

A
Supplement
to

Kentucky Horizons

SCAN HIGHLIGHTS

Trends

Identified from the

LRC Scanning Program

August, 1993^{3/4}July, 1994

Informational Bulletin No. 192

Legislative Research Commission

Frankfort, Kentucky

SCAN HIGHLIGHTS

**Trends
Identified from the
LRC Scanning Program
August, 1993^{3/4}July, 1994**

Informational Bulletin No. 192

***Legislative Research Commission*
Frankfort, Kentucky
December, 1994**

This Bulletin was prepared by the Legislative Research Commission and paid for from state funds.
This document is available in alternative forms upon request.

FOREWORD

This publication is part of a continuing effort to provide legislators with information that will assist them in their decisionmaking by taking a broad and long-term look at issues. This publication highlights indicators of where current policies are leading and focuses on trends that could have a significant impact on the Commonwealth.

This report is based on the work of over 30 LRC staff members, who comprise the LRC issues scanning team. During the process of selecting articles for the monthly *Kentucky Horizons* newsletter, they identify major trends that seem to emerge from individual scans or groups of scans. This publication surveys their work from August, 1993, through July, 1994, identifying major trends.

This report was prepared by Linda Kubala, Jim Eddleman, Peggy Hyland, and Rita Ratliff. Charlie Bush edited the report. It was revised on the basis of comments from members of the scanning team, as well as Committee Staff Administrators of the interim joint committees.

This report is not meant to be authoritative or comprehensive. It is meant to be a starting point for further discussion on these issues of long-term significance for the Commonwealth.

Vic Hellard, Jr.
Director

The Capitol
Frankfort
December, 1994

INTRODUCTION

In April, 1988, an Issue Development Program was initiated at the Legislative Research Commission. The purpose of the program is to provide legislators with information on the potential long-term impact of various public policies on the Commonwealth and to anticipate issues or trends that are likely to have a significant impact on the state.

As part of the program, an internal "scanning" operation was initiated in August of 1988, to alert legislators to emerging issues that are likely to need attention. Scanning is a technique that has been used in the private sector for some time in strategic planning efforts. Scanning is the process of reading a wide variety of publications on a regular basis over a period of time, in order to identify issues early in their cycles, before they become "front page" problems. Early identification of such matters can provide the legislature time to prepare the Commonwealth to take advantage of opportunities and to ward off problems before they become crises.

Over thirty LRC staff members have agreed to be readers or "scanners." As they go about their normal reading, they flag articles that appear to indicate a new idea, an emerging issue, a shift in trends, a technological advance, or a novel approach to a problem. They complete a brief form that requires a summary of the relevant parts of the article and a short analysis of what the implications are for Kentucky. Generally, 12 to 20 "scans" are generated monthly. Once a month scanners meet to review these scans and to select those that appear to have the most significance for Kentucky and to relate to issues the General Assembly is likely to face. The scans that best represent the priority trends and issues are summarized in a monthly newsletter, called *Kentucky Horizons*, that goes to about 1,200 persons and organizations, including legislators, executive agencies, universities and colleges, business and civic groups, and the press.

The following report takes the priority trends and issues identified in the various scanning meetings held from August, 1993, through July, 1994, and consolidates them into trends that are either occurring in the state or are likely to have a significant impact on the state. The trends are not distinct. They interrelate and in some cases overlap. But, in general, the major trends identified and discussed during the sixth year of operation of the scanning program are presented here. Background under each trend is derived from information contained in the individual scan (article) relating to this major trend. The implications presented are not meant to be exhaustive, but only a starting point to generate further discussion of what these trends mean for the Commonwealth and what policy options might be pursued to address, enhance, or mitigate these trends.

The trends are not listed in any order of priority. A helpful table in the front of the publication lists trends under appropriate legislative committees. Also, the legislative committee or committees with jurisdiction are listed in the upper right-hand corner of the page in which each individual trend is discussed.

TRENDS PRESENTED IN THIS PUBLICATION

Communication Technologies

Page 1

TREND: Potential uses for the new communication technologies seem boundless, and promise competitive opportunities to states and regions, as well as industries. However, there are some who, for various reasons, including historical precedence, advise that not all uses will be successful, and seemingly sure investments may be lost getting to the future. (Crosscutting Trend)

Environment and Economy

Page 5

TREND: Economic realities are causing some businesses to pioneer fundamental change in operations to address environmental concerns. (Agriculture and Natural Resources)

Farm Futures

Page 7

TREND: The nature of farming in Kentucky and many states is facing what may be significant change marked by increased diversification, including use of farming to address some of society's problems. (Agriculture and Natural Resources)

Green Planning

Page 10

TREND: "Green" planning to promote a quality, sustainable existence for people over the long term is emerging in a variety of localities around the world. (Agriculture and Natural Resources)

Recycling

Page 13

TREND: Recycling has moved into the mainstream and is being affected by legal requirements; reuse is becoming more attractive. (Agriculture and Natural Resources)

Natural Disaster Relief

Page 16

TREND: Some attitudes appear to be changing towards natural disaster relief, with emphasis on prevention instead of payments. (Agriculture and Natural Resources)

The Funding Crunch**Page 18**

TREND: Government services are costly, unfunded government mandates are plentiful, and good taxes are hard to find. (Appropriations and Revenue)

Insurance Risks**Page 20**

TREND: States are examining their policies relating to insurance in many areas. Some are implementing programs to reduce doctors' malpractice exposure, and a California proposal would restructure auto insurance. There is concern that state guarantee funds to protect policy holders may set the stage for large future taxpayer losses. (Banking and Insurance)

Gambling**Page 22**

TREND: New jurisdictions continue to authorize casino gambling, often in hopes of creating jobs and prosperity. (Business Organizations and Professions)

Business**Page 24**

TREND: American business, across many sectors, has become far more competitive. (Economic Development)

Whither Development**Page 26**

TREND: States and localities tend to compete with each other through financial incentives, while some notably successful programs exploit unique local assets. (Economic Development)

College Opportunities Fade**Page 30**

TREND: Rising tuition and cutbacks in student financial aid are widely blamed for a decline in educational opportunities for students from poor and working class families. (Education)

Skilled Trades are Attractive**Page 31**

TREND: Skilled craftspeople, from carpenters to auto mechanics, are in short supply in many parts of the country and often are much better paid than non-professional white collar workers. (Education)

Pre-School Education**Page 32**

TREND: Studies continue to show lasting benefits from high-quality pre-school education programs, especially for children from disadvantaged homes, while casting doubt on the long-term usefulness of lower-quality programs. (Education)

School Consolidations**Page 33**

TREND: Consolidation of small schools may be an idea whose time has come -- and gone. Educational thinking throughout the country has until recently clung to the thesis that large schools, particularly at the high school level, were necessary to give students the variety of classes, particularly advanced ones, that the times demanded. But alternative ways of reaching this goal are in sight. (Education)

The Energy Boutique**Page 34**

TREND: The variety of energy options - and the opportunity to make energy choices - is growing. Several renewable energy technologies are now competitive, or very nearly so, in producing electricity. The local service monopoly of electric companies may be falling to competitive forces. And drivers may soon have the factory option of a gasoline, diesel, methane, compressed natural gas, or electric motor for their new vehicle. (Energy)

Three Stages of Old**Page 38**

TREND: The growing elderly population is forcing adjustments in the workplace, housing, health services, and relationships between generations. (Health and Welfare)

Plights of Children**Page 41**

TREND: The health and well-being of children in the United States has deteriorated over the past decade. Reputed causes and proposed solutions are myriad. (Health and Welfare)

Health Spending Priorities**Page 43**

TREND: Health spending priorities are being questioned in several areas. (Health and Welfare)

Crime and Punishment**Page 46**

TREND: Public concern about crime has resulted in tougher punishments for criminals and record increases in prison populations since 1980. Concerns about the destructive effects of public fear, and the apparent failure of "get tough" punishments to deter crime, may signal a coming shift in both perceptions and policies. (Judiciary)

Civil Law and Manners**Page 49**

TREND: Developments in employment law are likely to keep the courts as busy as environmental law has done in the recent past. On the environmental and land use front, business and property owners are fighting back against regulations which lower property values by limiting uses. Two recent books decry the loss of traditional American responsibility and civility. (Judiciary)

Genetics and Civil Rights**Page 51**

TREND: As the human genetic code is being mapped, questions are being raised about the need for laws to protect the civil rights of individuals in the area of genetic testing. (Judiciary)

Job Creation**Page 52**

TREND: The belief that small businesses are the principal engines of job growth in the United States, and thus deserve favored treatment, is being challenged in some quarters. In other areas programs to support home businesses are on the rise. (Labor and Industry)

Violence in the Workplace**Page 54**

TREND: Violence, including multiple homicides, seems to be an increasing problem in America's workplaces. (Labor and Industry)

Rural Distress**Page 55**

TREND: Poor rural areas are falling further behind the rest of the state and country. (Local Government)

Urban Development**Page 57**

TREND: Cities face an uphill battle in their competition for development and revenue, but they also have unique resources. (Local Government)

Vital Democracy**Page 59**

TREND: The feeling that governments and citizens have grown too far apart is widespread. Some on both sides are trying to bridge the separation. (State Government)

Some Demographic Trends**Page 63**

TREND: Excessive population growth is a global problem, yet Kentucky's concern is outmigration and lack of growth. Schools will be challenged to serve increasingly diverse populations. (State Government)

"Green" Tourism Trends**Page 65**

TREND: Tourism and recreational industries are responding to increases in outdoor activities and environmental awareness. (Tourism Development)

Riding the Rails**Page 67**

TREND: Railroads are making a comeback worldwide. But trains or urban rail transit will not soon displace many cars or trucks unless there is a severe and long-term crisis. (Transportation)

LIST OF TRENDS BY COMMITTEE

CROSSCUTTING TREND

Communication Technologies (page 1)

AGRICULTURE AND NATURAL RESOURCES

Environment and Economy (page 5)

Farm Futures (page 7)

Green Planning (page 10)

Recycling (page 13)

Natural Disaster Relief (page 16)

APPROPRIATIONS AND REVENUE

The Funding Crunch (page 18)

BANKING AND INSURANCE

Insurance Risks (page 20)

BUSINESS ORGANIZATIONS AND PROFESSIONS

Gambling (page 22)

ECONOMIC DEVELOPMENT

Business (page 24)

Whither Development (page 26)

EDUCATION

College Opportunities Fade (page 30)

Skilled Trades are Attractive (page 31)

Pre-School Education (page 32)

School Consolidations (page 33)

ENERGY

The Energy Boutique (page 34)

HEALTH AND WELFARE

Three Stages of Old (page 38)

Plights of Children (page 41)

Health Spending Priorities (page 43)

JUDICIARY

Crime and Punishment (page 46)

Civil Law and Manners (page 49)

Genetics and Civil Rights (page 51)

LABOR AND INDUSTRY

Job Creation (page 52)

Violence in the Workplace (page 54)

LOCAL GOVERNMENT

Rural Distress (page 55)

Urban Development (page 57)

STATE GOVERNMENT

Vital Democracy (page 59)

Some Demographic Trends (page 63)

TOURISM DEVELOPMENT

"Green" Tourism Trends (page 65)

TRANSPORTATION

Riding the Rails (page 67)

COMMUNICATION TECHNOLOGIES

TREND: **Potential uses for the new communication technologies seem boundless, and promise competitive opportunities to states and regions, as well as industries. However, there are some who, for various reasons, including historical precedence, advise that not all uses will be successful, and seemingly sure investments may be lost getting to the future.**

BACKGROUND: The nation is moving rapidly towards a new level of communications services using broad-band technologies, the so-called "telecommunications superhighway," "information highway," "I-way," or "infobahn." Hundreds of new uses are envisioned for the high-speed, high-capacity, multimedia networks which are beginning to connect people and places as never before. Some phone companies are able to offer dial-up movies. Several states are testing electronic benefits transfers for recipients of public assistance or other government benefits. A "courtroom of the future" at the College of William and Mary Law School combines television, on-line access to data bases, graphic display, and several other types of technology to improve the speed and efficiency of legal actions. An "electronic purse," a plastic card with a microchip that could be used to purchase small-ticket items, may be available by 1996. A study by Arthur D. Little Co. estimates that the ability of health care businesses to use the nation's telecommunications infrastructure for high-speed, high-resolution video, and image and data exchange could cut the nation's health care bill by as much as \$36 billion a year.

The effort to build infrastructure and develop competitive uses for it has been chaotic at times. Telephone and cable TV companies are racing with each other to upgrade their existing lines and offer new services, but they are not alone. Electric systems, many of which have installed fiber optic or coaxial lines for their own needs, are investigating other opportunities to use this infrastructure. A group of investors proposes to "wire" the world with a network of 840 satellites, which could offer communications services to 95% of the earth's surface by the year 2001.

Many states are playing an active role developing and establishing uses for the new technologies within their borders. In the competitive world of economic development, access to excellent telecommunications links and associated services is a competitive advantage which states are trying to exploit. The state of Iowa built its own fiber-optic network, connecting more than 100 points throughout the state. That system has been criticized, however, because it is available only for government, educational, and some medical use, and duplicates phone company lines. Kentucky state government currently is working to develop an integrated backbone network utilizing the private carriers. Two telecommuting centers planned for the state, one in Elizabethtown and one in Pikeville, are examples of the use of telecommunications to foster development outside the main urban centers. The Canadian province of New Brunswick hopes to develop an information-age

economy to replace its dependence on lumber and fishing, using its advanced telecommunications infrastructure. Nearly every home and business in the province is within a few miles of a fiber-optic or cable backbone, and most are plugged in. Several states, or state universities, are experimenting with methods of using telemedicine techniques to support rural doctors and hospitals, facilitate sharing of records, and allow specialists to examine patients at remote locations. On the regulatory front, Wisconsin is ending its traditional rate regulation of local telephone companies, as well as ending the companies' exclusive franchises, in an effort to open that sector to competitive services.

While telecommunications certainly will continue to grow and offer enormous opportunities, the future of most individual applications is highly uncertain. The current boom has been likened to the expansion of the canals, the railroads, radio and movie industries, or the building of the interstate highway. Unlike the Interstate Highway System, however, no single authority controls the "information superhighway," to assure that interchanges actually connect to the highway, or that all parts of the system can accommodate trucks and cars. Different companies are competing for the ascendancy of their own systems and operating standards. Some will lose, stranding the investments in them and much investment in compatible systems and equipment. The future might not be a vast, accessible network, but rather incompatible machines and formats in different regions of the country, or in different applications. Lack of uniform standards has retarded many potential applications, such as electronic funds transfers between businesses. A recent article in the *Federal Reserve Bulletin* concludes that the practice will not become widespread for some time, despite significant cost savings compared to handling of paper checks. One of the reasons is that widespread electronic billing and transfer requires the equally widespread adoption of standard inter-business systems and standardized rules for interactions between the businesses and banks. Sometimes, existing standards must be adapted to allow new practices; one major problem identified as slowing the use of telemedicine is that specialists currently are not reimbursed for the services they provide to Medicare or Medicaid patients over electronic networks.

Security and privacy issues will limit some applications. The government's demand for access to any encryption codes underscores the conflict between privacy needs in communications and the need to monitor criminal activity. The Computer Emergency Response Team, a quasi-government organization financed by the Defense Department, issued an alarm in February 1994 that intruders had gathered thousands of supposedly secret passwords being transmitted from computer to computer, and had gained access to files which were thought to be secure. Hackers are said to have penetrated virtually all systems which are connected to the Internet. The increasing use of technology to compile data on individuals for sale to others is a concern of the Privacy Rights Clearinghouse, which recommends uniform policies to assure privacy rights.

There is some concern that such new technologies as broad-based fiber optic cable will pass rural areas by. Right now computer users in rural areas face long-distance toll charges to get on the electronic highway to access commercial on-line services and the internet. Their urban counterparts have local access.

