UNIT 70 - LEGAL ISSUES

Compiled with assistance from Earl Epstein, Ohio State University

For Information that Supplements the Contents of this Unit:
[Links to the following resources have been omitted.]

- GIS Ethics (Geographer's Craft) -- Conflicting responsibilities; access to public information vs. privacy; demands on public agencies; international data; knowing is destroying.
- Legal Issues Relating to GIS (Geographer's Craft) -- The evolving workplace: the open trend, from product-constrained to multiple-projects, the bottom line, who benefits from developments, the Vancouver story, the process, conclusion.
- Exam and Study Questions -- Legal issues (Geographer's Craft)

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A. INTRODUCTION

The legal regime

- is the structure of laws, regulations and practices within which society operates

- components of the legal regime:
  - statutes - laws, bills, acts passed by legislative bodies
  - administrative regulations - rules established by branches of government, under the authority of statutes (enabling legislation)
  - common law - past decisions of courts and judges have the effect of statute law unless over-ridden
  - professional and related practices - the system of conventions and traditions which rely on law for their ultimate authority
    - decisions of some bodies, e.g. medical professional associations, may have force of law in some cases

Function of law in society

- to resolve disputes, e.g. over ownership of land, locations of boundaries etc.
- maintain order
- establish a framework for common expectations about the events of life
- secure efficiency, harmony and balance in the functioning of government
- protect against excessive or unfair power in government or the private sector
- assure an opportunity to enjoy the minimum decencies of life

B. INFORMATION AS A LEGAL AND ECONOMIC ENTITY

- information is often considered as a commodity
  - is information similar or dissimilar to other traded commodities?
Quantity

- value of a traded commodity is generally proportional to quantity
  - difficult to measure quantity of information

- quantity of geographic information might be based on geographical area covered
  - e.g. US Bureau of the Census charges a flat fee for each county's TIGER file irrespective of the size or population of the county
    - some Western counties with population &LT100 cost the same as a New York borough with population in the millions

- can buy specific information, e.g. health information from a doctor, directory information for phone, information in a book
  - however, measuring the amount of information acquired for a given fee is a problem which distinguishes information from other products

Property rights

- who owns information?

- precondition for operation of a market is that property rights are created and can be protected
  - difficult to assign property rights to information
  - degree of appropriability (extent to which something can be owned) varies for information

- in the absence or limitation of property rights, suppliers will either find it unprofitable to produce the product, or if produced, tend to underproduce it
  - the patent system tries to assign ownership to information to create incentives for its production

- if the producer cannot prevent use in the absence of payment, then the market mechanism cannot operate properly

Public goods

- information is sometimes a public good
  - in economics, a good is public if its use by one person does not prevent or curtail its use by another
    - e.g. use of a car by one person denies its use by another

- a map is a common form of public good produced by governments at all levels
  - other forms of spatial data produced by governments, e.g. Census statistics, are also public goods

Value of information
decision-makers seek data at reasonable cost to:
- reduce uncertainty in planning, investment, development decisions
- provide new opportunities

- information has value because it can be used to make decisions about the allocation of scarce resources
- lack of information results in decisions being made under uncertainty
  - risk of bad decisions has an associated cost
  - risks can be averted using information
  - thus, value of information may equal the expected cost of the averted risk
- difficulties that apply to the definition of information as a legal entity also apply to the development of an economic model of the use of information and its value

**Information as evidence**

- spatial information is a form of scientific evidence, contributes to resolution of conflict
- maps may be used as evidence in court during litigation
  - all parties in litigation may have different views on maps and their interpretation
    - in fact, the idea that a neutral agency might create a non-contentious set of spatial data for decision-making is inconsistent with the American legal system where individuals have the right to question the facts that are used to determine rights and interests
- as evidence, it is often assumed that spatial information has been created using scientific measurement, methods
  - the assumption may not be true:
    - some maps rely heavily on subjective interpretation
    - maps contain errors
    - maps can be used in inappropriate ways
  - map designer has no control over map's use

**C. LIABILITY**

- liability is determined in cases where a person alleges harm from a poorly made decision
- land management decisions may be later shown to have been based on inaccurate information
  - e.g. when spatial information is used, decisions are often made without expert knowledge of the forms and accuracy of spatial information and associated processes of data collection and compilation
  - policy formation process is often based on small-scale, generalized maps
    - policy is often implemented using large-scale, detailed maps
    - the problems of scale change and generalization are rarely understood
suppliers and users of spatial information are concerned about liability for such decisions

there are three types - contract, negligence, strict product liability

**Contract liability**

- arises where the terms of an agreement between producer and user allocate responsibilities
- contract provisions are upheld by courts
- important for those who make contracts for production of maps, digitizing, data conversion, software maintenance
- a contract should set standards for products and services
  - difficult to establish standards for data accuracy
  - cost of checking data to see if it meets standards - does every data item have to be checked?
- where computer or product is involved:
  - seller should carefully describe standards that apply
  - buyer should obtain warranty that product is suitable for intended purpose
  - purpose must be clearly laid out in contract
- however, written contracts between public agencies and users of their maps are rare

