

Course Updates

- Our first **DQ set** to be handed in is due on **Thursday** (change in schedule)
 - I will aim to return the *graded DQ sets* on **Thursday** next week
 - Note the three reading sources I mentioned in my email yesterday
 - Rice and Hernandez (2017) textbook
 - GEOG 4230 "Syllabus and Handouts" page
 - CSAM "4230" directory (see readings subfolder)

Course Updates

- **GIS Lab #1 is next week**; but our first GIS lab session is **Thursday**
 - **On Tuesday**: we meet with the KFC location analytics team
 - **On Thursday**: we spend all of our time on GIS lab #1
 - To help you get ready for the lab, I have already posted a **lab overview presentation** on our class slides page under week 3: please review the basics listed there

Course Updates

Also, please expect an email from Esri in the next week or so:

Invitation to register for Esri's **Business Analyst Web App**
(used in GIS Exercise #5)

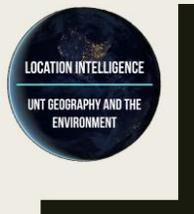
Would you please let me know if you already have a UNT Esri account?
Indicate yes/no for this on the sign up sheet going around

Semester Projects

Reminder – on **Thursday this week** I would like to know your semester project plans; for the project, will you be:

- (A) Working on your own, or
- (B) Working in a group of two (please let me know your partner's name in this case)

There are positives and negatives to both options. I am open to either one. Please see me if you have questions.



FOUNDATIONS: URBAN-ECONOMIC GEOGRAPHY

Week 2

Why Urban/Economic Geography?

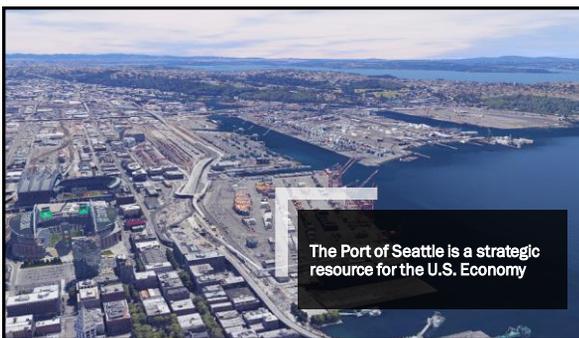
- In this class, the primary focus of our thinking and analysis will be on the convergence of two **key dimensions of human life**
 - **1. Cities**: the dominant organizational form of modern society; the venue that encompasses the lives and activities of the majority of people alive today
 - **2. Economy**: the system of work and exchange that provides and distributes goods and services for human populations around the planet

The Urban/Economic Challenge

- **Key task for us:** understanding the forces that cause businesses, business communities, and cities to advance and grow
- **Also of interest:** understanding how things can go wrong for regional and national economies (the limits to growth)

The Urban/Economic Challenge

- **Why address this topic here and now in this course?**
 - *I don't want you to become "buttonologists"*
 - What is this? People who are **technically good** (software, data analysis) but don't understand the deeper meaning of what they are doing
 - Aim here is to give you some sense of the broader issues in urban/economic geography that impact the GIS analysis you will do



Seattle's Airline Destinations



Seattle's Airline Destinations



- Seattle is home base for **Amazon**, as well as **Costco**, **Microsoft**, and **Starbucks**
- Key design and production region for **Boeing**

Seattle

- Having companies like these provides the Seattle business community with the ability to generate massive economic change
 - Firms like Seattle's that do business around the world form the basis for business and job growth in their home city
 - Q: How can Seattle economically benefit from having businesses like Amazon and Microsoft?
 - How can these businesses also hurt Seattle?

Seattle

- **Key task for us now:** understand the forces that cause businesses, business communities, and cities to advance
- **Also important:** understand how things can go wrong for regional and national economies - the limits to growth

BRIEF EXPLORATION OF ECONOMIC GEOGRAPHY

Selected Principles Related to Business
Development in an Urban Context

Business Location and Economic Development

- **Powerful Idea:** economic development advances quickly in places like Seattle because of local business links in the place
 - *Strong local linkages allow development occurring in one sector (or industry) in the local economy to spur on development in other sectors/industries*
- This is a factor in "cumulative causation": growth leading to more growth

Business Location and Economic Development

- **Example:** The recording industry in Los Angeles is a regional case of a related business impact termed "agglomeration economies"
 - *Advantages gained by groups of functionally-related businesses that locate in geographic clusters*
 - *Good local linkages = explosive economic growth*

Note the clustering of recording activity in LA: operations in each business are related to activity in other businesses in the recording industry



Q: Can you think of ways in which the operations of one business would have some connection to activities in other firms from the same industry?