Finally, not all people want to abandon books, paper checks, letters, or face-to-face conversations. One survey found that about half of Americans are still uncomfortable with electronic gadgets like VCRs, CD players or digital alarm clocks. Another found an aversion to electronic devices especially acute among older people, women and the poor. The *Economist* cautions that, while the new communications allow some long-distance relations, the technology will not soon overthrow "the ancient tyrannies of time and space." Similar businesses will continue to concentrate in certain locations. The underground or informal economy, made up of all those unrecorded, untaxed transactions which are variously estimated to comprise 1.4% to 28% of the reported economy, will continue to prefer cash. Some authorities think the steepest barriers to the national information highway are sociological rather than technological. The real problem might be finding enough people willing to pay the money and learn the skills to use the new electronic services.

Several authors note that much that is written about the new technologies is hype, and must be treated skeptically. An article in *Barrons* warns that the current optimism about the potential of telecommunications is following a typical historical pattern. "Since the early 19th century, there have been three major eras of financial speculation that included communications of some sort. Each was followed by a major market downturn." This does not suggest that a major transformation is not indeed taking place, but rather that growth projections for a new technology often are far too optimistic, and lead to a mistaken belief that any investment in the industry is a sure thing.

IMPLICATIONS:

- Public investments in emerging technologies, including telecommunications technologies, should be made with caution. In particular, publicly funded investments in the information superhighway should not be predicated on an assumption of continuing explosive growth of any single technology, but should be structured with flexibility in mind. Kentucky governments may need to stay apprised of the many new telecommunications applications, so they can adopt new technology when it is beneficial.
- The continued rapid change in information/communications technology needs to be taken into account in installing school technology and preparing related curricula. Students at all levels need to learn to use these technologies.
- With growing dependency on computers in government and private activities, there is a need to protect sensitive information. If this information cannot be protected while at the same time being linked over open networks, then some information may have to be isolated from the "infobahn." Capabilities in the electronic age are forcing governments to redefine the meaning of a right to privacy.

- Telemedicine seems to offer tremendous advantages to medically under-served areas, such as much of Eastern Kentucky. The state may need to play a leadership and coordinating role to help develop these kinds of applications.
- Where the large number of players makes it very difficult to develop widely accepted standards, such as in the area of business-to-business funds transfers, state government might act as a technology leader by investing in its own system, designed as much as possible for broad use.
- In view of widespread "technophobia," government needs to be watchful in monitoring electronic access to government services and the automated answering machines used by many agencies, to be sure that these truly are "user friendly."
- A lot of competition is developing about who will own and control the telecommunications superhighways of the future. In light of these developments, state government may need to assess differential regulation and taxation of competing companies, including electric, cable TV, telephone, and computer companies.
- Improved employment opportunities in rural areas of Kentucky and working out of the home are possible since geographic location is irrelevant to telecommunications jobs.
- Democracy can be enhanced by increasing citizen ease of access to public information.
- Governmental involvement may be needed to ensure access to the information highway in rural areas.

ENVIRONMENT AND ECONOMY

TREND: Economic realities are causing some businesses to pioneer fundamental change in operations to address environmental concerns.

BACKGROUND: For a number of reasons forward-looking companies are examining their operations in order to make them more consistent with sound environmental practices. These reasons include:

1. The world is facing unprecedented times. According to Lester Brown of the Worldwatch Institute, in recent years living standards have run into limits imposed by nature. Basic agricultural and industrial production is ceasing to grow at a rate needed to keep up with population or, in some cases, is even declining as population continues to soar. More fishing in the ocean no longer produces more fish, while existing crops cannot economically use much more fertilizer. The fossil-fuel age is not over, but the beginning of its decline is apparent.

According to Brown, "When the history of the late 20th Century is written, the 1990's will be seen as a decade of discontinuity — a time when familiar trends that had seemed likely to go on forever came to abrupt ends or junctures and began descending abruptly."

2. The cost of environmental compliance has risen significantly since the 1970s. While the costs of environmental compliance were low and the regulatory programs applied sporadically, business leaders could respond on an as necessary basis. Now, however, with environmental programs affecting nearly every aspect of manufacturing, business leaders are recognizing the importance of revising the basic structure of their business to be more in harmony with the goals of environmental programs.

According to Mike Epstein, a visiting professor at Harvard Business School, most companies still relegate environmental concerns to a compliance department, but a few pioneers are integrating them into formal business strategy and analyses. He cites a bonus system at Browning Ferris that is partially based on environmental performance; Polaroid's manufacturing process that was changed to eliminate its use of mercury; and Du Pont's use of cost-benefit analysis to get the most from its environmental expenditures. Some small companies have also made similar strides.

3. There has been a rise in consciousness relating to enviro-justice issues. A federal presidential executive order was issued in February, 1994, that directed federal agencies to ease the disproportional burden of pollution in minority and low-income neighborhoods. Businesses are going to have to address environmental concerns of their neighbors.

4. The concept of "selling" air and water rights on futures markets is helping internalize costs of commodities that have previously been considered "free goods."

All of these factors are contributing to systemic change in some businesses and industries, and are likely to continue to force others to look seriously at fundamental change. A recent study indicates that states that are environmentally friendly are also strong on economic development.

IMPLICATIONS

- The 1994 General Assembly in Senate Bill 268, requires the Natural Resources and Environmental Protection Cabinet to establish a program to provide incentives to acknowledge the environmental leadership of facilities meeting pollution prevention goals. Kentucky government may be called on to intensify its use of legislation that would encourage businesses to make systemic changes that would help them be competitive in the future.
- Kentucky government will need to be prepared to meet the unprecedented times ahead. The work of the Long-Term Policy Research Center may become even more important for policymaking.
- The idea of bringing the cost of negative externalities into the marketplace is not new; however, making such costs explicit is. States may want to watch for federal actions that may require state expenditures.
- There may be increasing pressure on state and local governments to intervene in the proposed citing of certain "polluting" businesses in minority and low-income neighborhoods.
- The impact of such international agreements as NAFTA and GATT on the relationship between economic development and environmental protection may need to be monitored.
- Research on the implications of this trend on specific Kentucky industries may be helpful.

FARM FUTURES

TREND: The nature of farming in Kentucky and many states is facing what may be significant change marked by increased diversification, including use of farming to address some of society's problems.

BACKGROUND: Tobacco, the mainstay of the small farm in Kentucky, has come under attack from many sides. In light of the uncertainty of tobacco's future, farmers are looking at alternatives and whole new areas of farming are being proposed. Some alternative crops that have been proposed include organically-grown produce, hemp, medicines, and farm animals for biotechnology projects.

There is no question that the public is better educated on nutrition and the need to eat more fruits and vegetables. At the same time, the public has been exposed to concerns about pesticides. Surveys indicate that some people are willing to pay more for produce that is grown organically. The organic market is expected to grow by as much as 10 percent annually through 1997. The Kentucky Burley Cooperative is sponsoring a program to link local organic growers with citizens who are willing to pay up-front for a year's supply of fruits and vegetables.

A product that is really not new is also making a comeback. That product is hemp. Hemp has been cultivated for millennia, mainly to make rope and canvas. It has numerous legitimate uses in industry and construction. Countries which either have legalized or are considering legalizing hemp are Britain, Canada, Ireland, and some Asian countries. The hemp that is legalized is so low in THC, the active ingredient in marijuana, that no one would choose to smoke it. The Governor recently appointed a blue ribbon task force to look into the feasibility of growing hemp in Kentucky.

Somewhat more unconventional approaches to farming, that really address other societal needs as well, are composting, pharmaceutical production, and organ production.

As communities attempt to meet mandates to reduce waste, composting is being looked at as a viable alternative. Livestock farmers are facing more difficulty in getting rid of manure from their operations, composting helps improve the land, and the potential to make some money in this area is very real. In Canada, farmers face stiff fines if nutrients from the manure they apply show up in provincial waterways. Cities and states may view composting as a way to alleviate some of their solid waste problems. Some estimates place the percent of solid waste that can be composted at 70 percent. Drawbacks to on-farm composting include run-off from compost piles, and regulatory actions by government designed for regulating landfills.

Through genetic engineering, scientists are turning farm animals into pharmaceutical factories. One wonder of this new technology is transgenic animals — animals which carry DNA from one or more other species. In Scotland, there is a transgenic sheep flock that is capable of producing over \$100,000 worth of products per animal per year. In their milk, they produce a valuable human protein that is used to treat people with hereditary emphysema. The current source for this protein is human blood plasma, at a cost of \$110 per gram or \$3,000 per ounce. At Tufts University in Massachusetts, transgenic goats produce a human protein that doctors use to dissolve blood clots in heart attack victims. This protein is currently made from genetically engineered microorganisms resulting in a cost of more than \$2,000 per dose. In Blacksburg, Virginia, at Virginia Polytechnic Institute, a group of transgenic pigs carry a human gene for Protein C. Protein C is quite important in helping to keep blood from clotting, in treating certain cardiac patients, and treating patients who have had certain types of surgery.

Scientists have started many other biotechnology projects involving farm animals. However, it is likely that the initial steps in this area will come from company-owned resources (i.e., company-owned farms and animals). If the demand for any of these new products is sufficiently large, then the potential for traditional farmers to benefit from such technology will increase.

Interestingly, tobacco is being used to produce medicines. Virginia Polytechnic Institute researchers are claiming great progress in turning tobacco plants into factories for medicines. Tobacco is said to be one of the easiest plants to manipulate genetically. So VPI is growing plants that carry human genes and produce human proteins in their leaves for use as medicine. Dr. Carol Cramer, the lead researcher in the VPI program, says tobacco is the "laboratory mouse" of agricultural technology. Researchers there and elsewhere believe the tobacco plant can be genetically engineered to make such products as cancer fighting agents, human vaccines, antibodies for therapeutic use, enzymes for laundry detergents, and even food additives. At North Carolina State University, researchers are coaxing tobacco to increase the production of a protein that can be used as an emulsifying agent in food. Genetically engineered plants produce a coating that protects seeds from bacterial diseases, and can serve as an antiseptic against cuts and bruises. Other plants and animals can be used as biological factories, but tobacco has advantages over both, researchers say.

Use of farm animals for organ transplants to humans is another emerging area. The second international conference on xenotransplantation (transplants between species) was held recently in England. Attendees heard upbeat reports on new research, including the idea of an organ farm where animals would be raised for their "human organs." Scientists with DNX Corporation of Princeton, New Jersey, are getting ready to breed pigs that carry human genes that could produce, for example, human hearts. The biggest problem with organ transplants right now is that the patient's immune system immediately begins to attack a heart transplanted from another human. The patient is flooded with drugs to suppress the immune system. But with genetic manipulation of animals, the donor animal instead of the patient may be successfully treated to counteract that response. DNX plans

to breed genetically-altered pigs and transplant their organs into monkeys or apes as early as next year; human trials could come in 1996.

IMPLICATIONS

- Farmers may look to the state to provide assistance in moving into promising new areas in farming.
- Legislation would be necessary to authorize the growing of hemp.
- Ways to encourage additional research or more unconventional roles for farming, such as for producing pharmaceuticals or growing organs for transplant, may be promoted.
- The state may want to encourage cooperative efforts between communities and farmers to find mutually beneficial solutions to waste management problems.
- Problems relating to unconventional uses of farm animals may give rise to animal rights movements and ethical questions regarding human use of medicines and transplants from animals.
- There will be a lag period before any emerging alternatives become available to Kentucky farmers. They may need assistance to carry them through this period of transition.
- Incentive programs may be necessary to promote a partnership between farmers and industrialists.
- The key to watch in the development of these new "products" is the market demand and what substitutes or complementary products might also be available.

GREEN PLANNING

TREND: "Green" planning to promote a quality, sustainable existence for people over the long term is emerging in a variety of localities around the world.

BACKGROUND: Japan's Ministry of International Trade and Industry (MITI) recently proposed "New Earth 21," a 100-year program of actions to help the planet recover from 200 years of damage done by the accumulation of carbon dioxide and other greenhouse gases:

- Decade 1: Improve and implement energy efficiency;
- Decade 2: Promote clean energies, such as inherently safe nuclear energy and renewable energies;
- Decade 3: Encourage the widespread use of non-greenhouse gas substitutes for CFC's, carbon-dioxide reutilization technologies, and low-energy production processes;
- Decade 4: Implement widespread reforestation and the afforestation of deserts using biotechnology, causing dramatic carbon dioxide absorption;
- Decade 5: This decade will see the use of a new generation of technologies, such as fusion, orbiting solar-power plants, magma electricity generation, as well as superconductors and new energy-related technologies;
- Decades 5-10: The results of the first five decades will be integrated to complete the work of greening the planet.

As envisioned by MITI, all of these programs will be implemented in a global partnership with all countries, including developed and developing countries alike.

In January 1993, the World Resources Institute (WRI), The Brookings Institute, and the Santa Fe Institute jointly launched a four-year collaborative project to explore the question, *How can we achieve sustainable existence on this planet by the middle of the next century?* As set forth in a summary in *Future Survey*, the year 2050 is significant because it is far enough in the future for the impact of critical trends, such as those relating to population and global warming, to be felt and for fundamental social and economic transitions to occur; yet, it is within the life span of today's children. The Project will look at alternative scenarios of sustainability, traits of a sustainable world, and strategies for achieving them. Policy proposals and action plans will be region specific. The entire

project is intended to provide strategic guidance to policymakers worldwide, and stimulate thinking in the general public.

The results of green planning can be seen in the City of Curitiba, Brazil. Curitiba, Brazil, with a population of 1.6 million people and an average weekly family income of \$100, is believed by some planners to be the most environmentally advanced urban area on Earth. As described by the author, Curitiba streets are cleaner than Tokyo's, quieter than Vienna's, and greener than Washington's. The Curitiba bus system mimics a subway system, is as efficient as a subway, but costs only one to three percent of what a subway would cost. Passengers board through boarding tubes. Since passengers pay the bus fee upon entering the tubes, they are ready to board as soon as a bus arrives. Buses run frequently. High-rise apartment buildings are only allowed near major arteries, and the bottom two floors must be used for stores — which reduces travel needs of apartment dwellers. The city has an ambitious and successful program to not only preserve the city's existing trees and green space but to actually increase them. A tree cannot be removed or trimmed substantially without a permit. For every tree removed, two must be planted. In areas of Curitiba too narrow for garbage trucks to travel, citizens are given food staples in return for the garbage they bring to a central collection point.

A "green" village is being built in Ithaca, New York. EcoVillage is being designed in such a way as to minimize harm to the environment but, at the same time, keep it affordable. Toxic building materials are being avoided. Each unit will have a minimum of personal space. Laundry areas and large kitchen and dining facilities are to be shared in the "common house." However, individual homes will have small kitchen facilities. While most suburbs set aside no more than 20 percent of land for open space and parks, EcoVillage will preserve 80 percent of its 176 acres for crops, ponds, and forests. Houses will be tightly clustered and parking will be off to the side. Homes will be well-insulated and heating systems shared. Initially, energy will be from non-renewable resources, but easy transition to renewable sources, such as windmills, is being built into the design. This development is based on the concept of cohousing, a form of cooperative living developed in Denmark.

Trying to meet long-range goals requires monitoring progress. The Worldwatch Institute has for a few years published a document called *Vital Signs* that reports on the state of the world, sort of a global check-up on the environment, that is beginning to allow progress in various areas to be monitored over time.

Kentucky has been doing its own long-term planning. In 1992, the Kentucky General Assembly created the Long-Term Policy Research Center to serve as a catalyst to change the way decisions are made in state government in order to focus more often on the long range. The concept of sustainability can then be incorporated into decisionmaking, whether it be in the context of the environment, economic development, or meeting the needs of citizens. *Kentucky Outlook 2000*, currently underway by the Kentucky Long-Term Policy Research Center, in coordination with the Natural Resources and Environmental Protection Cabinet, will seek consensus on a vision for Kentucky. Goals,

and strategies for meeting those goals, as well as measurable indicators to monitor progress, will also be established.

