

## Economic

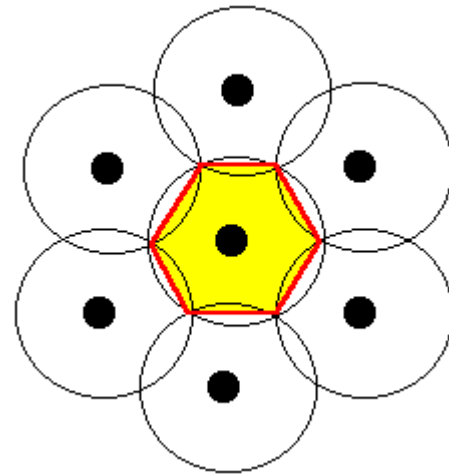
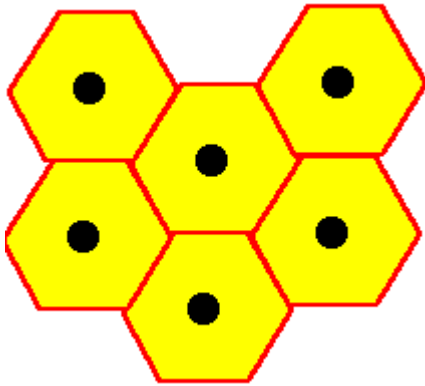
- Economic System: Definition & Structure
- Basic Models
  - Central Place
  - Von Thunen
  - Distance Decay
  - Gravity Model

- Economic System
  - Distribution of goods and services including the production process and the mode of production
    - Modes of production
      - Slavery, Feudalism, Mercantile Capitalism, Industrial Capitalism, Socialism
  - Economic Activities within systems
    - Primary
    - Secondary
    - Tertiary
    - Quaternary
  - Activities between Systems
    - Import v. Export
  - Balance of activities within and between
    - Basic v. Non-Basic: Income Generating versus Income Circulating

## Central Place

- W. Christaller's **Central Place Theory** posits the size and distribution of markets and service centers varies according to relative size (or population).
  - A product's **range** (or maximum travel distance of a consumer) is limited
  - The minimum required market (or **threshold**) varies by product
- In concert, range & threshold suggest:
  - the range of higher order goods is greater than lower order goods
  - the threshold for higher order goods is greater

- The result is a systematic hierarchy of services and goods





# HUMAN geography

An experiential Approach

- Christaller proposed variations based on transportation (mid-point) & administration (strong centralization & central market)
- Losch proposed a consumer model based on manufacturing & administrative structures opposed to service centers

## Von Thunen's Rings & Bid-Rent

- Economic activity and the cost structure of land use are inter-related
  - Von Thunen's rings based on observed agricultural practices and associated costs

## Distance Decay

- Observed decreases in social/spatial interaction associated with distance
  - Absolute, relative, & social distance

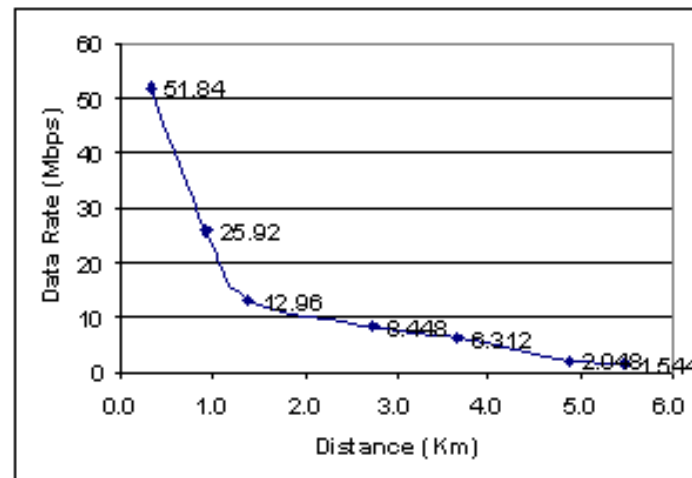


# HUMAN geography

An experiential Approach

Signal Level	Data Rate	Serving distance
DS1 (T1)	1.544 Mbps	5.5 km (18000 feet)
E1	2.048 Mbps	4.9 km (16000 feet)
DS2	6.312 Mbps	3.6 km (12000 feet)
E2	8.448 Mbps	2.7 km (9000 feet)
¼ STS-1	12.96 Mbps	1.4 km (4500 feet)
½ STS-1	25.92 Mbps	0.9 km (3000 feet)
STS-1	51.840 Mbps	0.3 km (1000 feet)