Note the clustering of recording activity in LA: operations in each business are related to activity in other businesses in the recording industry



Q: Can you think of ways in recording businesses would have some connection to activities in other firms in other industries?

Business Location and Economic Development

- However, at some point rapid growth can lead to negative economic effects, or agglomeration diseconomies directly linked to conditions impacting specific businesses
 - *High labor costs in specific job types*
 - *High land costs in a specific district of the city*
 - *Particular kinds of infrastructure become stretched to capacity*

Q: can you think of a case where this might happen?

Business Location and Economic Development

- Agglomeration economies/diseconomies are one example of businesses having an impact on other businesses that can be directly traced back to location
 - *Again, important to recognize that agglomeration is all about business location impacts arising because of common interests and benefits*

Business Location and Economic Development

- A related case occurs when businesses are attracted to locate in an area because of the **general benefits** offered by a city: "urbanization economies"
 - These relate to the attraction of an overall urban environment, not particular benefits related to locating near a specific, other business

Q: can you think of a case where urbanization economies alone might attract a group of businesses to a city?

Business Location and Economic Development

- Urbanization economies can also turn into urbanization diseconomies when a city's business conditions turn negative due to the "overheating" of the regional economy
 - High labor costs (all job types)
 - High land costs (in general, across the city)
 - Transportation facilities stretched to capacity
 - Rising taxes needed to fund infrastructure expansion and upkeep across the region

Business Location and Economic Development

- There is one more case where businesses have an impact on the fortunes of other businesses through location
 - Sometimes, competitor businesses can also have an important, mutual impact on where their competition locates: the concept of "locational interdependence"

Business Location and Economic Development

- Locational interdependence examples:
 - Walmart opens, and Target locates nearby
 - Home Depot opens, and Lowe's opens nearby
 - Chipotle opens, and Panera and McAlister's open nearby

Q: can you think of any other cases where this happens?

Business Location and Economic Development

- Locational interdependence is NOT the same as agglomeration economies
 - Walmart and Target are not trying to help each other: but their locations create some kind of equilibrium where both can end up benefiting

Q: how can this be?

Business Location and Economic Development

- A Business "Parable": Hotelling's Ice Cream Vendors
 - Scenario: Two ice cream stands on a long beach filled with people
 - Where should they locate along the beach?
 - Hotelling's conclusion: "Socially optimal" locations aren't always the long-term locations adopted by competing businesses





“HOTELLING
IN REAL
LIFE”



“HOTELLING
IN REAL
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“HOTELLING
IN REAL
LIFE”

Business Location and Economic Development

- We've explored three different ways that businesses can impact other businesses (positively and negatively) through location
 - 1. *Agglomeration economies*
 - 2. *Urbanization economies*
 - 3. *Locational interdependence*

Q: how do these location impact types relate to our KFC project? Is one of these more important than the others?

Business and Economic Cycles

- A related discussion connects technology and business cycles
 - *Basic idea: the location of economic activity is linked to the advancement of technology and society*
 - *New ideas are developed, become very popular, mature, and then die out*
 - *This happens quite often with products, but it can also happen with industries*

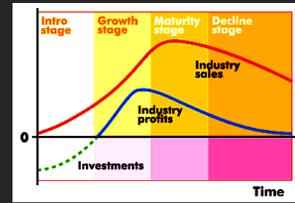
Business and Economic Cycles

- **Q:** Can you think of a product or idea that spread in popularity and then died out?