IMPLICATIONS:

- Ways to "look long-range" in order to make sound policy decisions today will continue to be important to decisionmakers around the world.
- *Kentucky Outlook 2000* may put Kentucky a step ahead in its ability to set long-range goals and move toward them.
- "Green" planning for sustainability is really just long-range planning and requires input from all sectors. The need for public information, education, and involvement will grow in importance.
- Measuring progress in order to demand accountability will be necessary to any successful long-range plan. There may be increasing need to identify and refine the proper indicators to measure progress.

RECYCLING

TREND: Recycling has moved into the mainstream and is being affected by legal requirements; reuse is becoming more attractive.

BACKGROUND: An economic recovery and new mills to process recycled materials have resulted in significant increases in prices for recycled materials. Demand is also on the rise. In fact, demand for plastic bottles far exceeds supply. Recent court cases have had an impact on recycling and the programs some communities have undertaken to collect recyclables.

The Supreme Court has ruled that local governments may not require shipment of all trash to a designated facility, so-called "flow control" ordinances. This ruling endangers the widespread use of "flow control" ordinances, at least as concerns interstate commerce. In the case before the court, a private trash hauler was bypassing the city transfer facility and charging a lower disposal fee.

A related case gives a different spin to the above decision. The California Supreme Court on March 31 also struck down local attempts at "flow control," whereby local governments claim title to all solid waste generated within a specific area or jurisdiction. The California case, however, focused on recyclables. The court, while affirming that cities may grant exclusive franchises for solid waste handling services, said that recyclable material is property, has economic value to the owner, and is therefore *not* solid waste unless disposed of. This is a victory for private recyclers, like scrap metal dealers, whose business has been threatened by flow control laws.

An article in *Phoenix* magazine argues that failure to differentiate between actual recycling (where materials are reclaimed and reused) and waste disposal has led to serious impediments for recyclers. Companies which for years have sold "trash" (baled cardboard, radiators, etc.) at a profit suddenly are told they must give this material to the local garbage franchisee. Superfund and RCRA (the Resource Conservation and Recovery Act) rules place liability on suppliers of recycled materials, but not on suppliers of the same hazardous, but virgin, materials. The article argues for clear, strict definitions and separate regulatory treatment of recyclers, and Pennsylvania's law is cited as a model to use.

NAFTA will probably be beneficial to U.S. recycling markets. Canada and Mexico are already big trade partners in recycling markets. With NAFTA, increasing amounts of U.S. recycled paper and paperboard may be used in Canada and Mexico, since tariffs will be removed. This will be important because 60 percent of the U.S. paper industry's growth in recent years has been in exports. Also, tariff removals will increase the amount of goods packaged in recycled plastic containers that are exported to Mexico.

The impact of NAFTA on existing state laws remains to be seen. Environmentalists are concerned that some state laws that require minimum recycled content in products may be interpreted under NAFTA as non-tariff trade barriers. Others say NAFTA allows environmental regulation, as long as it has a legitimate objective and is only as stringent as necessary to meet that objective.

A bellwether program in regulating recycling has been Germany's green dot package recycling program. The program, named for the trademark that appears on products with recyclable packaging, has been in some trouble almost from its start in early 1993. The recycling program was created by industry in order to avoid mandatory consumer deposits on non-refillable containers, under a 1991 law which makes industry responsible for disposing of packaging waste. Problems which have emerged:

- Companies licensed to use the green dot reneged on dues, causing the recycling entity, DSD, to nearly go bankrupt;
- Waste collection has proven more expensive than expected and duplicated the existing trash pick-up system; and
- DSD collected more waste than German facilities and markets could handle — and consequently, recyclables flooded international markets (and at times even were dumped illegally).

Governments in the U.S. can learn many lessons from the German experience.

In Kentucky, state legislation passed in 1991 set a goal of 25 percent reduction in solid waste by 1997. Many states enacted similar provisions. Communities turned to recycling as a way of diverting materials from the waste stream and meeting the reduction goal.

As the cost of implementing recycling programs rise, communities and states are looking at new sources of revenue, including making the manufacturer responsible for a product from "cradle to grave." Approaches have included banning certain materials which cannot be easily reused or recycled, and recycled content requirements, both aimed at encouraging manufacturers to utilize materials which are recycled or recyclable. A study recently released by Franklin Associates Ltd. found curbside programs to be costly and ineffective in diverting recyclable materials from landfills. The study found other means of collecting recyclables, such as drop-off bins and buy-back bins to be much less expensive and surprisingly effective. City officials of Little Rock, Arkansas, estimate that their drop-off program costs 39 percent less than the cost of picking up the same amount of refuse and dumping it in a landfill.

Another approach has been to promote reuse over recycling; there is growing momentum to reuse waste materials rather than to discard them. Federal and state governments, as well as business groups, are increasing efforts to avoid costly waste disposal. One option

for reuse is to recover the energy value of the waste. The waste now disposed of at such a high price, if converted to its energy potential, would yield 10 percent of the energy used in the country. The U.S. Department of Energy has created the Waste Material Division, to research and develop technologies to transform waste into energy and economic resources that otherwise would be wasted.

IMPLICATIONS:

- The recycled goods industry may be a potential source of jobs for the state.
- The state may want to regularly monitor recycling efforts in other countries and states, in order to learn by their experiences.
- NAFTA rulings regarding waste and recycling will need to be monitored.
- If reuse is to be promoted, many policies and laws that inadvertently discourage reuse may need to be revised to reflect this shift in thinking. Budget priorities may need to shift from disposal programs.
- Drop-off programs for recyclables may be more effective in rural areas than are curbside programs.
- Public education will continue to be an important component of recycling and reuse efforts.

NATURAL DISASTER RELIEF

TREND: Some attitudes appear to be changing towards natural disaster relief, with emphasis on prevention instead of payments.

BACKGROUND: As floodwaters recede in the Midwest, the U.S. is at a pivotal point in floodplain management, says an article in *Environment* magazine. Floodplains are defined as lands subject to periodic inundation by hurricanes, storm tides, and rising waters caused by heavy rains and melting snow. About seven percent of all U.S. land, including much of the urban landscape, consists of floodplain. The article praises the work of the Federal Interagency Management Task Force, which recently issued a report commenting, among other points, that floodplain management efforts so far have succeeded in reducing loss of life, but produced no decline in overall flood losses. Such losses, in fact, have been increasing. No unified floodplain management program is in place, the report said.

Federally subsidized flood insurance was cited as one of the biggest culprits in perpetuating unwise floodplain development and consequent flood damage. Federal policy, the authors say, has encouraged better land-use management and other progressive approaches in recent years. But, they say, this approach has been undermined by flood-control and insurance programs that defeat the purposes of sounder policies.

Similarly, earthquake damage in the West has raised questions about the need for earthquake proofing buildings and teaching proper safety.

Leaders in Congress have noted that since fiscal 1988, Congress has provide more than \$27 billion for domestic catastrophes. Suggestions for addressing these costs include creating a reserve fund for disaster within the budget. (Currently, disaster aid is "loaded" onto the regular budget only when a disaster occurs.) Some think that the federally-required insurance for residents of floodplains should also be mandated for those living near faults. Others want to require all Americans to purchase disaster insurance — a kind of "national disaster tax" — because emergency is a shared responsibility and most Americans are potential victims of some natural disaster.

IMPLICATIONS:

- Any change in flood control or flood insurance policy will directly affect flood-prone communities of the state. Local communities may need to examine policies for building on the flood plain.
- Any retreat by the federal government from natural disasters relief assistance will affect Kentucky, which is susceptible to floods, tornadoes, and earthquakes.

- The state may need to examine its building codes in earthquake-prone areas.
- If federally mandated disaster insurance is not required of all Americans, but only those living in high-risk areas, Kentuckians living near the New Madrid Fault and in flash flood-prone Eastern Kentucky may be affected.
- The issue of a "disaster tax" could become a responsibility of the states. In other words, enactment of a disaster tax could fall on the shoulders of the General Assembly.
- New USDA regulations require agricultural producers to buy the minimum amount of crop insurance, in order to be eligible for farm program payments. This requirement is called cross-compliance. Similar approaches could be proposed for eligibility for disaster relief.
- A study of the vulnerability of Kentucky citizens and property to specific natural disasters might be useful in evaluating any policy changes.

THE FUNDING CRUNCH

TREND: Government services are costly, unfunded government mandates are plentiful, and good taxes are hard to find.

BACKGROUND: The cost to state and local governments of complying with federal requirements has increased steadily for some time. Opposition to these mandates, sparked partly by the extraordinary increases in state Medicaid obligations, seems to be having some, albeit limited, effect. When the 102nd Congress adjourned, 265 bills affecting state governments had passed or were being debated. Currently, NCSL's *Mandate Watch List* includes 239 bills, of which 190 would increase mandates and 49 would provide some form of relief. At least two Congressmen have proposed to limit the federal government's power in this area by constitutional amendment. City and county officials are particularly upset by the enormous costs they are now beginning to experience for previously adopted Congressional mandates on drinking water supply, sewage treatment, and solid waste disposal. Some states have adopted measures to focus attention on the effect of federal mandates. Missouri uses a special calendar that keeps track of every time its legislature has to vote on a federal mandate or money to fund a mandate. The Arizona legislature has established a Constitutional Defense Council with an appropriation of \$1 million for legal fees to sue the federal government over states' rights issues. Last year Indiana, unable to move needed fee increases through the legislature, announced it was turning back its authority to administer federal water pollution and solid waste programs to the U.S. Environmental Protection Agency.

The fairness and efficiency of several basic taxes have become issues. For over a century, local property taxes have paid for schools in most states, but this may be changing. Michigan's decision to cut property taxes and fund schools with an increase in the sales tax instead is seen by some as leading a national movement to change school funding fundamentally. Dependence on the property tax creates inequities between schools in wealthy and poor districts. Increasingly, school funding is put in jeopardy when the aging property owners in a locality lose touch with the often unrelated and poorer families with school age children and block school funding initiatives.

Growth in unrecorded transactions may be eroding income and sales tax revenues. Paul Starobin, writing in the *National Journal*, reports that the U.S. underground (or informal) economy has grown considerably in the last two decades. While unreported transactions by definition are hard to measure, they reputedly comprise a sizable chunk of the economy, perhaps in the vicinity of 10% or more of the formal economy. One reason for the growth may be a shift in the economy towards more services, which are easier to provide without leaving a paper trail. Other reasons cited for growth in the underground economy are large numbers of recent and sometimes illegal immigrants, and burdensome government regulation of legal businesses, creating an incentive to operate informally.

The sales tax, which originally was a broad tax on consumption, also has been limited over the years by numerous enacted exemptions, by difficulties in taxing services, and by growth in interstate catalog shopping. Several states have tried to narrow the typical exemption for groceries by taxing junk food. California's attempt to tax junk food angered voters so much that they repealed it in a ballot initiative. Enactments in Maine, Maryland and the District of Columbia may be more successful, according to an *NCSL Legisbrief*, because they are more narrow and specific in defining snack foods. They do not, however, add large amounts to state coffers.

IMPLICATIONS:

- Kentucky relies on property taxes to fund much of education and local government. While rates generally are lower than in states which have experienced taxpayers' revolts, such as California and Michigan, the utility of property taxes may be on the wane.
- Property taxes are very unpopular in part because they are not related to taxpayers' income. They are due whether or not the owner is out of work, or retired and living in a home which is taxed at a value far higher than its purchase price. Dependence on property taxes may continue to decline — if governments can find replacement revenues.
- Reports on income, employment, and other economic measures should be viewed with suspicion, because they do not take into account the underground economy.
- The effects on the underground economy should be considered in any effort to reform taxes or business regulations. Specifically, regulations should not prescribe activities without good reason, because this may force otherwise legitimate activities underground. While some underground activities, like drugs or prostitution, are illegal *per se*, many other business dealings remain informal to avoid perceived registration, regulation, and paperwork requirements which would outlaw or complicate them. Many people might be glad to "go legal" if other barriers were reduced or better explained.
- The cost effects associated with a federal mandate often will vary considerably from one state to the next. Costs also may increase dramatically over time, while most analyses make only a point-in-time estimate of state costs. Kentucky needs to stay abreast of the effect of federal requirements.

INSURANCE RISKS

TREND: States are examining their policies relating to insurance in many areas. Some are implementing programs to reduce doctors' malpractice exposure, and a California proposal would restructure auto insurance. There is concern that state guarantee funds to protect policy holders may set the stage for large future taxpayer losses.

BACKGROUND: In Maine, a new law helps shield doctors from malpractice suits if they follow state-approved treatment guidelines. The guidelines are being set by committees of doctors, as well as insurance, hospital and consumer representatives, for specific conditions, such as Cesarean delivery of babies or anesthesia. Doctors who enroll in the project and practice the state-approved protocols are protected in malpractice or pretrial proceedings. *State Legislatures* reports that other states are looking at this idea, and that similar programs are underway in Florida and Minnesota. While malpractice premiums can be very expensive, the larger culprit in rising costs is said to be the exorbitant price of "defensive medicine" practiced by doctors in order to avoid lawsuits. It is hoped that approved protocols, which provide a shield for participating physicians, will help doctors cut out the extra tests and superfluous procedures taken primarily to avoid lawsuits.

Last year a group in California proposed a dramatic restructuring of automobile insurance in that state. The proposal would replace current premiums with a surcharge on gasoline, as well as a surcharge on the annual automobile registration. Thus rates would be based on the amount of gasoline used rather than on the age, sex, or residence of the driver, while the amount of the registration surcharge would reflect the driver's record. Inclusion of a true no-fault provision would avoid most litigation, and the gas/registration surcharge would make it nearly impossible to drive without insurance. While the drive to put this initiative on the ballot in California was not successful, it sparked considerable interest and reflects a belief that smaller reforms have failed, so the entire system has to be rebuilt.

The above are two very different attempts to lower certain risks to policy holders. State-provided guarantee funds have been established by many states to protect life insurance policy holders from losses if the insurer goes bankrupt, thus reducing this type of consumer risk. There is evidence that these guarantee funds encourage insurance companies to take bigger risks than they otherwise would, leading to higher rates of insolvency in a cycle somewhat reminiscent of the S&L crisis. Life insurance company risk exposure increased during the 1980s, while capital ratios declined. Although, in the case of a default, the initial guarantee fund payments typically come from surviving insurance companies, these companies can deduct the payments from their state tax liabilities, effectively shifting most of the cost to state taxpayers. Writing in *Contemporary Policy Issues*, Elijah Brewer and Thomas Mondschean argue that states should not allow life insurance companies to receive tax credits for guarantee fund premiums.

IMPLICATIONS:

- States are not immune from the "first law of financial regulation: Government-financed guarantees, in the absence of adequate government oversight, lead to large government expenditures."
- The continued debate over auto insurance bears watching, given public interest in, and often dissatisfaction with, auto insurance products.
- Defensive medicine is one element often listed as driving up health care costs unnecessarily. Will set protocols for various conditions, if malpractice suits are limited, create new rigidities which get in the way of appropriate individual treatment?

GAMBLING

TREND: New jurisdictions continue to authorize casino gambling, often in hopes of creating jobs and prosperity.

BACKGROUND: Casinos have spread rapidly since 1988, when South Dakota became only the third state to offer this form of gambling. Today, about 1/2 of all states either allow riverboat or casino gambling, or have casinos on Indian reservations within their boundaries.

With the coming of riverboat casinos to border waterways, new state rivalry is brewing, not only between Kentucky and its northern neighbors, Indiana and Illinois, but also between Iowa and Nebraska, which share stretches of the Missouri River. To the extent that riverboat casinos remain popular, other states may also clash over their river boundaries.

The hope of new jobs, profits, and state revenues has fueled the rush to authorize casinos, much as promised state revenues persuaded state after state to establish lotteries during the last decade. The study "Legalized Gambling as a Strategy for Economic Development," by Robert Goodman, dampens these hopes of riches, however. Mr. Goodman finds no lasting economic development potential in most state actions to expand legal gambling. While new products typically enjoy rapid growth for a few years, revenues quickly flatten or decline. Much of the apparent growth of new gambling ventures is at the expense of existing gambling opportunities, and virtually all is at the expense of alternate consumer expenditures. Thus new casinos have hurt the established casinos in Nevada and New Jersey, as well as older activities like horse racing. Lottery revenues reportedly declined overall for the first time last year, and several states experienced declines in charitable gaming with the opening of casinos within driving distance. States which are dependent on revenues from established gambling activities have tended to assume the role of partners and promoters of gambling, rather than regulators, especially when these industries falter, lowering their takes and relaxing regulations to help the industry. This remedy erodes any state benefit from the industry.

