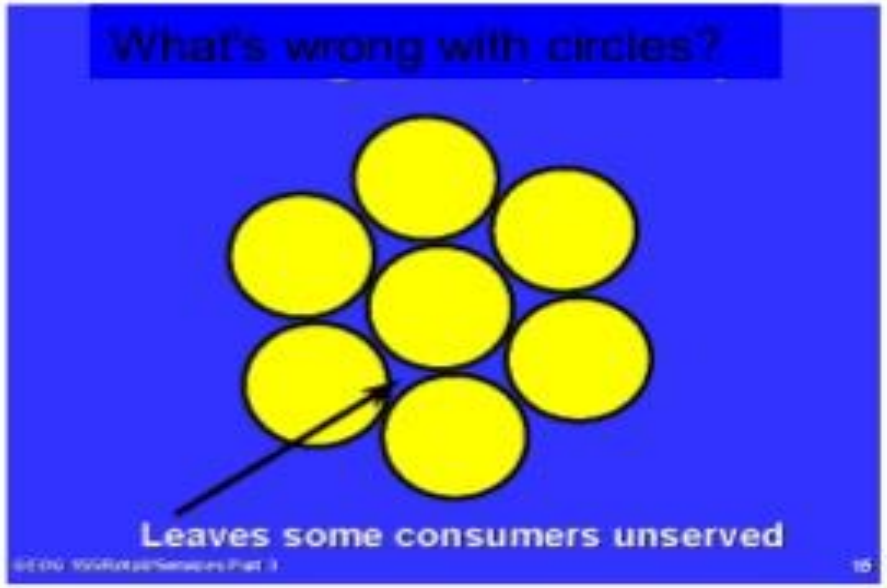
SETTLEMENT GEOGRAPHY

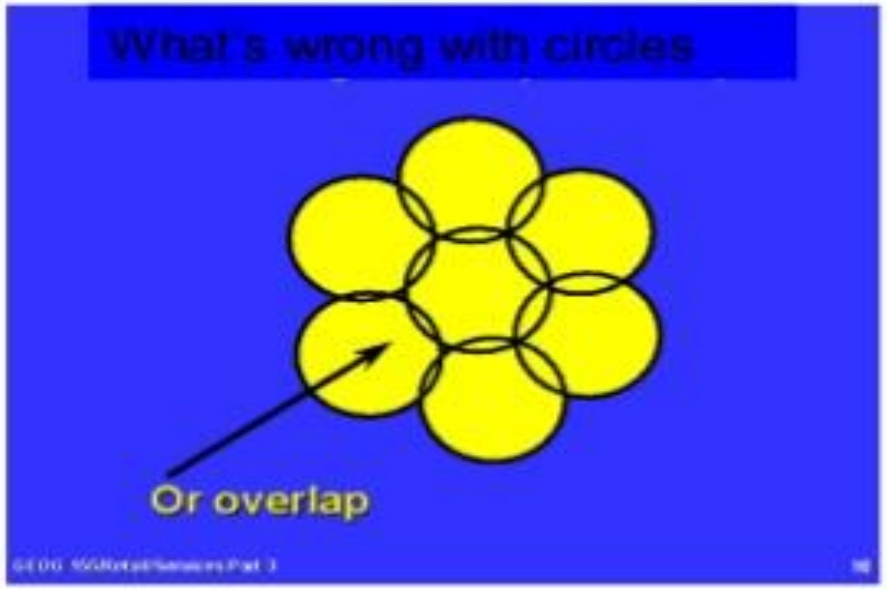
Central place theory

- **Central Place Theory** was given by **Walter Christaller** in **1933**, which is one of the most appreciated theories that tries to explain the spatial arrangements and distribution of human settlements and their number based on population and distance from another human settlement.
- Christaller submitted his dissertation on ***"The Structure of Settlements in the Southern Germany"*** in 1932 to the University of Erlangen in 1932.
- His work was published in 1933. He found that in spite of the even distribution of settlements one may find a regular pattern in them, There is some sort of relationship between distribution, size and number of settlements and on the basis of this relationship he called these laws as ***'spatial economic geographical laws'*** or ***'the laws of geography of settlements'***.
- His theory was based on the study of settlement patterns in southern Germany made by Christaller. This study included the analysing the relationships between settlements of different sizes and related their economic activities (market) with the population.
- Central place theory explains.
- Relationship between the size, the number and the geographic distribution of cities.
- Central place has the main function to supply goods and services to the surrounding population (Market Area)
- Based on concept of Range (it is economic, not mathematical)

Walter Christaller's Model of Central Places

- the theory states that threshold and range act as laws that govern the number, size and distribution of settlements.
- When these 2 factors act together they create a hierarchical landscape.
- Christaller noticed in the flat land of south Germany that towns of a certain size were roughly equidistant (uniformly spread).
- He stated that the ideal shape for each towns sphere of influence should be a hexagon because circles either leave gaps(which are unserved by any central place) or they overlap(meaning one area is served by too many central places).


