

Problems with the earlier algorithm :

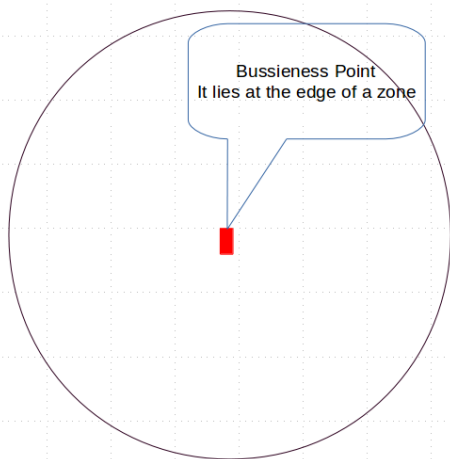
1) If the user location (the location of the users business point which he/she wants to advertise) was towards the corner of the zone , then he will miss out most of his target customers as the advertisement will be displayed in the only 1 zone , while most his target customers are in the other zone .

2) Ambiguity in demarcation of zones.

Algorithm :

1) We divide the required map automatically into small zones (lets say 1Km X 1Km , size can be adjusted as per the requirements).

2) Lets assume user 'A' wants to advertise. For the best result we will want to display his advertisement in a circle radius R (lets say $R = 5\text{Km}$, can be changed as per your requirements) centered at his business point 'B' .



The 5 Km radius around the business point will span across multiple Zones.

3.1) (See image attached for more clarity) The circle centered at B will span across multiple zones. Lets assume for now that the customer has bought 1 bundle (assuming 1 bundle = 100 devices) .

3.2) For any given zone 'Z' , lets say the area of the circle that lies inside that zone be 'x' . Let the total area of the circle be 'X'.

3.3) Now we will allot to that customer x/X bundle in that zone. eg 0.57 bundle will mean that A get his advertisement displayed on 57 devices ($0.57 \text{ bundle} = 0.57 * 100 \text{ devices} = 57 \text{ devices}$) in that particular zone.

4) The customer still will buy $\{1, 2, \dots, N\}$ bundles. All this calculation will be internal and automated.

How does this solve the problems of the previous version :

1) Since now for each customer , the advertising area is not limited to single zone rather in each zone his advertisement gets displayed on a particular number of devices depending on the priority of that zone for the customer (based on the calculation discussed above) , the loss for the customer is minimal.

2) The division of the map will be automated.

Extended Advantages :

1) Flexibility in setting price :

Since the zone size is small , it gives you flexibility to set different prices around different zones. Like for prime locations like Malls or Movie Theaters you can easily set higher prices.

2)Flexibility to tap revenue due to specific events :

This gives you flexibility to change price of a particular zone if there is some special event that is going to happen in that area.

3)Ability to change price for different area according to time :

eg: The areas populated with IT offices will have much heigher viewership during daytime and thus the price can be set accordingly.This all will allow you to maximise your profit and give alot of flexibility in taking decision , set pricing for each area. From the customer point of view, his advertisement gets displayed in the area he wanted,also he pays according to the area where he wish to advertise,implying he will pay heigher ammount for prime locations and a lower amount for areas that have less target audience.