Mr. Goodman's study sees the expansion of casinos as a speculative bubble, with temporary riches for early entrants, but almost certain overbuilding and a likely bust and failure of many enterprises when the market is saturated. Tunica County, Mississippi is one area already experiencing losses. Beginning in 1992, river casinos brought a boom to this economically depressed part of Mississippi. Now, amid an industry shakeup, two casinos have left and another is soon to follow. Public officials, according to the *Baton Rouge Advocate*, now worry about what to do about the "legacy of ... erosion gullies, abandoned barges and a paved and dramatically altered flood plain." Mississippi

reportedly is looking at legislation to require performance bonds for future developments that would cover cleanup costs at abandoned sites.

IMPLICATIONS:

- A proposal during the past session would have allowed casinos to locate only at race tracks in the state, in a plan to keep the ailing tracks viable by giving them a casino monopoly. This proposal was never actually submitted as a bill, but it or another measure to authorize new kinds of gambling may return. Kentucky could use the experiences and information from other states to evaluate any proposals.
- Gambling by itself may not be an effective approach to developing the economy of a community or region, unless considered within a broader development context.
- The development of new gambling facilities along Kentucky's borders will affect racing, lottery, and charitable gaming revenues whether or not the state legalizes additional forms of gambling. The state may need to consider options to replace lost revenues from these activities.
- A number of gambling initiatives lost in the November 1994 election, perhaps signaling public disenchantment with using gambling as a source of public revenue.

BUSINESS

TREND: American business, across many sectors, has become far more competitive.

BACKGROUND: The past few years have seen a dramatic turnaround for many American businesses. Conventional wisdom holds that the United States lags in world competitiveness behind Germany and Japan, yet a recent study of labor productivity in nine industrial sectors shows the United States ahead of Germany in all sectors, and leading Japan in four. American industry has recaptured its lead in personal computers and some electronics, and is closing the productivity gap in automobiles. Indeed, Japanese leaders, who only a few years ago expressed supreme certainty in the superiority of their products and methods, bemoan the loss of momentum in key industries. Japanese social scientists and economists trace Japan's competitive problems to a comparative lack of research and development, bureaucratic intransigence, and the renewed competitiveness of key U.S. industries.

Joseph M. Juran, who, along with W. Edwards Deming, is credited with paving the way for Japan to achieve the quality that is now the hallmark of its products, says American top management has begun to learn and apply the lessons which worked so well for Japan. He predicts that the next century will be the century of quality, as this century has been the century of productivity.

A prominent effect of restructuring in the economy has been the loss of manufacturing jobs in major Midwest industrial cities. However, a study published by the Federal Reserve Bank of Cleveland finds that the manufacturing jobs generally stayed within the old industrial belt; they merely moved to rural locations within the same large region. These plants continue to use many of the urban services of the large cities. Indeed, the study found that cities like Chicago and Cincinnati may be exporting financial and business services far beyond their usual region, becoming national or international service centers.

The number of non-profit businesses, such as charities and arts organizations, increased by 1/3 to 1.2 million over the past 10 years and, according to one study, now comprise 6% of the economy. Non-profits are said increasingly to offer services in direct competition with for-profit business; an example might be a museum book shop or a non-profit hospital's health club. Competitors call these practices unfair.

Not everyone, of course, shares the rosy economic outlook, nor have all sectors done equally well. Lester Thurow, author of *Head to Head*, believes that the United States must cut consumption of goods and services and increase investment, in order to remain competitive in the face of changed economic realities. He notes that after World War II, the U.S. so dominated the world economy that it could set world policy on such issues as

trade. Today the U.S. produces only 23% of the world's economic output. Previously insignificant players, such as China, are emerging both as potential competitors and profitable trading partners. There seems to be a growing role for the knowledge and information worker who can serve as a source of value-added to business and the overall economy.

To the extent that new opportunities lie in international trade, many of the more isolated rural firms may be left behind. Robert R. Sharp and Allen D. Engle surveyed small and mid-sized firms in Southeastern Kentucky, and found that few of these firms export outside the US. They also found that, while several respondents expressed an interest in developing foreign markets, few expressed willingness to invest in language or other global skills training for employees, or in belonging to a trade organization concerned with global issues.

IMPLICATIONS:

- To the extent that firms in Southeastern Kentucky, and perhaps in other rural areas, are not taking advantage of opportunities in international markets, this region could fall further behind the rest of the state and nation.
- The state may need to develop programs which give small firms explicit examples of how they are affected by internationalization, and training on how to initiate or expand their export efforts.
- The state may want to examine a policy relating to money-making ventures by non-profit enterprises associated with state parks or other state-operated or subsidized facilities. The Kentucky Council on Higher Education has long required each state university to develop this kind of policy.
- Kentucky might look to emerging countries, such as China, as it continues to seek new means to expand its economy. It might also want to consider a development strategy that targets regional blocs, such as the European Union and the Asia-Pacific Economic Cooperation (APEC) countries.
- Some U.S. states are helping their firms develop globally competitive organizations. Kentucky may wish to pursue this type of strategy more aggressively.
- Joint endeavors with such organizations as the World Trade Center, the United Nations Industrial Development Organization, and the United Nations Conference on Trade and Development, might be a good way to leverage state efforts to promote international trade.

WHITHER DEVELOPMENT

TREND: States and localities tend to compete with each other through financial incentives, while some notably successful programs exploit unique local assets.

BACKGROUND: The practice of states providing financial incentives to lure prospective employers has escalated significantly over the past 10 years, and so has the debate over the wisdom or effectiveness of offering these incentives. Several recent studies conclude that direct incentives, such as tax abatements, infrastructure contributions, or other subsidies, rarely are cost-effective in the long run. Nevertheless, states continue to enter, and escalate, the competitive bidding to attract firms which are relocating or expanding. A recent article in *State Government News* reported that the number of states with tax incentives for job creation increased from 27 in 1984 to 44 in 1993, and the amount of public expenditure per promised job has grown.

Part of the problem with direct incentives appears to be not only that so many jurisdictions offer them, but that they target the same kinds of investments. Thus foreign auto plants have been wooed by many states, presumably raising the price of attracting such a plant. Alabama's 1993 incentives to Mercedes to locate an auto plant there are estimated at \$169,000 per promised job. Candice Howe, in her 1993 book, *Japanese Auto Transplants and the US Automobile Industry*, calls into question the value of courting auto transplants as engines for broad economic growth.

Incentives typically are provided in exchange for assurances, but without any contractual documentation, that a firm will make certain investments and provide a number of jobs for a specific time. The case of Ypsilanti, Michigan, last year made it clear to many states that, lacking a specific contract, companies may not be obligated to do what they promised. The Michigan Court of Appeals found that Ypsilanti could not force General Motors to keep its local plant open, even though the company had solicited and received incentives and subsidies for that purpose. The courts have not always ruled in favor of companies; workers in Elkhart, Indiana, won a \$24 million settlement from Whitehall Laboratories for moving to Puerto Rico. In that case, the community also negotiated for the company to donate its empty plant and \$400,000 to the city to help it search for a new employer. Using another tactic to lessen the cost of losing a plant, the village of North Tarrytown passed legislation imposing environmental cleanup obligations on the company after General Motors announced closure of its factory there. This action has been appealed.

Concerned by the escalation in incentives, the National Governors' Association last year adopted voluntary guidelines to limit the tax breaks and subsidies that states give companies. These guidelines are:

1. Public resources should be used for development that otherwise would not occur;
2. Public subsidies should benefit and be available to all business, based on an individual state's objectives, identified criteria and calculated rate of return;
3. Public subsidies should be investments "in people," to develop an educated, skilled workforce and "in communities," to develop infrastructure needed for healthy economic development.
4. States should ensure that all development agreements include provisions for recouping subsidies when businesses fail to meet promised benefits; and
5. The distinction must be drawn between "incentive packages that help a single company" and "reinvestment programs, which channel tax dollars into resources that benefit the public and remain in the community regardless of the fate of a given company."

States and localities seem to flock at about the same time to other investment ideas as well. Convention centers are a recent example. Hundreds of cities are building or expanding their convention centers with public money, hoping for economic benefits and afraid of being left behind in the competition. Lawrence Tabak writes in the *Atlantic Monthly*, that most of these cities will be left with underutilized facilities and decades of debt.

States increasingly are entering capital markets by creating venture capital funds, or by directing their public employee pension funds to make "economically targeted investments" (ETIs). While there are many claims of success in federal or state financing of new enterprises, some question whether tax money should be used, or can be used wisely, in a speculative market. Similarly, many pension-fund executives are wary of being pushed into using pension money to fund projects that private capital markets consider to be poor investments.

Increasingly, both scholarly studies and anecdotal information point to the importance of tailoring economic development strategies to the unique characteristics of place. Martin and McHugh, for example, studied the productivity of two types of manufacturing firms in rural and urban areas. They concluded that the effect of rural or urban location on productivity varies with industry, size, and the timing of entry of the firm in the industry. Thus the best location for one firm may be very different from that of another, even in the same industry. Tupelo, Mississippi, is reported to be a model of economic development for small southern towns. Tupelo's Community Development Foundation targets small to mid-sized companies and encourages them to contribute to future economic development as part of their commitment. The community's long-term commitment to investment, substantial spending on education, and pragmatic approach to race relations also are credited as contributing to their remarkable success. Kansas City officials are targeting

their development strategy around clean air. The city is the heart of the largest metropolitan region in the country to meet the federal clean air standards for ozone. Roger Bezdek, analyzing several studies of the relationship between the stringency of environmental protection laws and economic growth, concludes that environmental protection has been a stimulus, rather than a brake, to growth. He also notes that environmental protection has created a solid, steadily-growing industry, which primarily is located in the states and nations which lead in environmental protection requirements.

In an effort to create viable economic strategies, some are trying to break down jurisdictional barriers and coordinate efforts across larger regions. In this context, the old idea of natural economic regions consisting of central city and hinterlands has been resurrected in the term "citistate." Geographic relationships still are relevant. The *Economist*, in an August editorial, notes that advances in telecommunications only give the illusion of overcoming barriers of time and space. In fact, physical proximity still is very important to business. Industries continue to cluster in cities or regions which offer some comparative advantage. Information-based services, which in theory should be among the most footloose, remain largely concentrated — futures trading in Chicago, insurance in Hartford, electronics development in Silicon Valley.

IMPLICATIONS:

- Business still values physical proximity, and once an industry is established, it often fuels its own concentration. Economic-development policy should recognize the limits imposed by these contingencies. States without a history of high-tech industry, for example, cannot easily create one by offering incentives.
- Kentucky may want to review its progress in environmental protection with respect to economic opportunities from stricter environmental laws.
- Given the prevalence of industrial targeting as a rural development strategy, policies might be more effective if they are informed by careful analysis to identify the advantages that some industries are able to exploit. Luring firms to a location less productive than that of their competitors could increase the subsequent departure of footloose firms.
- The concept of pension fund "economically targeted investments" is related to the idea that local banks or capital should, if possible, be used locally. Retirement systems in Kentucky are regularly pressured to make "economically targeted investments" and this is likely to continue.
- To reduce industries' "incentive shopping," which can be assumed to increase state incentive packages, states may consider regional agreements to limit the amount and scope of incentives.

- There have been calls for federal legislation to limit the amount states may give away to recruit industry.
- Kentucky, as a major player in state tax incentives, may want to incorporate into any incentives specific, contractual obligations by the recipients to remain in Kentucky for a certain period of time.
- Kentucky might want to consider complying with the principles adopted by the National Governors' Association, especially investment in its people and communities.

COLLEGE OPPORTUNITIES FADE

TREND: Rising tuition and cutbacks in student financial aid are widely blamed for a decline in educational opportunities for students from poor and working class families.

BACKGROUND: An *Utne Reader* article reported that poor students now attend college at less than half the rate they did in the mid-1980s, and make up less than 10 percent of the college population. Working-class students are said to be increasingly wary of going heavily into debt for college expenses.

Skewed federal formulas were blamed for lavishing aid on affluent students at pricey private colleges, while students at public schools who work to support themselves are ineligible for such support. It was pointed out that about two-thirds of Harvard students receive financial aid, including some from families with incomes of more than \$100,000.

Meanwhile, some educators say students who must work long hours to support themselves while in college are being short-changed educationally, because too little of their time and energy is available for academic work, and sometimes none at all for the extra-curricular activities that many consider a vital part of higher education.

IMPLICATIONS:

- Society may be headed toward sharper and more impenetrable class divisions as higher education becomes more costly each year.
- As college-level education becomes more and more essential but less and less accessible, will there be a movement for colleges to become tax-supported as high schools now are? Or is part of the answer the creation of stronger high schools so that traditional four-year college becomes less necessary for those whose marketable skills are not primarily academic in origin?

SKILLED TRADES ARE ATTRACTIVE

TREND: Skilled craftspeople, from carpenters to auto mechanics, are in short supply in many parts of the country and often are much better paid than non-professional white collar workers.

BACKGROUND: There is a growing volume of opinion that too many bright young people whose best talent may be other than academic are being encouraged by educators to shun skilled trades. A frequent result is a college dropout who has wasted time and money, or a college degree that leads to a career that provides less income and even less satisfaction than many jobs in skilled trades. Another result already showing up is a shortage of skilled workers that hurts the economy, some businesspeople say.

In its 10-year job forecast, the U.S. Labor Department says carpentry is one of the most stable job categories. Builders are expected to need 180,000 carpenters by 2000, and most such jobs pay high wages and benefits. As automobiles become more complex, demand and pay scales for "auto technicians" (the term mechanic is being shelved) are rising fast. Trained and experienced technicians are reported to be earning \$45,000 to \$50,000 a year. Similar situations are said to prevail in other skilled trades.

A recent study by two economists in *Contemporary Economic Policy* supports the view that the demand for skilled workers is growing faster than the supply. The chief evidence was the fact that the wage premium for skilled workers continues to increase.

IMPLICATIONS:

- The notion that vocational education is the place for slow students is said to be dying, but perhaps not fast enough to insure that the nation has the right skills to keep its economy thriving.
- High schools may be challenged to give students an education good enough to provide at least the level of literacy and information needed for good citizenship. Thus, students could turn to developing skills either on the job, in vocational schools, in apprenticeships, or, if in college, be able to move ahead without remedial education to fill gaps in their earlier schooling.

PRE-SCHOOL EDUCATION

TREND: Studies continue to show lasting benefits from high-quality pre-school education programs, especially for children from disadvantaged homes, while casting doubt on the long-term usefulness of lower-quality programs.

BACKGROUND: The High/Scope Perry Preschool project has been the most widely watched study of the effectiveness of pre-school programs for disadvantaged youngsters. Currently participants in the program have been studied to the age of 27 and compared in achievements with those who did not participate in such a program.

The Michigan program has been considered by many educators as one of the best of its kind, and periodic reports on its accomplishments have been consistently favorable. The report on participants at age 27 shows that participants had significantly higher earnings, higher percentages of home ownership and second-car ownership, higher levels of school completed, less need for social services, and significantly fewer arrests than those in the non-attending control group.

IMPLICATIONS:

- If high-quality pre-school programs are available to disadvantaged children, the result should be more productive citizens in future years, less crime, lower welfare expenditures, and more stable families.
- All such programs should be monitored on a long-term basis, to insure not only that immediate results are obtained, but that the results have lasting value, as seems to be the case in the High/Scope program.
- Demographic information shows that Kentuckians are having fewer children, and every child will be needed as a productive member of society. Every child deserves the opportunity to succeed. Access to pre-school opportunities for all at-risk children will be a concern.