**Negligence**

- arises where a person fails to exercise the standard of reasonable care normally expected of someone in the same situation, and harm results
  - courts and legislatures have defined "reasonable care" for many situations
  - map-producers and users are often covered by this type of standard
- computer-based information presents additional problems
  - so-called "computer error" is often found to be a failure of system owners or operators to respond to known bugs
    - in these circumstances it seems likely that the basic principles of "reasonable care" will apply
  - failure to select and maintain the hardware and software that executes the required tasks may constitute negligence
  - failure to market capabilities of products accurately may be negligence

**Strict product liability**

- user is required to show that the product is of an inherently dangerous nature
  - e.g. recent lawsuits over children's toys
does not require that the injured party present evidence that the producer acted improperly

D. LIABILITY SCENARIOS

- errors will occur in information services, data and products
  - the appropriate level of care in design and operation of systems is difficult to establish

- three types of errors are important in liability:

  **Errors in represented location**

  - typically result from measurement and data handling mistakes
  
  - national map accuracy standards prescribe a reasonable frequency of errors in locations
  
  - court is likely to consider the process of data entry and whether a reasonable level of care was established and used in design and implementation of the system, and emphasized in training
  
    - in the case of Indian Towing Co. vs United States, federal government was held to have negligently failed to maintain a lighthouse whose location was marked on charts and whose character was described in the official Light List

    - in Reminga vs United States the federal government was held to have inaccurately and negligently depicted the location of a broadcasting tower on an aeronautical chart, contributing to the mistakes and fatalities in an airplane accident

  **Representations of error-free data**

  - e.g. Aetna Casualty and Surety Company vs Jeppeson and Company
    - asserted that fatal plane crash resulted from defective aeronautical chart published by Jeppeson and Company
    - chart by Jeppeson and Co. depicted the instrument approach procedure to an airport - information based on tabular data from the Federal Aviation Administration
    - parties did not dispute the accuracy of the data on the chart but rather the graphic depiction of it
    - the chart showed two views of the approach, one from above, one from side
    - two views appeared to have same scale on chart - actually scales differed by factor of 5
    - court found the crew were misled by representation

  **Unintended and inappropriate uses**

  - user lacks expertise in interpreting map, and has no access to map's designers and compilers who could explain it

  - e.g. in Zinn vs State:
    - the state owns all land below the Ordinary High Water Mark (OHWM) of a lake
Evidence from botanists and surveyors at a regulatory hearing had established an elevation of 990 ft for the OHWM for a certain lake. The report of the hearing included a 1:24,000 USGS quadrangle showing the OHWM, and thus the extent of the state's land, defined by the 990 ft contour on the map. An adjacent landowner sued the state for the harm resulting from temporarily claiming part of her land (temporary in that the agency subsequently rescinded the report). The state was held liable - the 990 ft contour had been drawn for purposes other than definition of property rights but its use to depict the OHWM also implied a specific boundary of the property in question - i.e. the property boundary at the lake is defined by the OHWM, not a line on a map.

- Inappropriate uses of data are likely to increase with GIS technology unless safeguards can be built into systems.

E. ACCESS AND OWNERSHIP

- The general goal of law in the areas of access and ownership is to make as much publicly held data available as possible, subject to reservations about personal privacy and commercial value.

Privacy and Confidentiality

- These laws protect individual and commercial aspects of property from excessive government and private power.
- Privacy is a recently recognized concept, largely governed by common law.
- Protection is provided through statutes that require data and information gatherers and managers to:
  - Provide physical security to personal and property records.
  - Design systems that prevent inappropriate access to publicly held records.
  - Experience with computer "viruses" casts doubt on possibility of complete security given present level of interconnection between computer systems.
- Privacy rights problems arise when information is converted to digital form.
  - I.e. property ownership records in paper files do not allow easy searching.
    - In digital form it is possible to search these records for any combination of attributes.
    - This may produce publicly available information that infringes on privacy rights of individuals.
- Balance between public access to information and individual privacy rights changes when publicly held data becomes digital.

Open Records Laws, Freedom of Information Act
• Open Records Laws (states) and Freedom of Information Act (federal)

• designed to provide citizens with reasonable access to publicly held records
  • provides citizens with the basis for understanding government functions and actions which concern them

• Open Records Laws define
  • what are records
  • those records not open to general scrutiny
  • the conditions under which copies can be made available

Copyright

• designed to protect the commercial, proprietary aspect of creative works

• in some countries (e.g. UK) data from public agencies can be copyright
  • copyright laws make it easier to establish ownership, and therefore value, of information
    • in the UK public data can be sold by government agencies (e.g. digital data by the Ordnance Survey) at prices which allow full cost recovery
  • in the US this is impossible because data produced by federal agencies cannot be copyright - prices of digital data typically cover only direct costs of copying - no control over resale of data by corporations

Conflict of laws

• guarantees provided by open access can conflict with protections of privacy and copyright

• concept of public information involves a complex balance between access, ownership and economic factors

REFERENCES


EXAM AND DISCUSSION QUESTIONS

1. Explain how conflict can occur between laws designed to protect privacy, allow open access to publicly held data, and protect the economic interests of the creators of databases.

2. Discuss the three types of liability, and their relevance to providers of geographical data.

3. How will the legal issues surrounding geographical data change as cartography moves from a manual to a digital environment? What new problems will there be, and what old problems will be solved?

4. Using examples from everyday experience, explain the difficulties involved in putting value on information, and in trading information as a commodity. How are these difficulties being dealt with as society moves from an economy of commodities to one of information?

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