What's wrong with circles?
Leaves some consumers unserved


What's wrong with circles
Or overlap

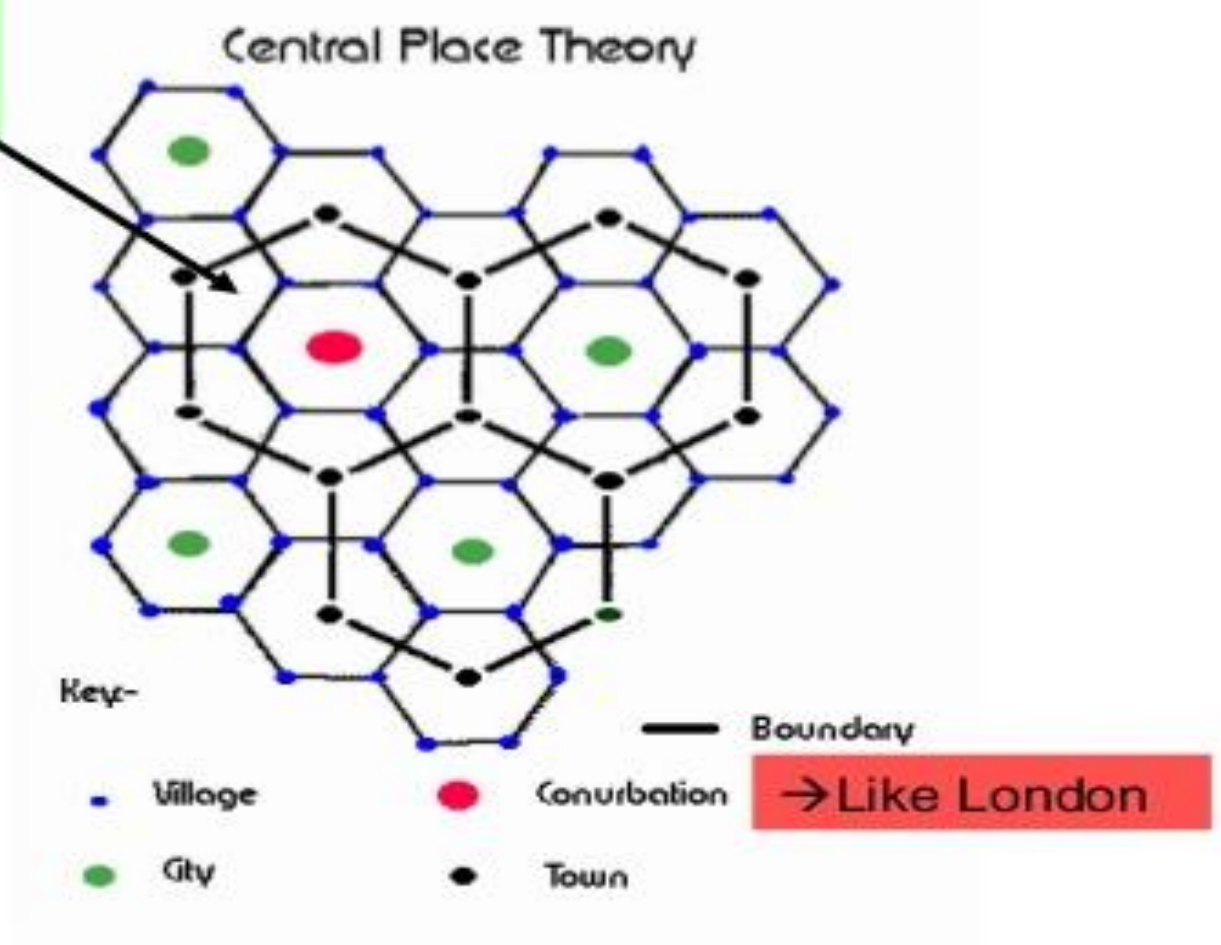
Christaller's central place theory

- Christaller stated that the best shape for a sphere of influence is a hexagon. This shape means that consumers still have accessibility to the highest order central place and its trading area from all parts of the hexagon.
- Christaller's key idea was that **customers would go to the nearest higher order central place to buy goods and services**
- High order central places act like a magnet for consumers.
- He called this phenomenon K=3 (or the marketing principle)