SCHOOL CONSOLIDATIONS

TREND: Consolidation of small schools may be an idea whose time has come $\frac{3}{4}$ and gone. Educational thinking throughout the country has until recently clung to the thesis that large schools, particularly at the high school level, were necessary to give students the variety of classes, particularly advanced ones, that the times demanded. But alternative ways of reaching this goal are in sight.

BACKGROUND: Many voices are being heard recently suggesting that the community spirit and involvement that traditionally have been the hallmarks of the better small high schools do not have to be sacrificed in the name of broader academic offerings.

Tom Gish of the state Board of Education, has been among those suggesting that technology can allow smaller and more manageable schools to provide a broader curriculum. Kentucky Educational Television already offers interactive courses in several schools at a time, so that a school may offer physics, Japanese, or Latin, for example, even though only two or three of its students sign up for these subjects. These students will have toll-free access to tutors to help them with parts of the subject matter that may be puzzling.

Small schools now have access to voluminous library resources via computer. KET says students not only learn well through computer/video/telephone classes, but that small groups tend to work as teams and help each other.

It also has been suggested that technology may lead to new configurations at larger schools, designed to provide a better sense of community, more involvement by parents, and a healthier climate of student interaction.

IMPLICATIONS:

- A trend toward smaller schools could reduce transportation costs and time wasted on daily travel, while making extra-curricular activities more practicable for many.
- A movement toward smaller schools could, however, complicate efforts to reduce racial and economic barriers. New thinking on the subject of education's role in unifying a diverse nation and diverse larger communities may be required.

THE ENERGY BOUTIQUE

TREND: The variety of energy options $\frac{3}{4}$ and the opportunity to make energy choices $\frac{3}{4}$ is growing. Several renewable energy technologies are now competitive, or very nearly so, in producing electricity. The local service monopoly of electric companies may be falling to competitive forces. And drivers may soon have the factory option of a gasoline, diesel, methane, compressed natural gas, or electric motor for their new vehicle.

BACKGROUND: In its recent report, "Powering the Future," Worldwatch Institute predicts that "New technologies and a more competitive market will severely shake the \$800 billion-a-year electric power industry." Consumers one day could meet their energy needs by bargaining for power purchases from distant sellers, by using fuel cells, or by contracting with a wind farm. Pressured by this real competition, some of today's large, debt-burdened power companies may break up, and many large, high-cost plants may shut down, according to Worldwatch.

While this vision of the future may seem unlikely, some new competitive elements definitely are emerging. Amendments to the Clean Air Act, which require electric generators to reduce sulfur dioxide (SO₂) emissions, established tradable emissions credits instead of setting requirements for each plant. The Chicago Board of Trade conducts auctions to handle trade in these credits. The Department of Energy recently reported that compliance with the Clean Air Act has been less expensive for electric utilities than expected, and that only 10% of plants had to install expensive scrubber facilities to meet first-stage emission reductions. Environmentalists also have discovered the emissions credit market. A long-distance phone company, Working Assets, kicked off a program last year to buy SO₂ allowances with funds contributed by customers, thus making them unavailable to utilities.

The 1992 federal Energy Policy Act (EPACT) obliges existing companies to make their transmission grids available to competitors with low-cost power, so they can sell to other utilities. This "wholesale wheeling," transporting power for sale to utility companies, but not directly to customers, has been required in very specific situations since the 1970s, and enabled many of the existing alternate energy generation facilities to be built. The new law does not itself oblige utilities to transport power for customers, such as large industries — that is called "retail wheeling" — but it allows states to order retail wheeling if they have that authority under state law. In late 1993, Nevada became the first state to pass a bill to allow retail wheeling. The bill was part of an economic stimulus package attempting to attract a steel mill to the state, and is seen as a new tool for states trying to attract private sector investment. Michigan has authorized a limited, five-year retail wheeling

"experiment" between the state's two largest utilities, and bills to expand retail wheeling have been drafted or considered in several states.

The debate over whether and how each state should allow retail wheeling is likely to be contentious. While proponents hope it will lead to greater generating efficiencies and lower costs, opponents fear the open competition will destroy utility-based conservation and environmental programs, force high-cost plants to be abandoned, and raise rates to residential and small business customers who cannot go to another supplier. A coalition of almost 60 organizations recently formed to oppose electric retail wheeling across the United States.

Several renewable energy technologies have matured into industries producing dependable products at affordable prices. *Solar Today* reports that several renewable technologies now produce energy more cheaply than any of the fossil fuels did in the early 1980's, when solar, thermal, wind, photovoltaic and biomass were touted as solutions to energy shortages and dependence on imported oil. Since 1980, however, the cost of petroleum and natural gas also have dropped substantially, which has slowed the market penetration of renewables. The industry has grown nevertheless. Wind turbines are being installed more widely now; developments are underway in at least seven states, following the lead of California. The U.S. wind industry aims to install 10,000 MW of wind capacity by the year 2000. Also a consortium of 68 utilities formed in 1993 plans to buy \$500 million worth of solar panels within six years for use by its member utilities.

A consortium of five universities, sponsored by the U.S. Department of Energy and headquartered at the University of Kentucky, has been working for a couple of years on ways to convert waste materials — plastics, rubber tires, paper and other stuff mixed with coal — into oil. They figure that about a quarter of the country's wasted materials could be converted into two percent of the nation's transportation and fuel requirements. Preliminary estimates are that their current process can produce oil for \$18 to \$20 per barrel.

Renewable technologies are widely favored, and their development has been encouraged by public policy, because they do not deplete resources and generally are cleaner than conventional energy sources. Analysts see several scenarios for further development. Some analysts, though by no means all, expect oil prices to surge in the near future. Higher fossil fuel prices certainly would expand the market for the more competitive renewable technologies. Another scenario depends on government intervention, primarily through the utility regulatory process, as the best way to expand markets for renewables. Utility regulatory commissions in several states currently include an estimate of environmental costs when choosing between competing generating technologies, which is one example of this type of regulatory policy.

Not everyone believes renewable industries need outside help to grow. James Caldwell, Jr., writing about the photovoltaics industry in *Contemporary Economic Policy*, predicts unspectacular but steady growth for that industry. He notes that this technology currently

is competitive for certain niche markets. The products will continue to improve and costs will drop step by step, through small research discoveries and production improvements, as companies develop these markets. Each improvement will increase the industry's competitive position, increasing market size. He argues that we should not expect a spectacular scientific breakthrough to revolutionize electric generation. The photovoltaics industry — and by extension, other renewable industries — must first develop products to serve low-density markets in suburban and rural areas, and then grow steadily.

Finally, non-petroleum vehicles will be available for purchase from major manufacturers in the near future. Electric, propane, methane, compressed natural gas and even hydrogen-powered vehicles have been around for some time, but mainly as custom-built or retrofitted demonstration vehicles. Commercial production of low-emission vehicles (LEVs) and zero-emission vehicles (ZEVs) is being pushed by public policy rather than the market. The 1992 Energy Policy Act requires more alternate fueled vehicles in public and large private fleets, with proportions increasing year-to-year. California and some Northeastern states have set deadlines for companies to sell ZEVs and LEVs within their states. Louisville recently became the nineteenth city in the country declared a Clean City by the federal government, because of its effort to use more alternative fueled vehicles, primarily ones equipped to run on compressed natural gas.

IMPLICATIONS:

- If solar power is to become a major source of electricity through the slow development of rural and dispersed markets, the Kentucky General Assembly may want to encourage increased use of photovoltaic electricity in rural areas.
- At least two of the renewable resources, solar and biomass (biological matter), are widely available in Kentucky, so development might benefit the state. The region generally is less suitable for wind power.
- Major increases in renewable energy would affect coal markets. Major growth of non-combustion technologies will alter the location of power generation, affecting prominent industrial concentrations like the Ohio River Valley.
- If a campaign to buy up pollution allowances became widespread, that could impact electric utilities' compliance strategy, encouraging more fuel switching and scrubber installation than otherwise would occur. That could affect Kentucky coal markets.
- The apparent success of SO₂ trading seems to show that new market-based approaches to pollution control can work, and might replace "command and control" enforcement strategies in other environmental areas as well.
- If large users can leave current electric systems (retail wheeling), residential customers will bear an increased economic burden, particularly for new power plants. Will consumers be willing to pay some subsidy to attract possible new jobs?

- Currently, Kentucky enjoys some of the lowest electric rates in the nation. If retail wheeling spreads, Kentucky may lose the competitive advantage of these low rates. On the other hand, retail wheeling may spur demand for Kentucky-produced electricity and coal.
- If the use of alternate fueled vehicles increases significantly, the current system of maintaining state roads through a fuel tax at the pump may need to be altered.

THREE STAGES OF OLD

TREND: **The growing elderly population is forcing adjustments in the workplace, housing, health services, and relationships between generations.**

BACKGROUND: The size and proportion of the population over 50 has been growing for decades, with the very old (over 85) outpacing all other age groups. In discussing trends which affect the elderly, it is useful to divide this very diverse group into young (50-65), middle (65-85) and very old (85+) subsets, groups which have little in common except gray hair.

As the older baby boomers turn 50, the *Wall Street Journal* reports a mounting generational gap in the workplace. After rising only 3% in the 13 years before 1992, the number of workers over 55 is expected to rise 38% in the 11 years between now and 2005. While gray hair is expected in the executive suite, younger managers increasingly see their older employees as management problems — rigid, hard to retrain and too expensive. Corporate downsizings have sharply struck workers 50 and older, and many reportedly believe they have no choice but to accept an early retirement offer, if one is made. Today's older workers often are financially unprepared for retirement, and feel pressure to stay on the job unless forced out. A study by the National Institute on Aging and the University of Michigan shows that 40% of workers 51 through 61 have earned no pensions for retirement other than Social Security. Some 14% have no health insurance, and 20% no savings or real estate. Studies repeatedly have shown that older workers perform no worse than their younger colleagues, and some companies have been very successful retraining or utilizing older workers. However, these are a minority, and many of these recruit older workers and retirees only for low-paying jobs with few benefits. Work place tensions are bound to escalate as workers 40 and older turn to the courts for protection, and managers find it difficult to fire older workers because of age-discrimination laws.

The 50-65 year age group also appears to be the "sandwich generation" of the 90s, as people nearing retirement increasingly find themselves caring for children as well as parents. For the first time since the 1920s, the trend is for more young adults to live with their parents or to return home after college or military service. The 1990 census found that 21% of 25-year-olds who live in households were living with their parents, up from 15% in 1970. And increasingly, people are living into their 80s and 90s, so the children to whom they turn for help when their health fails typically are themselves over 50. Studies suggest that 2/3 of all home care assistance to the elderly is provided free of charge by family or friends. This is a concern for employers because workers who care for an older relative inevitably face conflict between work and home. According to Patricia Braus, writing in *American Demographics*, employers complain that these workers display excessive absenteeism, lateness, and excessive personal telephone use. Those who are

financially able to do so often leave the work force. The article predicts that companies increasingly will offer eldercare benefits, along with those offered for child care, such as unpaid leave, flexible work hours, or dependent-care spending accounts.

The vast majority of America's elderly want to live independently, preferably in their own homes, as long as they can. While the populations in nursing homes will continue to grow, the average age of residents has been rising for some time. Home health care spending was estimated at \$21 billion in 1993, with continued growth predicted. An article in the *Economist* lists several changes needed in home design and public services to help the elderly remain independent. These include "granny flats" — accessory apartments added to or carved out of single family homes. While zoning ordinances still block these accessory apartments in most U.S. suburbs, they are widely encouraged in Canada, and HUD is introducing programs to encourage their use. Cheap, specialized transportation for those who cannot drive is another need noted by the *Economist*. Statistically, drivers over 75 have more accidents than any other group of drivers over 18. There are efforts in some states to require retesting of older drivers and to revoke some licenses, but many elderly drive because they have no alternative. Periodic visits from a helper to cook or do housework is another way to help keep the elderly in their own homes. Improved screening and oversight of in-home health aides may become an issue as this kind of care expands. The *Courier-Journal* in June reported several local cases where caregivers abused, stole from or defrauded their charges. Indeed, another need listed in the *Economist* is protection from consumer fraud, which it predicts is sure to grow as the population ages.

The middle group of elderly, those who have retired from the work force but who are still active and able to live independently, seem to have the fewest problems. Yet it is this group, paradoxically, which may pose the greatest challenge to society. The past two generations have seen older people living much longer, with higher incomes and better health than ever before. As the large baby boom generation nears retirement, doubts have been expressed that the nation, i.e., younger taxpayers, can continue to support the elderly for a period that may be longer than their working lives. Many of the active elderly or near elderly would rather remain productive than survive decades of leisure at public expense, yet they find that most opportunities to adapt to new careers or tackle significant projects are closed to them. In this area, public thinking and public policy need to come to terms with the reality that retirement no longer is a relatively short respite from hard manual work. "Less-developed" societies typically find gentle, sedentary jobs for the elderly to take away some of the burden from the working young and middle-aged. Finding meaningful, productive roles for the "able retired" will be an important challenge for the 21st century. According to the editors of *Achieving a Productive Aging Society*, Sweden has already announced the national aim of expanding opportunities for older adults. Needed steps discussed in the book include changing public anti-age discrimination, opening the doors of all institutions for interested and capable elders, and placing a value on the many activities not appearing in the GNP.

IMPLICATIONS:

- Kentucky, with its large proportion of senior citizens, has an interest in exploring ways to help older people who wish to remain productive rather than consume public funds.
- We can expect rapid growth of elder-care services, such as day care, visiting nurses, people who run errands or shop for shut-ins, health equipment rentals, and sales of home-care products. Need for additional consumer protection regulation likely will accompany this growth.
- With more women working, the difficulty of finding dependable care for an elderly relative is likely to be a matter of public debate, like child care. Day care centers and groups which screen and license caregivers are likely to multiply. Illegal grandmahelpers from developing countries, like illegal nannies, may force changes in immigration laws.
- Efforts to require driver tests for license renewal after a certain age, or to revoke licenses of impaired older drivers may meet strong political opposition.
- Any change in household size and composition is likely to have broad effects. Young adults staying home longer or returning home could reduce the market for small apartments, for example, and the demand for government services, such as public assistance, which take the place of traditional family functions. An increase in apartments for elderly relatives within a home would have similar effects.
- Generational clashes in the workplace will affect productivity. Under-utilization of older workers, or forced early retirement, wastes a resource and may increase demand for social services.
- The retirement of baby boomers should open up significant advancement opportunities for younger workers, and eventually create a much better job market.
- An aging population means an increasing portion of our citizens will be living on pensions and wealth and public assistance, as opposed to ordinary taxable income. This has serious implications for the state regarding both revenues and expenditures.
- Government services and benefits, such as medicaid, medicare, and social security, will increasingly compete with similar services and benefits to families and children.

PLIGHTS OF CHILDREN

TREND: The health and well-being of children in the United States has deteriorated over the past decade. Reputed causes and proposed solutions are myriad.

BACKGROUND: The United States is mired near the bottom of the industrialized world in child health, according to UNICEF's world survey, "The Progress of Nations." Moreover, the report shows that the U.S. is one of only two major industrial nations that have seen the health status of children deteriorate over the past two decades.

The other nation is the United Kingdom, but all children in the UK are covered by a national health program, and the UK has a far lower percentage of children living in poverty than does the U.S. The child poverty rate in the U.S. is twice that in any other developed country, and has increased from 15% in 1970 to the current 20%. In Kentucky, more than 25% of children under 5 live in poverty.

The U.S. ranks 19th among developed nations in death rates for children under 5 and is similarly low in rates of immunization. The only rate for which the U.S. was listed as leading the industrialized world was murder.

Income, education, and health status are known to be related, so increased poverty itself may be a cause of worsening child health. A study published in the *New England Journal of Medicine* found that the health gap between affluent, well-educated people in the U.S. and the poor and poorly-educated widened significantly between 1960 and 1986, the last year for which data were available. That study was limited to mortality among adults aged 16-64. The index used to measure inequality in death rates more than doubled from 1960 to 1986, the latest year for which data were available. The gap is not merely a measure of access to health care, because similar studies in Western European countries with universal health care also have found a disparity in death rates based on income and social status.