Business and Economic Cycles

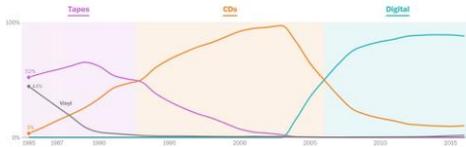
- An idea called “the product cycle model” captures this business cycle concept exactly
 - A predictable series of events that products go through, all the way from their beginnings to the end of their production
 - Essentially, the product cycle describes the “life” of a product

The Product Cycle

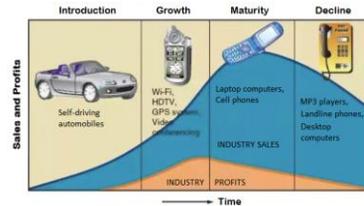


HOW DID PEOPLE LISTEN TO MUSIC?

Share of U.S. music sales supported by format



A Few Products and Possible Stages in the Product Life Cycle



Business and Economic Cycles

- Technology and Cycles
 - Q: Why might we discuss the product cycle in a geography class? What does location have to do with it?
 - What phase you are in through the cycle has an impact on where you locate
 - Growing, innovative businesses need to be in different places than businesses that are trying to cut costs
 - Geographers are in a unique place to give this kind of advice

Journal of Industrial Organization 18: 213–217, 1996.
© 1996 Kluwer Academic Publishers. Printed in the Netherlands.

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Innovative Clusters and the Industry Life Cycle*

DAVID B. AUDRETSCH
Center for Economic Policy Research (CEPR) and Wissenschaftszentrum Berlin für Sozialforschung

and
MARYANN P. FELDMAN
Johns Hopkins University, Baltimore, MD, U.S.A.

Key quote from this publication:

While the generation of new economic knowledge tends to result in a greater propensity for innovative activity to cluster during the early stages of the industry life cycle, innovative activity tends to be more highly dispersed during the mature and declining stages of the life cycle

*The positive agglomeration effects during the early stages of the industry life cycle become replaced by congestion effects during the latter stages of the industry life cycle.

Key words: Innovation, life cycle, geography, clusters.

Business and Economic Cycles

- Generalizing a little more: what about business cycles at the global level?
 - **Big Idea:** *economies and diseconomies impact even the global economy, creating alternating periods of growth and decline over the past 300 years*

Business and Economic Cycles

- **Nikolai Kondratiev:** Russian economist whose major contributions to understanding economic development came in the 1920s
 - Tracked global economic booms & busts
 - Found a regular pattern of approximately 50-year cycles that have occurred since the mid-1700s ("Kondratiev Waves")

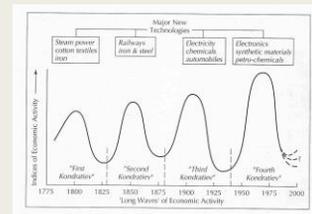


Business and Economic Cycles

- Kondratiev connected these cycles to changes in technology
 - **Idea:** *each 50-year wave in the global economy was driven by a cluster of interlinked production, transportation, and communication technologies*



Long Waves in Economic Development



The economy advances by developing a cluster of new technologies to replace aging, older ones

Business and Economic Cycles

- This global economic cycle idea lies at the core of the modern literature of Techno-Economic Paradigms ("TEPs")
 - *The TEP idea focuses on understanding the development of new technologies and their relationship to economic changes happening in recent years (and where things are going now)*

Industrial and Corporate Change, Volume 11, Number 4, pp. 645-666

The capabilities of new firms and the evolution of the US automobile industry

Steven Klepper

Available online at www.sciencedirect.com
 SCIENCE @ DIRECT®
 ELSEVIER
 Technovation 29 (2009) 999–1016
 www.elsevier.com/locate/technovation

Co-evolutionary and multi-level dynamics in transitions: The transformation of aviation systems and the shift from propeller to turbojet (1930–1970)
 F.W. Geels*

Q: Why should planners and leaders in urban regions care about the evolution of the global economy?

© 2009 Elsevier Ltd. All rights reserved.
 Keywords: Co-evolution; Transition; Multi-level perspective; Turboprop; Aviation

Business and Economic Cycles

- A key lesson we learn from this kind of research is that economic depression is an important component of future economic growth
 - Provides an opportunity for economic restructuring – getting rid of the old and making way for new industries and ideas (“creative destruction”)
 - Many North American cities have learned this hard lesson once again in the last 10-15 years

Business and Economic Cycles

Q: How might this cycle idea relate to our KFC project? Do product, business, and economic cycles have any conceivable connection to KFC's business?