- In order to make his theory work Christaller had to make a few assumptions

- **He assumed that each trading area had an isotropic surface (that the whole area was the same all over) i.e.**
- **→ the whole area was flat**
- **→ there was only 1 form of transport (and transport costs were proportional to distance)**
- **→ the population was distributed evenly across the plain**

The areas within the black dots shows the sphere of influence (trading area) of the largest settlements



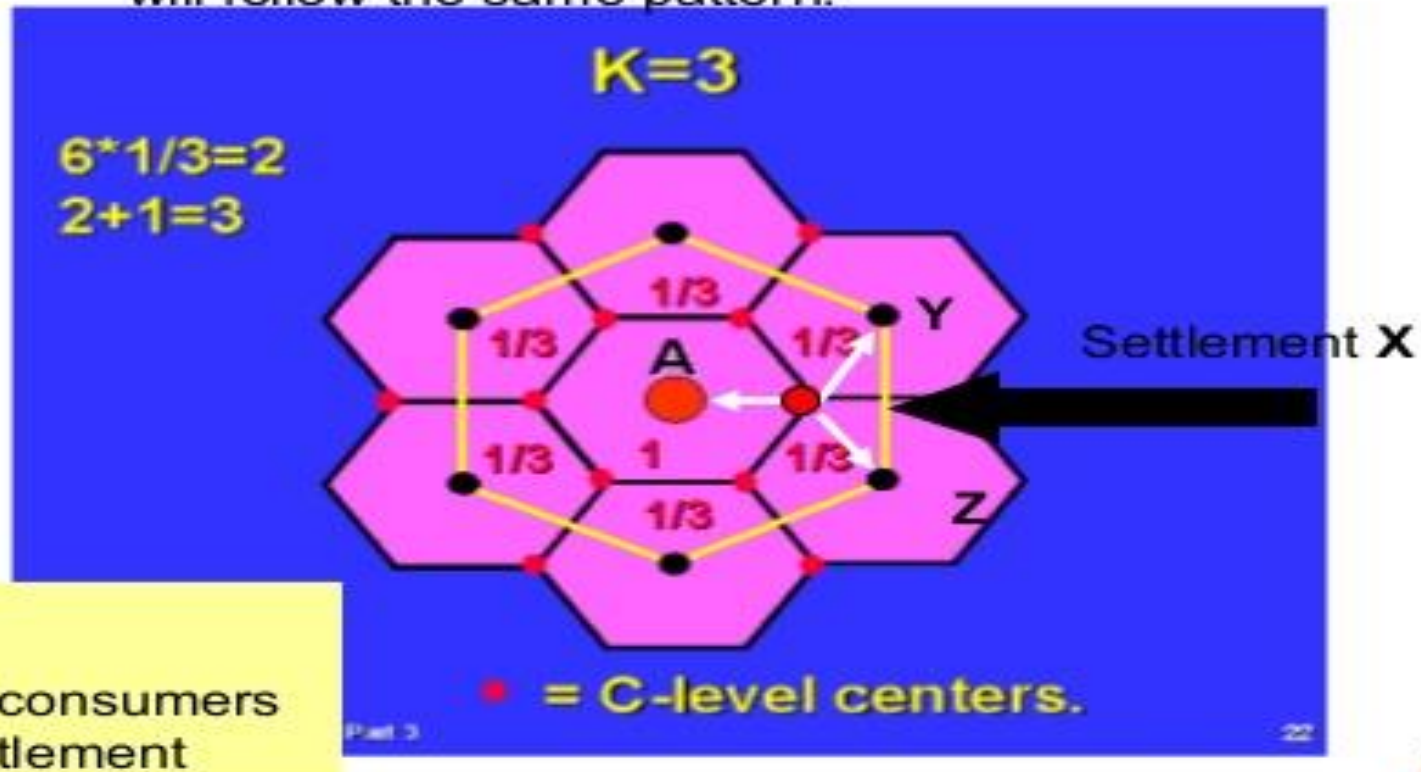
→Like London

K=3 The marketing principle

The high order (3rd order) settlement (A) in the middle is surrounded by medium order settlements (black dots) and lower order settlements (small red dots). **These consumers are attracted in equal amounts to whichever large central place is nearby.**

Example -the highlighted lower order settlement (village X) will have 1/3 of is consumers go to the city (settlement A) and 1/3 will go to town Y and 1/3 will go to town Z (middle order settlements)

All the other lower order settlements (red dots) will follow the same pattern.