Children generally are thought to suffer from the loss of traditional, stable families. The long-term increase in single-parent families also is a factor in increased child poverty rates. Divorced mothers are the dominant type of single parent, but the number of never-married women having children also has increased sharply. The GAO reports that, of the single mothers receiving welfare, the proportion who were never married more than doubled from 1976 to 1992, from 21% to 52%. It also notes that welfare mothers are more likely to have a high school diploma, and to have fewer children than in 1976. One unintended effect of parental consent laws, which require parents' consent before a minor can have an abortion, is that these appear to increase births to adolescents by about 10%. Research

shows unwanted children and children of the youngest mothers to be the most at-risk for developmental problems, neglect and abuse.

Finding ways to help single mothers out of poverty and off the welfare rolls is a major concern of states, as well as the federal government. Successful pilot programs in New York and Florida have received publicity; both provide beneficiaries with a full range of social services, including child care, to help them enter the work force. In New York, a private firm called America Works contracts with the state to find jobs for welfare recipients, and receives payment only after the individual is employed for 9 months. In Florida, as in proposed federal programs, recipients lose benefits if unable to find work within 2 years. Maine is one of several states trying to collect more child support from non-custodial parents who default on their child support payments. A new Maine law takes away licenses, including business, professional, and drivers' licenses, from parents who are more than 90 days late on payments for their children. In the first year, the state collected nearly \$13 million. Kentucky enacted a similar law in 1994. According to the Children's Defense Fund, less than 3% of people default on used car payments, while 49% default on child support agreements, in part because they can get away with one but not the other.

IMPLICATIONS:

- It may be necessary to look to other countries to find ways to give children's needs higher priority. Children don't vote or control significant wealth in any country, yet other countries seem nevertheless better able to address their needs.
- Continued emphasis on improving education in Kentucky may have corresponding positive effects on the health of Kentucky children.
- Private sector involvement may be considered in future welfare reform initiatives.
- The needs of parents as they relate to their children may need to be addressed. Parenting classes and other counseling for young mothers might help reduce risks of abuse and neglect for their children.

HEALTH SPENDING PRIORITIES

TREND: Health spending priorities are being questioned in several areas.

BACKGROUND: Most policy makers agree that, in a time of high costs and limited budgets, it is important to target health care outlays where they will do the most good. Several recent reports question the wisdom of a variety of health programs, practices, and spending decisions.

In the area of child health, programs to further reduce exposure to lead may carry very high costs relative to benefits. Since the main sources of lead were taken off the market - leaded paint, gasoline, and water fixtures - exposure has declined considerably. There has been more than a 2/3 reduction in U.S. citizens' average lead levels since the mid-1970s. Some question whether additional efforts to remove existing lead paint or test all children for levels of lead are needed. One pediatrician, quoted in *The Wall Street Journal*, notes, "We see malnutrition, homelessness, child abuse, lack of immunizations, violence and pediatric AIDS in children. But we haven't seen a child sick from lead poisoning for many years." The article goes on to describe two very different programs to further reduce children's lead exposure. Massachusetts passed a law requiring lead removal for all dwellings with children under the age of six. The result, according to the article, has been rocketing insurance premiums, petty litigation, discrimination against renters with children, and a net loss of low-income housing. Minnesota has taken a different approach, which focuses on parental education, programs to limit dust in urban yards, and "swab teams" to clean up dust in low-income housing. Minnesota directs state agencies not to disturb intact lead paint in low-income housing unless it clearly is poisoning children.

The use of powerful and expensive treatments for terminally-ill patients is another area of controversy. According to one estimate made by the University of Virginia Medical School, half of a person's total lifetime medical expenditures occur in the last 60 days of life, and the U.S. Surgeon General has estimated that 70 - 90% of public health expenditures are spent on the last few months of life. In some part, this is because doctors and patients' families demand costly treatments and extraordinary steps in futile attempts to prolong the lives of terminally ill persons. There is interest in discouraging treatments which do not significantly improve nor extend life. Mark Godel, of the National Institutes of Health, has floated a radical solution; he proposes a federal law that would declare medical care in the last 30 days of life to be free of charge, except for the cost of basic care to maintain comfort and dignity. He also proposes to limit malpractice lawsuits over care given during the last month of life. He argues that doctors and hospitals, knowing they might not be paid for futile attempts to prolong life, would not undertake them, and that patients families would be less able to pressure doctors to order costly and futile treatments.

The Center for Risk Analysis at Harvard's School of Public Health recently released a major study of the cost/benefits of nearly 600 preventive measures. Researchers analyzed the literature, government reports, and health data bases to estimate the cost, using each measure, of saving a year of life. The study found that, while the cost of saving lives varies enormously by the type of intervention, the most cost-effective preventive measures tend to be quite simple. In general, relatively inexpensive medical procedures, such as immunizations, drug and alcohol treatment and prenatal care, are far more cost-effective in terms of saving lives than expensive and overly broad programs, like safety regulations and pollution control systems. In part this is because safety and pollution programs, like screenings for rare non-infectious diseases, must reach a very large number of people to benefit a few. The study affirms the value of wellness-oriented and preventive programs offered by employers, many of which have been cut as corporations trimmed budgets.

The benefits of some pollution control programs may be underrated, because we do not yet recognize the full effects of chemical exposures on public health. There is some evidence that environmental exposure to a wide variety of chemicals in today's environment is causing widespread maladies.. A study in the *Journal of the American Medical Association* found that white men born during the middle of the baby boom are three times as likely to get cancers unrelated to smoking as their grandfathers were. White women born between 1948 and 1957 were 30% more likely to develop cancers unrelated to smoking than were their grandmothers. These increases were apparent across all age groups. Chemicals that resemble the human sex hormone estrogen are suspected agents in apparent worldwide decreases in average sperm counts of men since 1938, and in worldwide increases in breast cancer and endometriosis rates in women over several decades.

There is no question that many public education and hygiene programs have been highly effective. Society may need to return to these, according to a March, 1994, story in *Newsweek* about drug-resistant pathogens. The article notes that improved medical treatments are not behind most of the spectacular health gains of this century; instead, better understanding of disease gave us the knowledge to create environments which promote health. Antibiotics have been overused, sometimes as cheap alternatives to hygiene and other effective health practices, and this overuse hastens the development of resistant bacterial strains. In agriculture, antibiotics routinely are mixed into feed or added to livestock water, a cheap but short-term measure which hastens the development of resistant organisms.

IMPLICATIONS:

- New findings about hazards from chemical exposures may feed a new wave of concern with occupational and environmental safety, concern with conditions which previously were thought safe.
- Changes in approaches to medical research and treatment may be needed at medical institutions to find new treatments and to eliminate the unnecessary use of antibiotics

in people and animals, which has served to speed up the development of drug-resistant bacteria.

- Designing targeted programs may be more important to costs than deciding what to target, as shown by the huge cost differences between Massachusetts' and Minnesota's lead abatement programs. States may be more careful in targeting proposed solutions as nearly as possible to the actual problems, and avoiding shotgun approaches.
- Cost/benefit data, such as that developed at Harvard's School of Public Health, may have important policy implications for spending priorities.
- Health care reforms may look at ways to discourage futile treatments of terminally ill patients. However, ethical questions are likely to arise in such an undertaking.

CRIME AND PUNISHMENT

TREND: Public concern about crime has resulted in tougher punishments for criminals and record increases in prison populations since 1980. Concerns about the destructive effects of public fear, and the apparent failure of "get tough" punishments to deter crime, may signal a coming shift in both perceptions and policies.

BACKGROUND: Spending by states on corrections grew almost twice as fast as overall state spending from FY 1982-1992, and, according to *State Legislatures*, grew faster last year than any other category, including Medicaid. This reflects a dramatic increase in the number and proportion of the population behind bars. The U.S. incarceration rate - counting inmates of all prisons and jails - held fairly steady from 1940-1980 at between 160 and 200 per 100,000 population. It now stands at 519 prisoners per 100,000 people, one of the highest incarceration rates in the world.

Despite the enormous increase in prisoners behind bars, Americans believe themselves more in danger from criminals than ever before. Public opinion polls consistently rank crime as the first or second issue of public concern. The perception that violent crime is an epidemic out of control has pushed congress and state legislatures to enact tougher mandatory sentencing and provisions like "three strikes" laws, along with much tougher community corrections programs. Repeated crimes by violent youth offenders have spurred calls to open the criminal records of some minors to protect the public.

Several of last year's scans pointed to likely shifts in the near future, both in the public perception of crime, and in the best ways to deal with criminals. First, crime statistics fail to substantiate major increases in crime or violent crime. The FBI Uniform Crime Index for the nation as a whole, for example, which tracks categories of reported crimes per 100,000 population, rose from 1985-1990, but this merely offset declines between 1980-1985, leaving the 1990 index slightly lower than a decade before. Rates have stabilized considerably since 1990. Nationally, reported violent crimes fell 3% and property crimes fell 5% between 1992 and 1993. Crime in Kentucky lags well below national levels, and those rates have fallen for the past two years.

The apparent contradiction between the statistical record and public perception of crime trends may be partly a matter of media attention. New violent crimes like carjacking get intense media coverage and may leave an exaggerated impression of risk. New data also focus on crime. The government only recently began systematically collecting data on workplace violence, with the first report issued in late 1993. In addition, the public may be justly alarmed by trends which are masked by an overall crime index or its violent crime components, such as a dramatic increase in very young offenders, or children bringing weapons to school.

Overestimating danger, perceiving more criminals than there are, also creates problems. The *Kentucky Journal* devoted much of its November/December 1993 issue to crime in Kentucky. Paul Cooper noted that many Louisvillians were buying guns for the first time for self-protection, and worried that people may be placing themselves in real jeopardy by overestimating crime risk. According to the article, firearms in the home increase the risk of homicide there. They also play a part in accidents; firearms are the fourth leading cause of accidental deaths of children aged 5-14. With respect to children's deaths, NCSL reports that 10 states have enacted laws which hold adults liable in some circumstances when children gain access to firearms. Kentucky has such a law. Another *Kentucky Journal* article discussed damage to the predominately law-abiding people in a neighborhood when police and outsiders view it as crime-ridden and dangerous. Police lose any non-surveillance contact with the people. Excessive policing easily can use up resources needed to build a viable neighborhood. On another note, pressure to convict someone, especially for heinous crimes, may encourage prosecutors to falsify evidence. In July 1994, Gannett News Service reported many cases where the police, prosecutors or scientists lied or fabricated evidence to get convictions. Those who are caught rarely are punished, according to the article, and no one regulates crime laboratories to ensure that tests are performed properly.

If crime rates indeed have stabilized or are decreasing, then it would seem that the harsher prison sentences and community surveillance of convicted felons is working. However, as Rutgers University professor Jim Finckenauer observed in 1982, the history of corrections in this country is a history of failed panaceas, where new ideas repeatedly are oversold, then discarded when they cannot meet the exorbitant expectations set for them. Just as the focus on treatment and rehabilitation of the 1960's and 1970's was discredited when programs failed to deliver the promised results, so programs operated in the present philosophy of crime control through punishment are beginning to show cracks. If nothing else, it is very expensive to lock up more and more people for longer and longer periods, and this takes money from other needed programs. Increasingly, critics argue that the cost of jailing offenders is paid for by cutting the very community service and recreation programs which can help keep youths out of jail. The Trust for Public Land, a non-profit organization based in San Francisco, has bought more than 1,000 urban properties to protect them as park land. That group recently cited numerous cases where local crime declined dramatically with the opening of new recreation opportunities.

Another criticism of current sentencing and corrections is that prisons are filling up with non-violent offenders, not those who truly are a threat to society. Drug offenders grew from about 8% of all commitments to prison in 1981 to more than 30 % in 1992. Prisoners incarcerated for violating probation or parole conditions increased from about 17% of admissions in 1980 to 30% of admissions in 1991.

James Byrne and Mary Brewster, writing in *Federal Probation*, predict a coming shift in correctional policy, characterized by a "rediscovery" of correctional rehabilitation. They note state and local activity aimed at redefining appropriate punishment for crimes, and the

use of alternatives such as day fines, community service, or house arrest in exchange for prison time. They predict greater use of these alternatives in the future. A dramatic increase in use of shock probation reported for Kentucky during the past 2 years might fall into this category. The authors envision that by the end of the decade, 1/3 of all offenders, including most drug and alcohol offenders, will be placed in non-prison programs which "combine elements of punishment and treatment reinforced by a structured hierarchy of sanctions for offender noncompliance." The sanctions would incarcerate violators only as a last resort. Thirdly, Byrne and Brewster foresee a return to community-oriented probation strategies, which will take probation officers out of the office and reintroduce them into the community. If these reforms are undertaken, prison populations as well as crime rates might begin to recede.

IMPLICATIONS:

- Kentuckians, like the nation, are engaged in a debate about how best to fight crime, and it is likely to be ongoing for some time. Do we focus on the roots of crime, or on convicting and incarcerating criminals? Should we use money from fines for correction facilities or for something like parks or education reform?
- When the legislature considers any increased punishments for crimes, it also must consider the cost of incarcerating prisoners. The new federal crime legislation increases sentences for some crimes.
- The apparent contradiction between actual and perceived crime rates might warrant a detailed investigation of available statistics, and a concerted effort to present Kentuckians with a realistic picture of risk of victimization by various types of crimes.
- As long as the public feels threatened by random acts of violence, they will continue to buy and keep weapons for defense. The state may need to target firearm safety education efforts to new and nontraditional groups of owners.
- Undue repression in areas considered to be crime-infested, due to fear by the authorities, can and does create violence. Neighborhood policing, and increased dialog between racial groups and neighborhoods might help decrease tension and fear.
- Spending for school sports and community recreation programs might be reconsidered from the perspective of crime control. Parks and playgrounds are less expensive than prisons, and seem to help some young people avoid crime.
- More careful regulation of crime labs and certification of experts may be needed.

CIVIL LAW AND MANNERS

TREND: **Developments in employment law are likely to keep the courts as busy as environmental law has done in the recent past. On the environmental and land use front, business and property owners are fighting back against regulations which lower property values by limiting uses. Two recent books decry the loss of traditional American responsibility and civility.**

BACKGROUND: Kentucky Supreme Court Justice Charles Leibson recently predicted that employment law, not environmental law, will be the legal community's "wave of the future." Justice Leibson's statements referred mainly to questions raised in recent cases before the Kentucky and U.S. Supreme Court concerning the question of when an employee suffers actual damages from an abusive work environment. Issues in this area are likely to be greatly contested, in order to define the bounds of improper behavior in the workplace.

Age discrimination is another area of increased litigation; the Equal Employment Opportunity Commission (EEOC) reports a 14% increase in age-bias suits during the past two years. According to a recent *Wall Street Journal* article, tension between older employees and their juniors is increasing, and older workers are especially threatened during corporate downsizing.

Two years after passage of the Americans with Disabilities Act (ADA), the EEOC also is receiving record numbers of charges of violations against disabled worker protections. According to the *Employee Relations Law Journal*, the commission expects ADA cases ultimately to comprise 30 percent of its workload. Part of the problem seems to be that many employers are not well versed in the law, and especially have difficulty with impairments which are difficult to "see," such as mental impairments. The article predicts numerous trials and court decisions within the next two years, since many aspects of the law will not be established until the courts have developed a substantial body of case law.

Bills to protect private property owners from environmental regulations were introduced in 32 states in 1993-94, according to *State Legislatures*. These "takings" bills, so named for the constitutional requirement that governments compensate property owners when they take private property for public uses, have grown out of frustration with what many consider to be the trampling of property owners' rights by environmentalists. Bills range from a required state agency review of the impact of proposed regulations, to required compensation if property values are reduced beyond a specified amount, typically 50 percent. At least 9 states passed "takings" legislation of some sort by mid-1994.

Considerable litigation is likely as courts try to draw a clear line between the reasonable regulation of land use and the compensable "taking" of property. The Supreme Court tilted slightly in favor of property owners in its 1994 decision in *Dolan vs. Tigard*. It said that city officials could not require a store owner to donate 10% of her property for a bike path and "greenway " in exchange for a building permit to expand her store, unless they could prove a direct relationship between the required dedication and the impact of the proposed development.