**Table 1. Practical limits on data rate in relation to cable length (assuming 24 gauge twisted pair wire)**



**Figure 2. Access bandwidth as a function of cable length**

Cai et al. (2000) [http://guoray.ist.psu.edu/info/Publications/ESRI\\_P147.htm](http://guoray.ist.psu.edu/info/Publications/ESRI_P147.htm)

## Spatial Interaction

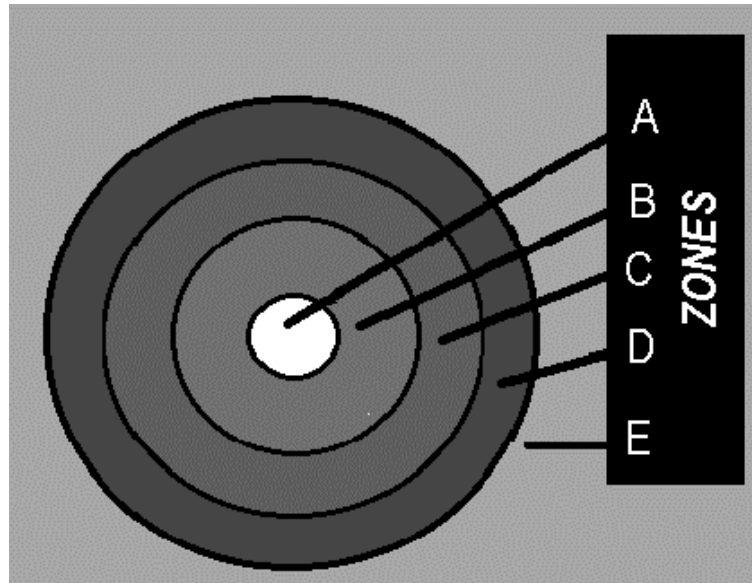
- Primary Relationships
  - kinship
  - mutual/shared interests
- Secondary Relationships
  - expressive (voluntary)
  - instrumental (functional associations)

## Spatial Interaction

- Social Distance
  - influences interaction between groups
  - shared geographies
  - reinforced by distance

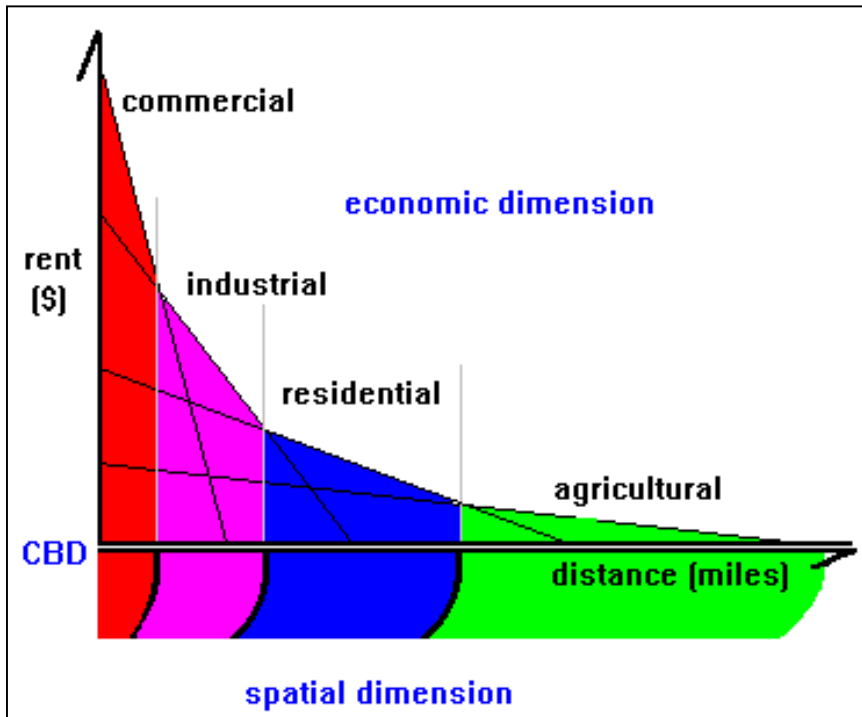
## Implications

- Distance decay linked to urban form
  - Cost of overcoming distance has result in class-based (or production-based) spatial arrangement
  - Von Thunen's Rings