BRIEF EXPLORATION OF URBAN GEOGRAPHY

Selected Principles Related to Business and Urban Development



Urban Geography

- Where economic geography explores the interaction between location and the evolving global economy, urban geography examines the meaning of geography for the development of cities

Urban Structures

- One of urban geography's most basic contributions is an understanding of the spatial structures and patterns that characterize modern cities
 - *Focus here: the North American city*

Urban Structures

- **Basic acknowledgment:** every city has a downtown ("Central Business District", or "CBD")



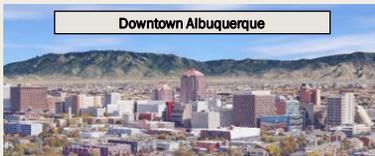
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Urban Structures

- **Basic acknowledgment:** every city has a downtown ("Central Business District", or "CBD")
- **Q: What are the features that define a "downtown"?**
 - Dense landscape of offices, professional employment
 - High-order services (accountants, lawyers, advertising)
 - Concentration of food, entertainment, and retail services
 - Accommodation, meeting places (convention centers)
 - Sports venues (arena, stadium)

Urban Structure Models

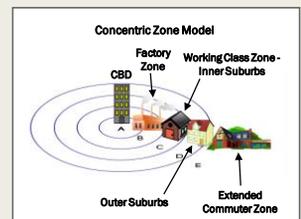
- Every geographic conceptualization of the city starts with an acknowledgement of the importance of the downtown for urban life
 - However, cities are marked by other structures that are reflected by a land use map
 - Following are **four urban models** that capture different tendencies characterizing the structure of North American cities

#1

Concentric Zone Model

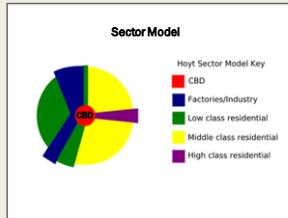
Acknowledges "rings" of land use surrounding the major downtown

Reflects social and economic variations (lower status closer in, higher status further out)



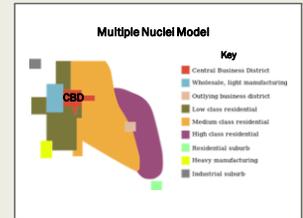
#2 Sector Model

Acknowledges the existence of "corridors" of land use focused on the major downtown
A "pie wedge" pattern



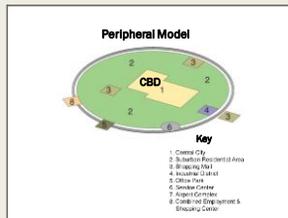
#3 Multiple Nuclei Model

Acknowledges the existence of multiple centers in the city, some of which might duplicate a portion of the function of the major downtown



#4 Peripheral Model

Most recent model, acknowledges the sprawl of modern cities. Key feature: loop or bypass highways that circle our cities.



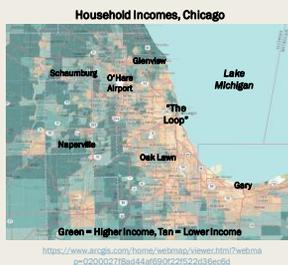
Putting it all together...

The real world is more complex than any single model, but we can see elements of each of the models in various maps of American cities



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Urban Structure Models

Q: How might KFC benefit from incorporating urban structures thinking in its store and market assessment plans?

Urban Evolution

- As well as acknowledging urban structures, it is also important to observe that these structures themselves change, in some cases quite markedly
 - Q: How might a district of a city change over time? Can you think of examples of this happening?
 - What might be some factors that cause change in an industrial district? What about a residential district?

Urban Evolution

- Social scientists have drawn on observations of changing urban structures over the last century to construct models depicting change in urban neighborhoods and districts
 - The following five-stage neighborhood life cycle model summarizes the major phases that we can see in many residential neighborhoods built in the last 50 years
 - Note: this life cycle model doesn't focus on what's geographic, but we can map these phases as well

Neighborhood Life Cycles

- **1. Suburbanization:** new construction, focused on single-family homes for young families that are relatively high on the socioeconomic scale



Neighborhood Life Cycles

- **1. Suburbanization:** new construction, focused on single-family homes for young families that are relatively high on the socioeconomic scale





Q: WHERE IN THE CITY DO YOU THINK WE MIGHT FIND NEIGHBORHOODS IN THIS DEVELOPMENTAL PHASE?