Finally, two recent books with similar views see society's increased contentiousness as part of a broader cultural decay. Charles J. Sykes, in the book *A Nation of Victims*, sees decay in the American character as more people and groups blame their transgressions on others and deny personal responsibility for their situation. According to Sykes, one of the main problems, if everyone sees himself or herself as mistreated, is that it becomes harder and harder to deal with genuine cases of injustice or misfortune. In *Culture of Complaint*, Robert Hughes says America is being frayed by outlandish complaints and counter-complaints from the far right and far left. The name of the game is to heap blame on others. If interest groups become so polarized that political institutions bog down, then the courts may increasingly be asked to define social policy.

Implications:

- As cases develop in the area of workplace harassment, the General Assembly may be asked to legislate guidelines.
- The question of the role of schools to help build character, and reverse what some see as the nation's moral and intellectual decline may come to the forefront.
- A bill was introduced in 1994 to protect property values from regulatory impacts. This issue probably will be revisited and be a matter of intense interest in the next few years.
- Confusion over provisions of the Americans with Disabilities Act may lead to a rapid increase in employers' use of professional advisors on ADA matters.
- Demand for education about ADA requirements will further increase, now that (as of July 1994) it also extends to employers with 15 - 24 employees.

GENETICS AND CIVIL RIGHTS

TREND: As the human genetic code is being mapped, questions are being raised about the need for laws to protect the civil rights of individuals in the area of genetic testing.

BACKGROUND: Advances in the science of genetics, especially the human genetic codes, promise astounding gains in biology, and relief from many inherited ailments for which there is now little or no effective treatment. But many fear that there is serious potential for abuse in genetic testing. A 15-year U.S. initiative to map the entire human genome includes a number of studies on the ethical, moral, and legal implications of genetic testing, which has been defined by the Ohio legislature as "A laboratory test of a person's genes or chromosomes for abnormalities, defects, or deficiencies, including carrier status, that are linked to physical or mental disorders or impairments, or that indicate a susceptibility to illness, disease, or other disorders, whether physical or mental, which test is a direct test for abnormalities, defects, or deficiencies, and not an indirect manifestation of genetic disorders." The definition is contained in already enacted legislation that prohibits health insurers from using genetic tests or existing genetic test results to screen health policy applicants for 10 years. It is said that the average person has six to eight genes that could lead to disease. The argument also is made that genetic testing could lead to discrimination on the basis of many inherited qualities, and that careful study of the potential for abuse should be taking place even as this new science is developing.

IMPLICATIONS:

- These developments will be of concern to every state, and there surely will be debates over what areas of genetic science should be subject to state regulation, as well as, or rather than national laws. Widespread use of these techniques is still on the horizon, so there is time for careful study and debate before decisions must be made.
- With some insurance companies already using genetic tests to decide whom to insure, some sort of civil rights legislation may be proposed.
- Genetic testing and privacy may become a major constitutional issue and a major issue for lawmakers.
- Now that genetic research is developing as a marketable technology, perhaps Kentucky institutions of medical research might examine the possibility of developing expertise in this area.

JOB CREATION

TREND: **The belief that small businesses are the principal engines of job growth in the United States, and thus deserve favored treatment, is being challenged in some quarters. In other areas programs to support home businesses are on the rise.**

BACKGROUND: Bennett Harrison, Visiting Professor of Political Economy at Harvard's Kennedy School of Government, suggests the belief that small businesses now create most of the nation's jobs is a myth that has generated favorable tax treatments and other "giveaways" for small businesses that have done little to increase job creation. The top five percent of American manufacturers still employ three quarters of all industrial workers. In addition, many corporations, as they have downsized, have formed networks and alliances with smaller firms. These smaller firms operate much like divisions of the larger firms. The result is that larger companies are just contracting out work they primarily had been doing in their own plants.

Rather than give favorable treatment to small businesses based on size and give no consideration to profitability, the author recommends government resources would be better spent investing in programs that (1) assist small businesses in getting up to speed on new technologies and (2) help small businesses find larger corporate partners. Pennsylvania, for example, has six industrial resource centers that help small manufacturers improve their manufacturing processes and provide other supportive services.

Several studies have criticized large firms for large-scale downsizing while small ones are showing more enterprise in picking up the employment and production slack. But a Federal Reserve Bank of Chicago paper argues that this perception is not clear. The authors found that in manufacturing jobs over a 15-year period, large firms destroyed just over half of the jobs that were lost, but were responsible for creation of 54 percent of new jobs.

Small firms — defined as those with one to 19 employees — did have higher rates of job creation than larger ones, the article said. But it also found that such firms had higher rates of job destruction than larger firms. In their final analysis, the authors concluded that the net outcome of jobs created vs. those destroyed did not vary significantly among firms of varying sizes.

An offshoot of downsizing has been the development of entrepreneurial home-based businesses. Nationwide there are an estimated 30-40 million home-based businesses in operation, and another home-based worker is added every 16 seconds. These so-called SOHO's — Small Office-Home Office — entrepreneurs include information services,

agriculture, crafts, light manufacturing, and services. Other factors contributing to growth in this area include the availability of electronic technology and the desire by some to have greater control over their work situations. Areas where these businesses need assistance include meeting regulatory requirements, such as those related to federal and state taxes or zoning issues; business management skills; access to capital; and a networking mechanism, such as trade associations.

IMPLICATIONS:

- Special benefits to help fledgling industries get themselves established may be justified, but these findings raise doubt about basing such benefits on size alone.
- Rather than give breaks to small businesses, it may be more productive for states to help small businesses incorporate new technologies and to facilitate collaborations involving both large and small businesses.
- Home businesses may be especially appropriate in a rural state like Kentucky. There may be a need to pull together data on the status of SOHOs in Kentucky.

VIOLENCE IN THE WORKPLACE

TREND: Violence, including multiple homicides, seems to be an increasing problem in America's workplaces.

BACKGROUND: Safety in the American workplace is no longer limited to designing safer machinery and equipment or eliminating dangerous work habits and procedures. The Labor Department recently determined that one-sixth of the workplace deaths in 1992 were homicides. The Northwestern National Life Insurance Company found during the year ending in July 1993 that 2.2 million Americans were physically attacked in their workplace, 6.3 million were threatened with violence, and 16.1 million were harassed in some way.

The National Safe Workplace Institute estimates that workplace violence in 1992 cost employers more than \$4.2 billion in lost work time and legal expenses. Neither public nor private-sector workplaces were immune from this growing phenomenon.

IMPLICATIONS:

- Workplaces in all kinds of enterprises and all parts of the country seem to be increasingly vulnerable to violence, corresponding to the seeming rising tide of violence throughout American society. Measures that succeed in reducing the general level of violence may be expected to produce benefits on the job, as well as in the homes and streets.
- Workplace stress and resulting mental and emotional problems may need both public and private attention. The Northwestern Study concluded that such stress is a cause, as well as an effect, of the violence, and that counseling services and improved grievance procedures may be part of the solution. At the least, it would seem that both business and government might be encouraged to adopt support programs.
- Research may be needed to determine what programs and procedures are most useful in reducing stress and heading off violence before it erupts.
- Costs relating to workplace violence may impact competitiveness in the world marketplace, since businesses in other countries may not face these same costs.

RURAL DISTRESS

TREND: Poor rural areas are falling further behind the rest of the state and country.

BACKGROUND: Kentucky's Appalachian counties fell further behind during the 1980s, according to "Kentucky's Distressed Communities," a study by the U. K. Appalachian Center. Per capita income in Appalachian counties fell from 83% of the state average in 1980 to 76% in 1990. These figures mask differences within the region; the study found that the poorest counties in the state lie in the area between the better situated counties along the Virginia and West Virginia border and newer growth areas like London, Corbin and Somerset. Further, it identified four clusters of severely depressed communities within these poor counties, where poverty rates range from 46% to 63%. The study found that the poorest counties in the region have received the least money from the Appalachian Regional Commission, concluding that "the most severely distressed communities within the region have not shared equally in the gains made through ARC programs."

The findings in Kentucky's Appalachia are consistent with national trends. In *Persistent Poverty in Rural America*, the Rural Sociological Society Task Force on Persistent Rural Poverty found that the gains in reducing poverty during the late 1960s and 1970s were largely lost during the 1980s, and the gap between urban and rural poverty is getting larger. One of its conclusions is that the general social and economic programs now in place cannot deal effectively with the problems of rural areas, even if these were extended. Place-specific programs also are required, especially to produce any improvement for long-term depressed areas like Appalachia, Northern New England, or the Mississippi Delta. The report predicts that conditions in rural areas will further deteriorate, due to global competition and tight budgets at all government levels.

A survey of firms in southeastern Kentucky may underscore some of the difficulties of dealing with global competition. Researchers Allen Engle and Robert Sharp found that few of the firms surveyed export to non-U.S. markets. Perhaps more telling was that few expressed a willingness to invest time or resources in language or other global skills training for employees or in participating in a global issues trade organization. The authors concluded that the business managers need to be "sold" on the benefits of international marketing before they can begin to prepare their firms to enter these markets.

IMPLICATIONS:

- As the U.S. economy becomes more integrated with foreign markets, rural areas of Kentucky could fall further behind in terms of jobs and wages, due to the isolation of

their businesses. This probably applies to branch plants of larger companies, as well as to indigenous businesses.

- Pockets of poverty, of which parts of Appalachia are good examples, may require special help beyond that needed generally by rural areas.
- Strategies are needed to help develop lagging rural areas and to address the needs of mainstream rural areas, those with a larger agricultural base and fewer historical problems.
- Effort needs to be made to ensure that the state's poor rural areas have adequate access to the information highway and new developments in telecommunications.

URBAN DEVELOPMENT

TREND: **Cities face an uphill battle in their competition for development and revenue, but they also have unique resources.**

BACKGROUND: Cities face several disadvantages when it comes to attracting new development. For one, cities must compete with state governments, which increasingly work to attract footloose companies. Federal aid to cities has been cut in half since 1980, so cities increasingly must depend on their own revenue sources. Finally, the higher crime rates in cities are said to discourage companies from wanting to locate there. In 1992, crime rates in the 25 largest U.S. cities were 60% higher than in the nation as a whole.

Large cities continue, nationally, to lose population share to the suburbs, and with it, the political dominance they exercised during most of this century. However, as Alan Ehrenhalt comments in *Governing*, policies have not yet shifted dramatically away from urban concerns in states such as Illinois, where big city legislators have become a minority. This may be, he speculates, because suburban areas are not all alike. Many share the problems of the large cities they circle.

A prominent effect of restructuring in the economy has been the loss of manufacturing jobs in midwest manufacturing cities. However, a recent study by the Federal Reserve Bank of Cleveland finds that some of these cities are developing as service centers, providing business and urban services, not only to the manufacturing plants in their regions, but to national and international markets as well.

Cities also are beginning to reclaim some of their abandoned industrial sites for other uses. These "brownfields," contaminated sites in urban areas, often are prime locations for many uses, yet they have remained abandoned because of uncertainty over liability and cleanup costs. Several Midwest states have tried to relax some environmental regulations to spur brownfields redevelopment. Michigan recently announced a plan to clean up polluted sites in Detroit with state funds, making them available for redevelopment. The polluting firms still can be forced eventually to pay for the cleanup, but state funds are being used to avoid long delays. The President's Council on Sustainable Development also is looking at the issue of brownfields development, and will include recommendations in its 1995 report to the President.

Massive growth in the health care industry is not a uniquely urban issue, yet this growth has been a boon to many metropolitan inner cities, according to a *Washington Post* article. Large urban hospitals and health care facilities often are located in central cities and provide a large pool of secure jobs to low-income, low-skilled workers in these areas. While many economists contend that the money poured into health care would spur

greater job growth if diverted into other programs, these might be less efficient at channeling money into neglected, disadvantaged communities.

Money is tight not only for large cities, but for most local governments. Recent problems in the municipal bond industry have prompted introduction of municipal bond disclosure legislation in Congress. Such legislation might limit the uses of municipal bonds to finance private developments. In a more positive development, M.J. Richter, writing in *Governing*, alerts cities to potential new revenues from the expansion of Personal Communications Services (PCS), the new generation of portable phones. Service providers will have to construct networks of small receiver-transmitters, offering local governments the opportunity, if they move quickly, to charge for easements and franchise rights.

IMPLICATIONS:

- While Kentucky has several urban centers, it is more rural than average and characterized by towns more than cities. Therefore, changes in political dominance are important to the state more at a national than state level.
- Finding practical ways to rehabilitate brownfields would be a great boon to older industrial cities, including Kentucky towns like Louisville and Ashland. From an environmental or investment perspective, it also makes sense to keep using these sites, which often enjoy prime location with respect to infrastructure and labor supply, rather than developing and contaminating a new set of sites each generation.
- Economic development strategies based on attracting relocating firms with cheap land near interstates, non-union labor, and low taxes might hit strong competition if older cities become more attractive and vital.
- A need for more oversight of municipal bonds may lead to proposed legislation in this area.

VITAL DEMOCRACY

TREND: **The feeling that governments and citizens have grown too far apart is widespread. Some on both sides are trying to bridge the separation.**

BACKGROUND: Many Americans have become disenchanted with their government, no longer believing that elected officials or bureaucrats are in touch with or care about their needs. Many public officials for their part are discouraged about citizens who complain but don't bother to take part in public meetings, inform themselves about issues, or vote. The mutual distrust or misunderstanding seems to have reached epidemic proportions. According to a 1994 poll by the Times Mirror Center, almost 70% of the Americans polled think dealing with a federal agency isn't worth the trouble. The Census Bureau is considering major changes in the way it conducts the decennial census to avoid repeating the excessive cost and inaccuracy of the 1990 Census. In 1990, only 65% of households mailed back the census form, forcing enumerators to make up to six personal visits to obtain the information. Changes being considered include asking fewer questions, using samples to get information from some groups, and possibly even eliminating the long form, which provides information regarding income and housing characteristics.

Efforts are being made to counter this alienation both on the part of citizens and of government institutions. On the citizen side, study circles are enjoying new popularity. Study circles, according to the *Utne Reader*, are part of the burgeoning national salon scene, but typically focus on an issue or problem, include a trained leader and catalytic materials, and often are sponsored by a larger organization, such as a newspaper, church or cultural organization. The study circle format aims at intense small-group discussion, and at going after deeper truths than mere social talk could provide.

Sixty-five national organizations gathered in May 1994 in a movement dubbed "American Renewal," which seeks to build on the effective grass roots activities which are taking place around the country. By sharing successful innovations and developing shared strategy, the proponents of "American Renewal" hope to revitalize grass roots movements and counter the cynicism and passivity of much of the general public today. This is seen as somewhat akin to "reinvention" movements in business and government.

Contradicting complaints about an increasingly apathetic and selfish population, there are signs that personal responsibility and altruism are very much alive. Students on college campuses across the country are volunteering for a variety of social service activities. A study of Pennsylvania colleges found that volunteer hours donated by students increased from 50,000 to 1.6 million in four years. A study issued by the Conference Board and the Points of Light Foundation in 1993 found that despite corporate downsizing and restructuring, 92% of businesses said they encourage employee volunteer activities, and most believe these programs help corporate goals. One sign of the fascination with

individual responsibility is the success of *The Book of Virtues*, a recently-published collection of poems and short moral tales which emphasizes virtues like responsibility, self-discipline, compassion and friendship.

Clearly, many Americans believe that it is their right and their obligation to be involved in solutions to the problems they perceive. However, not everyone has the time or knowledge to participate in political forums or other political activities. The Americans criticized for political apathy may be not so much apathetic as overwhelmed by other demands on their time, and by the cacophony of supposed information on political topics. Americans work longer today than a generation ago, and more than an hour longer each day than most Europeans. Jeff Davidson, speaking before the U.S. Treasury Executive Institute, identifies other causes of the perceptual and actual erosion of leisure time among Americans, especially the expanding volume of knowledge and mass media growth, which combine to force people to spend more time trying to stay informed. The public, he says is bombarded by an overwhelming welter of unorganized, often sensationalized information and misinformation. He urges people to deal with this "over-information society" by controlling their media exposure, by focusing on a handful of priorities, and by avoiding as many of the day's trivial decisions as possible to focus on the few decisions that count.

