:	WT Strategies:
<ol style="list-style-type: none"> 1. The attitude of the people who still lack of clean water information. 2. The existence of consumer protection laws that make people become increasingly critical of the quality of services in accordance with the standard. 3. Access to clean water with other sources by the community is increasing. 4. Low fees charged to local government agencies as well as lack of control on ground water users illegally by relevant agencies. 	<ol style="list-style-type: none"> 1. Increasing awareness by increasing socialization of clean water (S1, T1, T3). 2. increases scrutiny in the use of water in order to achieve the quantity and quality of water (S4, T3, T4). 3. Establish inter-agency cooperation in expanding the clean water (S1, S2, T3). 	<ol style="list-style-type: none"> 1. Increase the role of government and employees in accordance with the implementation of socialization and access to clean water use (W3, W4, T1, T2). 2. Increase the education budget in order to increase human resources to achieve a good quality of service (W3, W4, T2). 3. Improving the quality of water in order to meet consumer Act (W2, T2).

Source: Primary Data, Processed, 2014

SO strategies

Strategies implemented in the development of water management in the city of Medan by analyzing the strength of the opportunities are:

1. Improve human resources in order to meet the needs of water consumers (S1, O1, O2).
2. Enhancing cooperation in water management in order to meet the needs of water consumers (S2, O1, O2).
3. Improving the availability and quality of water as a result of the availability of raw materials and appropriate technology in water management (S3, S4, O4)

WO strategies

Strategies implemented in the development of water management in the city of Medan by analyzing the weaknesses of the opportunities are:

1. Improve the customer by way of extending and expanding customer access networks for customers (W2, O1, O2).
2. Increase the supply of water by reducing leakage of water (W1, W2, O3).
3. Improving water management technologies and reduce the number of customers that are subsidized in order to improve employee performance (W3, W4, O4).

ST strategies

Strategies implemented in the development of water management in the city of Medan by analyzing the strength of the threat are:

1. Increasing awareness by increasing socialization of clean water (S1, T1, T3).

2. Increasing scrutiny in the use of water in order to achieve the quantity and quality of water (S4, T3, T4).
3. Establish inter-agency cooperation in expanding the clean water (S1, S2, T3).

WT strategies

Strategies implemented in the development of water management in the city of Medan by analyzing the weakness of the threat are:

1. Increase the role of government and employees in accordance with the implementation of socialization and access to clean water use (W3, W4, T1, T2).
2. Increase the education budget in order to increase human resources to achieve a good quality of service (W3, W4, T2).
3. Improving the quality of water in order to meet consumer Act (W2, T2).

Conclusion

Residential and industrial development plan will result in an increased need for clean water. This is an opportunity for water treatment agency for regional development of water services to the area. The strategy is conducted in improving the supply of water is the aggressive strategy, meaning that the water management in prime condition and steady so it is possible to continue to expand, increase growth, and achieve maximum progress by leveraging existing strengths and opportunities. Strength in the management of clean water that is already good human resource capacity and the cooperation with other parties to make water management in Medan is a good supply of clean water in the future. And opportunities that can be exploited, namely the number of people or households are on the rise and growth of the settlement or business property in the city of Medan resulted in increased water demand will increase in the future.

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