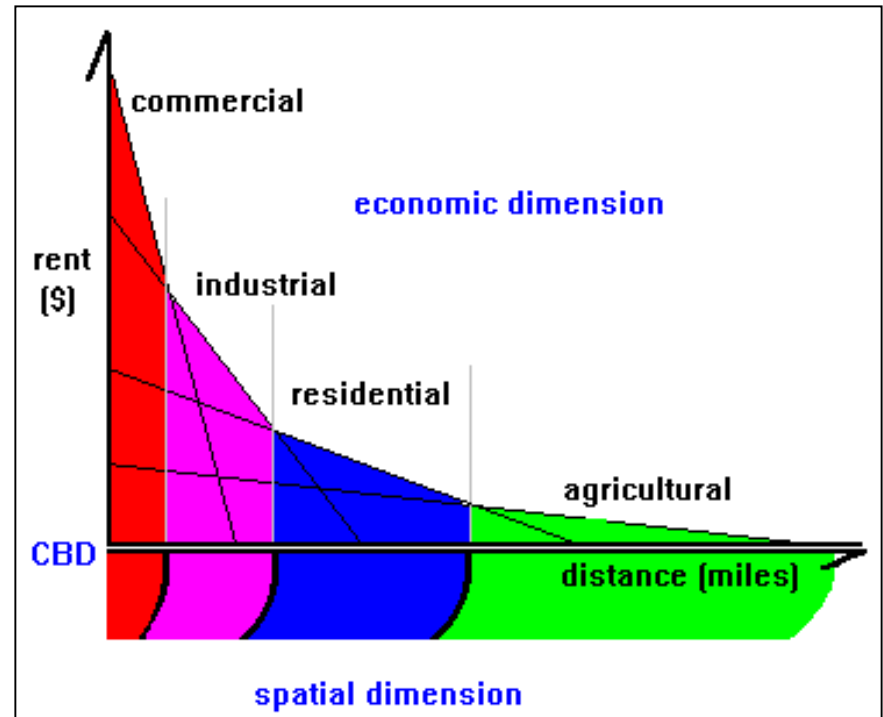


- A. *Market Goods*
- B. *Dairy*
- C. *Grains*
- D. *Livestock and General Farming*
- E. *Grazing*

## Transition: Bid-Rent Model Emerges

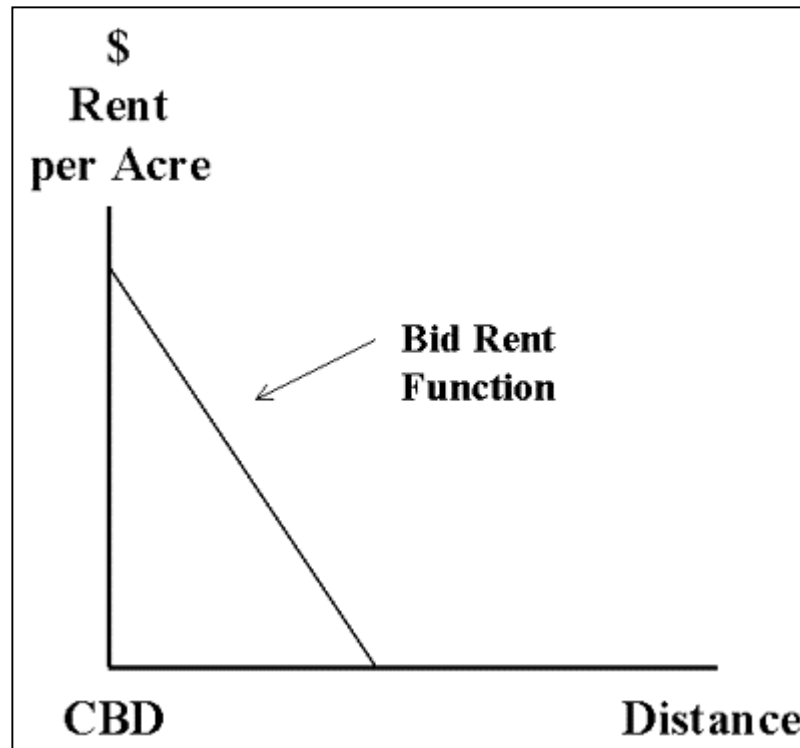


Source: Vogeler (2000) VGDP



Source: Vogeler (2000) VGDP

## Transition: Bid-Rent Model Emerges



## Urban Structure

- Implications of New Technologies & Competition

