

: Is Information Technology transforming the U.S. Heartland?

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The American heartland is 12 states in the heart of the United States and North America: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin. The heartland has avoided some of the upheaval of other parts of the planet, but the de-industrialization has led to rusting factories, displaced workers, migration to the cities, and social dislocation.

Many of the eastern states in the U.S. Heartland, Michigan and Ohio in particular, led the U.S. industrial revolution; the prairie states were leaders in the global agrarian revolution. The region is a mix of what Joel Gareau (1981) calls the Foundry and the Breadbasket. Beginning in the mid-1990s, the Internet and the World Wide Web provided the information technology infrastructure that would transform business, government, and the lives of the residents of the region.

The U.S. Heartland has an abundant supply of water from rivers and the Great Lakes, fertile soil, mineral resources (especially iron and coal), a good transportation system, and a well-educated population. More than 17% of the population of the region have at least bachelor's degrees and the states have many excellent universities. The problem has been the changing employment needs in agriculture and manufacturing, but the Information Revolution or Internet Age has provided new job opportunities and changed the migration patterns and demographic trends of the region. Today we have outstanding access to information technologies and internet connectivity. Although the weather is still generally cold in the winter and hot in the summer throughout the region, modern climate control, immersive video games, web surfing, and video chat have helped conquer the weather.

What is the impact of Information Technology?

Information technology broadly refers to computing hardware, including PDAs, GPS devices, RFID, networks, and application software like decision support systems, analytical software, and computer operating systems. The general impacts from information technology that are occurring globally, like e-business, e-commerce, and e-government, are also positively and negatively impacting the Midwest United States. The rate of change is, of course, varied across the region.

Specific impacts are more interesting and suggest the scope and magnitude of the transformation

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that is occurring. Let me suggest 25 impacts of information technology:

1. Changing business models of book stores, publishing, newspapers, and media companies. The small business owner is struggling, even the chains and larger media companies have been impacted and have reduced work forces.
2. Changing decision-making processes, especially decentralizing decision-making. Everything happens faster and many managers have had to delegate to respond fast enough to customer demands.
3. Changing population migration patterns, especially reducing farm to city migration. The rural areas are being depopulated, but the Internet is actually reducing the isolation of rural living.
4. Creating good jobs, manufacturing high technology products, using information technology, and providing IT services. Lower cost labor has led to keeping some manufacturing in smaller towns and the Internet has enabled eCommerce and collaboration with customers.
5. Creating new crimes like phishing and cybertheft, but helping catch criminals. Crime occurs in the Heartland and the Internet opened up new avenues to prey on the elderly and those who are too trusting.
6. Enhancing and expanding distance learning, especially in Higher Education but potentially in K-12. Distance learning is still evolving globally, but the rural nature of the Midwest encourages distance learning innovation.
7. Facilitating the creation of virtual communities. Affinity groups on Facebook and in Social media have more impact on peoples live when sphysical social interaction is harder. The Heartland is a testbed of the impact of virtual friendships on people.
8. Facilitating Interfirm coordination and control. Controlling costs is important and technology help control costs.
9. Impacting citizenship and participation in elections; residents are using e-mail and the Web to further their political activity
10. Improving government revenue collection and law enforcement
11. Improving information distribution; more information is available, with wider dissemination and faster access
12. Improving patient outcomes in Hospitals and clinics
13. Improving the quality of life of residents, especially in rural communities
14. Increasing the efficiency of global product supply chains

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15. Increasing entertainment options, especially virtual worlds, online gambling, music, and video
16. Increasing the productivity of organizations
17. Increasing training needs, especially in the use of information technology
18. Providing access to a broader range of goods and services
19. Providing new tools for scholarly research
20. Reducing layers of management and hence managerial overhead costs
21. Reducing privacy and increasing our access to information about other people
22. Reducing the need for cash and hence improving transaction processing
23. Reducing transportation costs. The Internet reduces the need to travel and digital goods increasingly meet people's needs for entertainment and education.
24. Stimulating entrepreneurship, especially increasing the number of technology- and home-based businesses
25. Supporting geographically distributed teams. The virtual enterprise is becoming a reality in the heartland.

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