Why is K=3 called K=3?

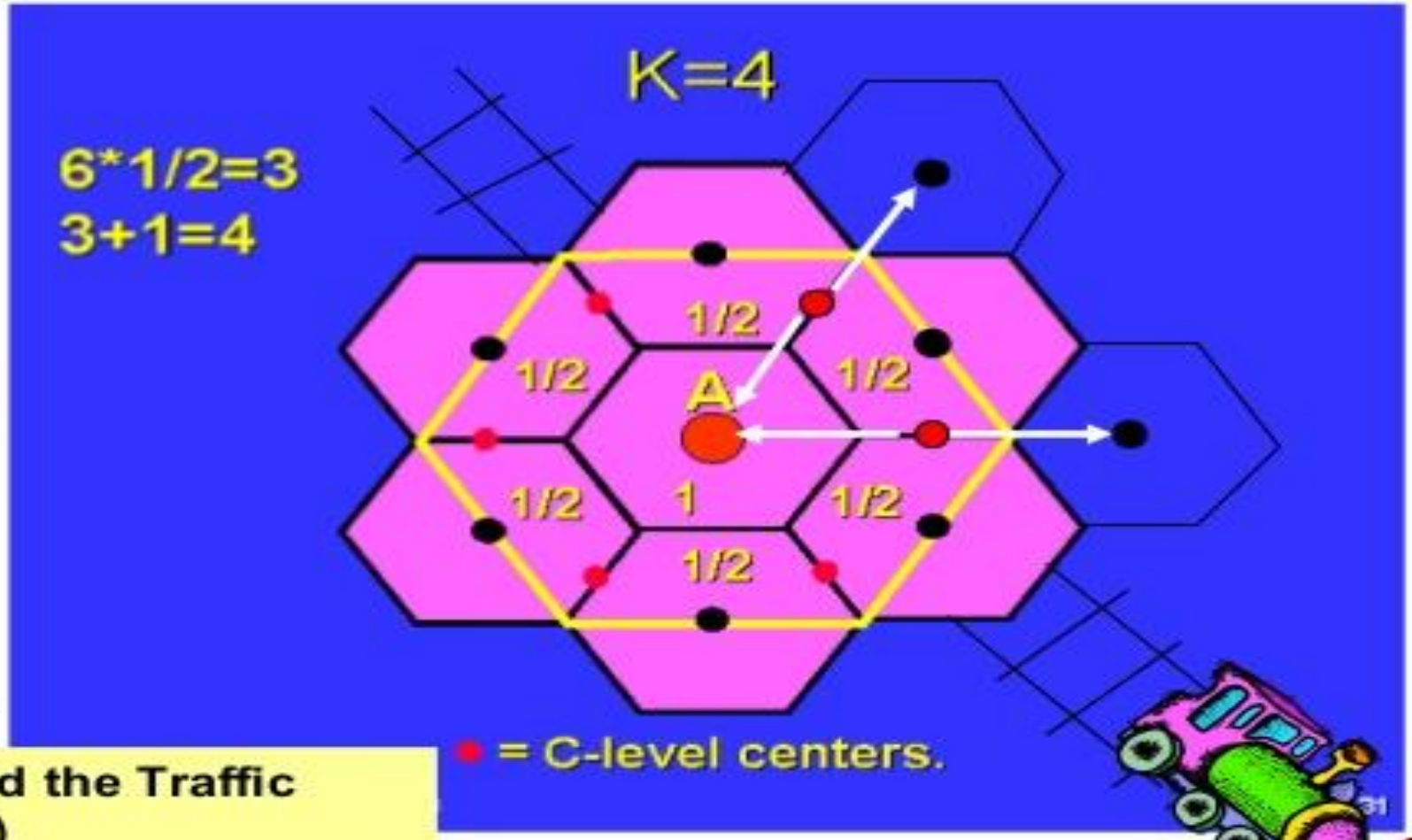
Hint→ look at the numbers of consumers who visit the highest order settlement

K4= The Traffic Principle

In the K=4 model the lower order settlements (red dots) only have a choice of 2 higher order settlements to visit, in order to buy goods and services.