Neighborhood Life Cycles

- **2. In-filling:** add multifamily and rental properties on vacant lots, increasing the diversity of residents in the neighborhood



Neighborhood Life Cycles

- **2. In-filling:** add multifamily and rental properties on vacant lots, increasing the diversity of residents in the neighborhood




Q: WHERE IN THE CITY MIGHT WE FIND NEIGHBORHOODS LIKE THIS?

Neighborhood Life Cycles

- **3. Downgrading:** a long phase of slow but steady deterioration of housing, and increasing population turnover rates



Neighborhood Life Cycles

- **3. Downgrading:** a long phase of slow but steady deterioration of housing, and increasing population turnover rates



Average House Age: 50-80 Years

Apartment Building

Visibly-Aging Single-Family Houses

Visibly-Aging Single-Family Homes

Q: WHERE IN THE CITY MIGHT WE FIND NEIGHBORHOODS LIKE THIS?

Neighborhood Life Cycles

- **4. Thinning Out:** high population turnover accompanied by high rates of physical change – conversion, demolition

Neighborhood Life Cycles

- **4. Thinning Out:** high population turnover accompanied by high rates of physical change – conversion, demolition

Average House Age: 80-100 Years

Pawn Shops

Single-Family Houses Converted into Businesses

Apartment Building

Single-Family Houses Converted into Informal Apartments

Low-End Commercial

Decaying Housing

Decaying Housing

Decaying Housing

Apartment Buildings

Vacant Land

Low-End Commercial

Q: WHERE IN THE CITY MIGHT WE FIND NEIGHBORHOODS LIKE THIS?

Neighborhood Life Cycles

- **5. Renewal/Rehabilitation:** end of the first cycle and beginning of a new one with physical renovation and an influx of a new "colonizing" cohort

Neighborhood Life Cycles

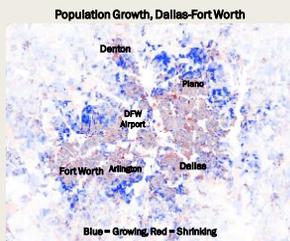
- **5. Renewal/Rehabilitation:** end of the first cycle and beginning of a new one with physical renovation and an influx of a new "colonizing" cohort



Q: WHERE IN THE CITY MIGHT WE FIND NEIGHBORHOODS LIKE THIS?

Putting it all together...

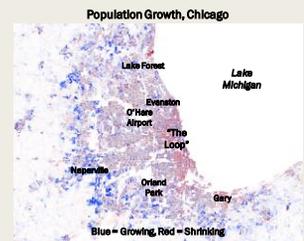
Can you use this population growth map to see where some of the neighborhood life cycle stages might be located in Dallas-Fort Worth?



<http://www.datapointed.net/2011/04/maps-us-population-change-2000-2010-contin4/>

Putting it all together...

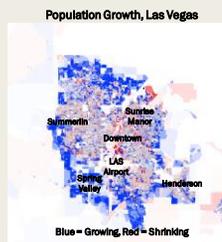
Can you use this population growth map to see where some of the neighborhood life cycle stages might be located in the Chicago metropolitan area?



<http://www.datapointed.net/2011/04/maps-us-population-change-2000-2010-contin4/>

Putting it all together...

Can you use this population growth map to see where some of the neighborhood life cycle stages might be located in Las Vegas?



<http://www.datapointed.net/2011/04/maps-us-population-change-2000-2010-contin4/>

Neighborhood Life Cycles

Q: Do neighborhood life cycles matter to KFC's business?

Is there any way that the neighborhood life cycle idea could be a beneficial addition to your project plans?

Conclusion on Urban/Economic Geography

- There is much more that can be explored in the realm of urban/economic geography, but these are the key points for this course
 - *We will take this basic understanding with us as next week we will complete our first GIS lab exercise:*
 - An **applied GIS case study** of business sales performance analysis and decision-making support for a restaurant chain in Denver