The importance of public participation to the success of places with a democratic form of government is supported by a recent study of Italy's regions. In *Making Democracy Work — Civic Traditions in Modern Italy*, Roger Putnam tries to explain the very different experiences of the 20 Italian regions since their creation in 1970. He concludes that the crucial variable in the social and economic success of these regions was the degree to which the populations practice a vital civic culture — whether the people typically read newspapers, vote regularly, and belong to various groups and clubs. He found that those with feudal traditions lagged economically and developed corrupt governments, while the regions with a vital civic culture prospered.

Government officials are well aware both of public alienation and of bureaucratic failures in managing the public's business. Serious efforts are underway in many places to redesign public programs, and management gurus of various persuasions have found profitable new markets in government. Government agencies increasingly are trying to open processes to the public, improve accountability, and measure outcomes instead of just inputs. The Commission on the Future of the South, in its most recent report, departed from past reports by stressing the "how" as much as the "what" of regional strategy; five of the twelve Regional Objectives which form the basis of the report are objectives for the governments. The report envisions Southern governments which are "creative, flexible, and accountable," which "empower" people and "encourage participation," "act regionally," and tolerate "no racial, ethnic or gender barriers," led by "bold, visionary leaders whose concerns are for the greater good of the community."

Government-instituted self-reforms are not always successful. Visalia, California, was on the vanguard of the "entrepreneurial government" movement until the newly empowered

public servants, freed from bureaucratic straitjackets, became involved in a public-private project to develop a hotel and convention center which, in the end, left the city owning the hotel and taxpayers saddled with \$20 million in obligations. Elected officials reacted by reinstating many of the old controls.

A new method of polling, tested in Britain last year, may offer interested policy makers more meaningful information about public opinion than either polls of experts, or surveys of the representative but uninformed. The method tries to discover what a representative cross-section of the public would favor if its members were well-informed on the particular issue. In the British test in early 1994, 400 citizens chosen by random sampling were paid a stipend to participate in a long weekend of discussion on the issue of crime. They were asked for their views only after they read briefing materials, met with crime experts, questioned politicians, and debated among themselves. The results were to be broadcast nationally to extend the public debate. Sponsors plan to use the same format in this country, with 600 participants, at a National Issues Convention to be held at the Johnson Presidential Library in January 1996.

Some ideas for improving state-citizen relations are borrowed from overseas. The German National Service is a civilian alternative to the military draft. Some 40% of young men reportedly opt to spend 15 months in civilian service rather than 12 months in the military, and this corps provides many of the social services which citizens need but governments find so difficult to fund. The new American National Service Program is a much smaller, voluntary effort to get young people to spend a year or two working for the public good.

It may be that rising public anger and declining voter engagement, as well as the creation of sometimes meandering voting districts to make select minorities into majorities in specific places, point to a fundamental problem with the U.S. election system. The dominant voting system in the U.S. is the single-member plurality system, where officials are elected one to a district, with the winner being the candidate with the most votes. According to Douglas Amy's *New Choices, New Voices*, this system survives only in a few developed countries, all heirs to the British tradition of government. Most Western democracies, and all the formerly communist countries of Eastern Europe, have opted for some form of proportional representation, where officials are elected in large, multimember districts according to the proportion of the vote they or their party receives. Some argue that the U.S. governing bodies cannot begin to represent the true diversity of political views in the U.S. unless they adopt some form of proportional representation.

IMPLICATIONS:

- There may well be increasing awareness in the next few years of the existence and advantages of proportional representation schemes. Local experiments may be proposed, and in the far future, there may be interest in moving towards proportional elections.

- Wider use of informed polling, which asks the views of a cross-section of citizenry after they have been able to inform themselves about an issue, could become highly useful in some areas of public policy. The information highway could be useful in this process. Some government pilot efforts in this area might also prove useful.
- Information overload can lead to apathy, because the recipient no longer can discriminate between what is true or false, important or trivial. Society may need to create reliable mechanisms which help organize, prioritize, and summarize information for wider consumption, and explain apparent contradictions in valid information.
- It is hard to encourage civic institutions, and expect an active, informed citizenry, when many Americans are working multiple jobs or working much longer hours to make ends meet, and when many families lack traditional supports. Workforce, family, and citizen participation issues and solutions may be interrelated.
- The design of public programs can strongly influence outcomes. The entrepreneurial government movement aims to reduce stultifying constraints, but accountability may need to be an integral part of the process.
- Accountability with outcomes measurement is a recurring theme in government — prominent in KERA and increasingly proposed for economic development — and is likely to spread to other programs.
- The growing interest in study circles suggests that people want to become more actively involved in public policy and their community. Governments need to find ways to welcome and draw upon this willingness.
- The state might want to consider how to encourage and strengthen the apparent wave of volunteerism among young people.

SOME DEMOGRAPHIC TRENDS

TREND: Excessive population growth is a global problem, yet Kentucky's concern is outmigration and lack of growth. Schools will be challenged to serve increasingly diverse populations.

BACKGROUND: Kentucky's population grew only by 0.7% between 1980 and 1990. There was a net out-migration of 4.7%. These statewide figures mask considerable regional variations, with major losses in many Eastern Kentucky counties offsetting population growth along the I-75 corridor, between Lexington and Louisville, and in the Western Kentucky Lakes region.

Nationally, the Census Bureau now predicts more rapid population growth in the next 50 years than previously expected, projecting a 52% increase in the national population by 2050. The Bureau also predicts that the first part of the next century will see another baby boom, with birth numbers (but not birth rates) expected by 2012 to exceed the 4.3 million births the nation experienced at the height of the post-World War II baby boom.

The traditional family, defined as a family with a father who works full time and a mother who is not in the labor force, has been a minority in the United States at least since 1940, when the Census Bureau found only 43% of children in traditional homes. By 1990 only 20% of all children, and only 5% of black children, lived in traditional homes. One factor in this change has been the steady increase in the proportion of mothers who work, but this appears to be leveling off. The percentage of women aged 20-44 in the workforce reportedly dropped slightly last year for the first time in a quarter century. This follows small declines noted among younger women, aged 20-24, as early as 1985.

If recent trends and Census Bureau predictions are correct, the United States is becoming and will continue to become significantly more diverse racially and ethnically. Non-Hispanic Whites should comprise about half of the population in 2050, down from three-quarters today, while Hispanics and all non-white racial groups increase their share of the population. Hispanics are projected to outnumber Blacks within the next 15 years. All of these minorities currently are underrepresented in Kentucky, relative to the national average; in 1990, 92% of Kentucky's population was white, 7.1% black, with less than one percent each of Asian or Hispanic origin.

Schools will be challenged to serve the needs of increasing numbers of ethnically or racially diverse students. According to Nicholas Bountress, schools in the past have acted as though they were unaware that they are serving burgeoning, nontraditional populations for whom traditional middle-class values, culture, and language are foreign. He says school personnel must learn to understand the unique behaviors, lifestyles, values, and learning styles of students from diverse cultural backgrounds, in order to accurately assess

students and make appropriate educational placements. Failure of schools to work with cultural differences threatens to relegate an unconscionably large population to an inferior education, without the opportunities they need to reach their potential. A disturbing statistic in this regard is that the proportion of African-American males enrolled in college actually dropped between 1990 and 1992, a period when proportions of other groups of high-school graduates attending college increased or remained steady.

The rapid growth of population worldwide is a concern of many countries. The September 1994 Conference on Population and Development in Cairo, Egypt, focused attention on population issues, and on the difficulty in some regions of the world of coping with rapid population increases. Based on current trends, the world's population will increase from 5.5 billion today to 14 billion in 2050. After decades of spectacular breakthroughs and steady increases, world farm productivity has failed to keep up with population growth for the past several years, making future world food shortages a possibility. Sir Roy Cube, a renowned British surgeon, created an uproar by proposing, among other things, that couples should have to apply for a "parenthood license" and be taxed if they choose to have more than two children.

IMPLICATIONS:

- Global pressure on the food supply could increase agricultural prices in the United States, and create new opportunities for Kentucky agriculture.
- While ethnic and racial minorities probably will increase in Kentucky, especially in those parts of the state experiencing in-migration, the proportions are likely to remain comparatively small. This might allow Kentucky the luxury of working to incorporate these groups in a measured way, and of learning from the experiences of more diverse states.
- Kentucky colleges and universities might need to continue to review the effectiveness of their minority recruitment and retention efforts.
- Schools may need to incorporate policies to help ethnically and racially diverse children who receive regular classroom instruction rather than English as a second language classes. Efforts also may be needed to improve sensitivity by school personnel to ethnic and cultural differences.
- If Hispanics come to outnumber African-Americans nationally in a few years, this could shift the emphasis of national public policy away from the concerns of African-Americans, which are Kentucky's largest minority.
- Since Kentucky's student population is expected to decline, at least in the next decade, the state might opt to keep education funding constant or growing, in order to better educate the smaller student groups.

"GREEN" TOURISM TRENDS

TREND: **Tourism and recreational industries are responding to increases in outdoor activities and environmental awareness.**

BACKGROUND: At least some in the travel industry are predicting that the days of organized mass travel are giving way to a period of increasingly independent, flexible and "green" tourists. Participation in outdoor recreational activities is booming. According to statistics provided by the U.S. Forest Service and the U.S. Department of Agriculture, participation in five activities is expected to double or triple by 2040. These are day hiking, backpacking, river rafting/tubing, bicycling, and outdoor photography. There is some concern that heavier use will require greater maintenance of public lands, leading to additional recreation fees to cover these costs. In Kentucky, an estimated 75% of the population participate in some wildlife-related recreation each year, yet only about 1/3 of these engage in fishing or hunting, which bring revenue to the Department of Fish and Wildlife Resources. That department, like many other state and federal agencies which oversee public land, is looking for ways to spread its costs more evenly across user groups. In this regard, the General Assembly in 1994 passed House Bill 368, which taps a portion of state receipts from the tax on unmined coal and environmental fines to help the Department of Fish and Wildlife Resources, the Department of Parks, and others acquire additional land.

Golf is another increasingly popular outdoor sport, and new golf courses are being designed and built at a rapid pace. Golf courses have been criticized both for ecological damage in construction, and as polluters, through their heavy use of pesticides, herbicides, fungicides, fertilizer and irrigation. However, these practices may be changing. More than 600 golf courses have joined an environmental advisory service called the Audubon Cooperative Sanctuary Program, operated by the New York Audubon Society. The American Society of Golf Course Architects recently pledged to follow design guidelines which maintain wildlife habitat and the current shape of the land as much as possible. A golf course being build on Kiawah Island in South Carolina was designed to have minimum impact on the surrounding ecosystem, and includes an underground drainage system to recycle water. While that golf course will cost about twice the average, it will be used as a biological laboratory to study the ecological effects of golf construction and maintenance.

Even hotels are taking steps to improve their environmental performance. A recent survey of 300 hotels around the world found that nearly 75% had environmental programs, 25% of which had started in the past year. Some of the practices include low-flow shower heads, reduced packaging of toiletries, and offering guests the option of using linens more than one day. Only 3.2% of the mostly business-oriented hotels reported any negative reaction from guests.

IMPLICATIONS:

- One key to growing and maintaining tourism business will be to offer quality areas for outdoor recreation. This asset has been one of Kentucky's strengths.
- The new tourist market presents major opportunities to states without a major attraction like Disney World.
- The time may soon come when the legislature will be asked to authorize collection of fees from groups unaccustomed to paying for outdoor activities. The U.S. Park system is experimenting with entrance fees, and fees have been discussed for use in both state parks and Fish and Wildlife properties.
- State agency expertise might be tapped to help private golf course developers design environmentally friendly golf courses.
- State park lodges could lead the way in operating environmentally sound facilities.

RIDING THE RAILS

TREND: **Railroads are making a comeback worldwide. But trains or urban rail transit will not soon displace many cars or trucks unless there is a severe and long-term crisis.**

BACKGROUND: In the weeks after the January 1994 earthquake in Los Angeles, ridership on the regional transit system boomed. However, most drivers returned to their cars as soon as detours were opened and freeways repaired. After a month, Metrolink ridership had returned to "only" twice pre-quake levels.

Several countries in Europe are expanding and updating their rail systems after decades of relative neglect. As in Los Angeles, the pressure comes from crisis, but not from a short-term event. European policy makers are trying to deal with unacceptable levels of environmental damage and traffic congestion which have resulted from automobile-dependent development. Twelve European countries recently agreed on a \$76 billion proposal to link major cities with nearly 30,000 kilometers of high-speed rail lines.

In the automobile culture of the United States, rail transport will not soon render cars and trucks obsolete, yet the rail industry has been doing quite well in recent years. According to U.S. News & World Report, railroads, which still carry 40% of the nation's freight, have dramatically increased productivity, and have recorded record shipment levels for seven straight years. Intermodal freight, where trains carry truck trailers or containers on flatbed cars, is expanding. Amtrak also has experienced a steady growth of ridership, and chronic overcrowding on some routes. Urban rail systems may be changing the face of some cities. In otherwise low-density Atlanta, some \$70 billion in new apartments, office buildings and other developments reportedly have been built close to the rapid rail lines. A task force has been organized to study the potential for light rail in the Louisville metropolitan area.

Policy makers have long given lip service, at least, to expanding public transit, and this makes sense for many reasons. One is that public transit offers an alternative for those who cannot drive or who cannot afford to drive. This may include many senior citizens who are driving today despite mental or physical impairments which make their driving dangerous. A *Wall Street Journal* computer analysis of the U.S. Department of Transportation fatal accident data shows sharp increases in fatal accident rates after age 75; drivers over 80 are more risky, statistically, than those under 20. Yet, lacking alternatives, many senior citizens with health limitations reportedly continue to drive even after their licenses are revoked. Of Kentucky's neighbors, Indiana and Illinois require more frequent license renewals by the elderly, and a road test before renewal.

According to Marcia Lowe, in *Back on Track: The Global Rail Revival*, the costs of driving automobiles is heavily subsidized compared to rail transit. The federal government spends many times as much to build roads as on rail or public transit, fuel taxes are among the lowest in the world, and drivers still enjoy abundant free parking. Thus although commuter trains, which use less energy, far less land, and pollute less than cars, are cheaper and better for society, individuals may find it both cheaper and more convenient to stay in their cars, even in congested cities.

Ms. Lowe also notes that to expand rail transit, stations must be easily accessible for the population. While new rail lines target major commuting routes, low-density development and sprawling urban landscapes create a formidable barrier to attracting train riders. The Electric Power Research Institute is involved in a series of local demonstrations of electric "station cars," which might help solve this problem of access. The "station cars" are small electric vehicles which transit riders can rent for the last leg of a commute or trip, or for shopping or other purposes. These cars are to be kept at a transit station, where they can be parked and recharged when not in use.

IMPLICATIONS:

- Kentucky has no passenger rail or urban rail service, but has considerable freight traffic, largely due to the coal industry.
- Electric station cars could well be the first real commercial successes for electric vehicles, and could enhance the attractiveness of public transport, since riders would have some way to navigate shorter distances at either end of a rail trip.
- An increase in the popularity of railroad shipping, which actually causes a decline in the number of miles trucks drive on the roads, would reduce revenues to the state road fund. Other drivers might have to pay higher rates to make up for this loss.
- Improved bus systems designed to mimic subways (see Curitiba, Brazil, on p. 11) might be another alternative for mass public transportation.
- Dealing with elderly drivers will be an issue irrespective of developments in rail transportation. Periodic retesting of drivers may catch some elderly drivers with impairments, but it would also create huge difficulties for many of these drivers and their families.
- Major investments in highly efficient modern rail transport by other developed and developing countries could put the U.S. at a competitive disadvantage in the future.
- While people may be reluctant to use urban transit rather than drive across town, there may be real demand for high-speed inter-city rail.