-Half of them go to settlement A and the other half go to a medium order settlement (black dot)

How did K=4 get its name?

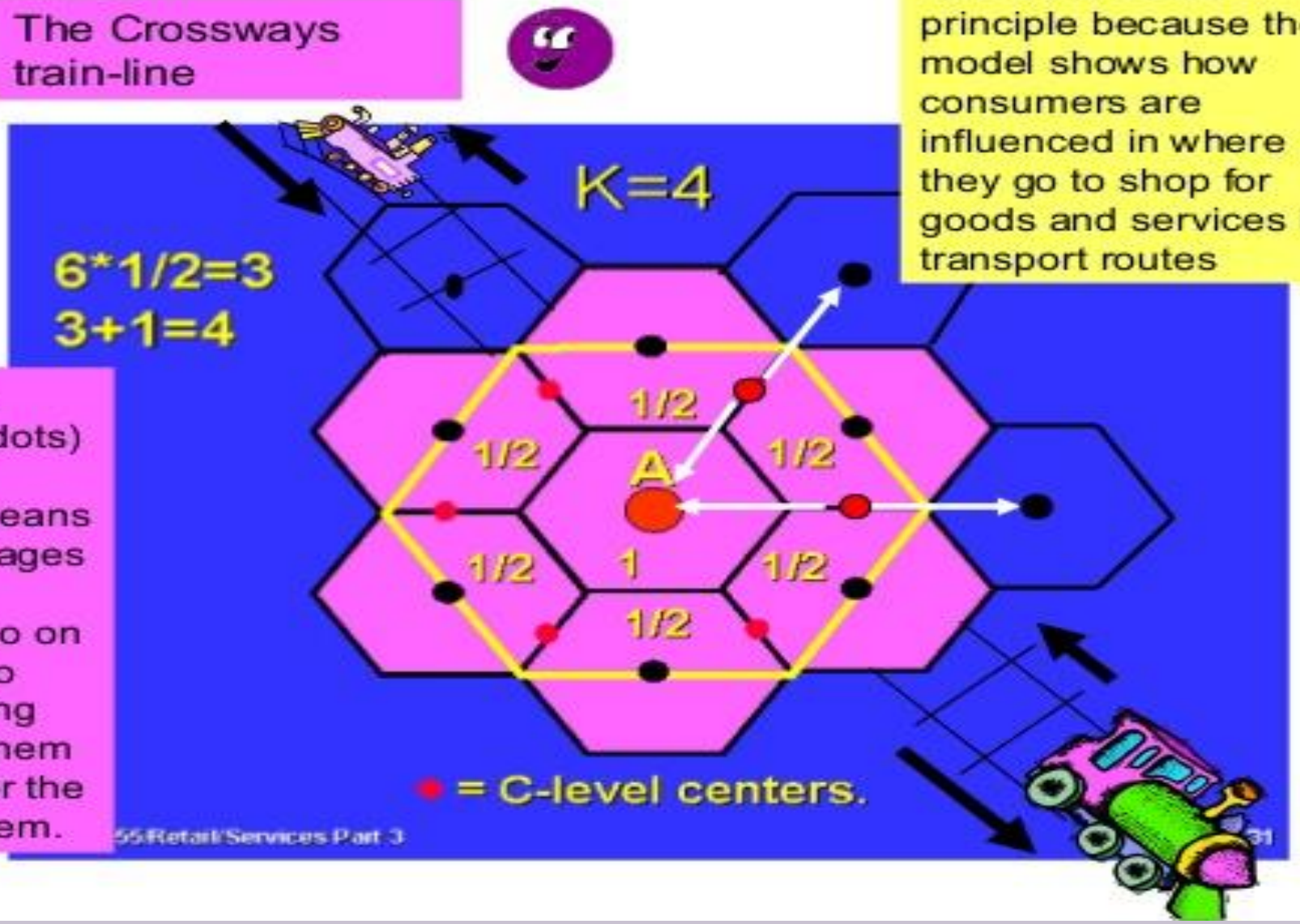


Why is K=4 called the Traffic Principle (model)

How the K=4 Traffic principle got it's name

The Crossways train-line

The K=4 model is called the traffic principle because the model shows how consumers are influenced in where they go to shop for goods and services by transport routes



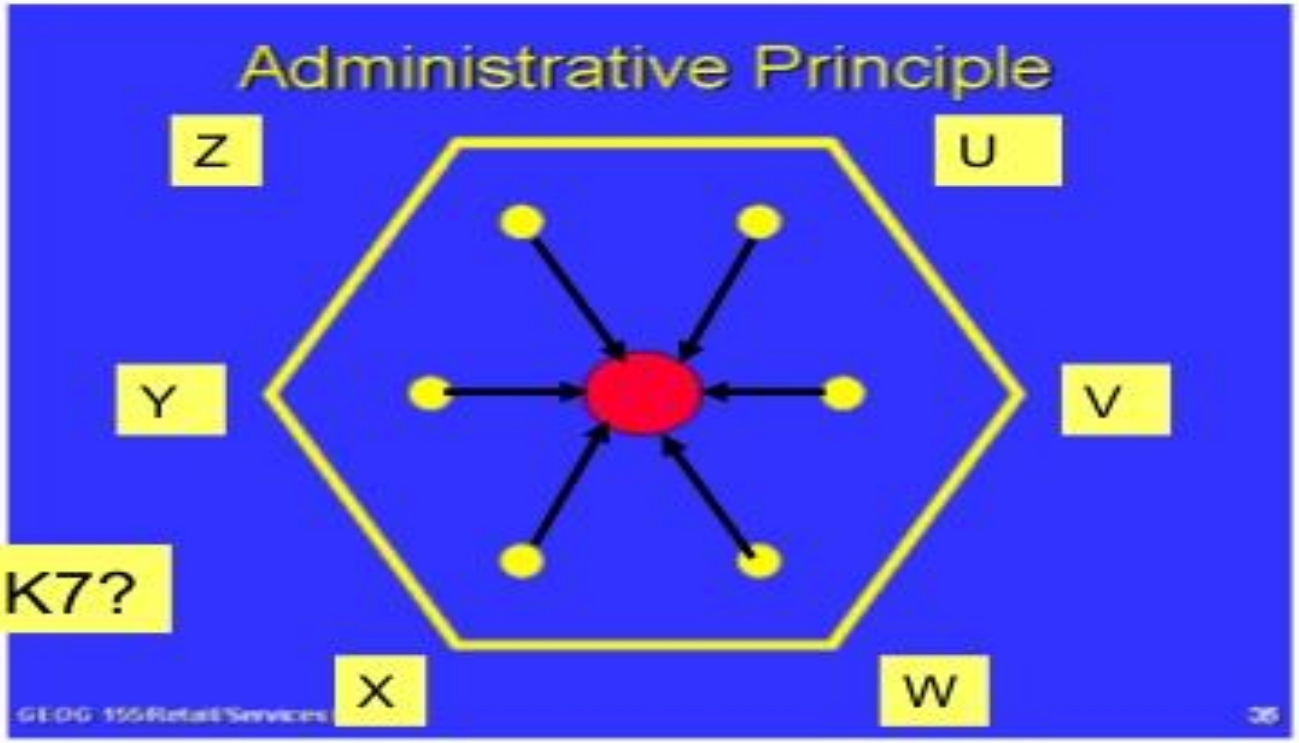
In this example the low order settlements (red dots) are located along a transport route. This means that these low order villages can only visit other settlements that are also on their transport route. So they are limited to visiting the settlement behind them on the transport route or the settlement in front of them.

K=7 The Administrative Principle

This model shows a hierarchy of control→ -Lower level settlements are arranged within the sphere of influence of the highest order settlement. This is done so that the lower order settlements can be completely controlled by higher levels.

A high order central place is shown.

-All the low order settlements lie within the hexagonal trade area (U,V,W,X,Y)



Why is K7 called K7?

The uses of Christaller's central place model

- The model is often used by governments to plan the location of new towns (i.e. Milton Keynes) and high order services i.e. hospitals
- It is used by transport authorities to plan transport routes(so that all areas have equal access i.e. K4 model)
- Businesses can use the model to decide where to locate a new shop

Limitations of Christaller's model

- Few real-life regions fit Christaller's model (except the flat lands of the Dutch Polders and East Anglia in the UK)

- **The problem lies in the basic assumptions of the model:**
- People do not always go to the nearest central place (they may chose a new edge of city superstore further away) So the K3 theory wouldn't work.
- Large areas of flat land rarely exist. Mountains & hills etc distort transport routes (so the K4 theory wouldn't work)
- People and wealth are not evenly distributed (if poorer people live in a certain area & their nearest high order settlement is expensive then they won't visit it)

- Governments often control where new towns are located, not market forces (i.e. not necessarily where the demand for goods and services is highest)