

Economic Development and Community Informatics

1. Allen, J. C., & Dillman, D. A. (1994). *Against all odds: Rural community in the Information Age*. Boulder, CO: Westview Press.

2. Allen, J. C., & Johnson, B. B. (1995). Telecommunications and economic development: A study of 20 rural communities. *Rural Telecommunications*, 14(4), 28-34.

This study surveyed 20 rural communities in six states to examine the impact of telecommunications on economic growth and quality of life issues. The survey addressed the importance of telecommunications to the economic and social fabric of a community and whether these communities saw the need for a public role to encourage the deployment and adoption of technology in rural communities. Overall, the results of this analysis illustrate that many rural residents are extensive users of telecommunications technology and believe that new technologies are a key to the economic future of their communities.

3. Allen, J. C., Johnson, B. B., & Leistritz, F. L. (1993). Rural economic development using information age technology: Some directions for practitioners. *Economic Development Review*, 11(4), 30-33.

To gain a better understanding of the role of telecommunications technology requirements in rural areas, this study used surveys and in-depth interviews of managers of telecommunications providers across two states. The results reveal that the telecommunications technology requirements are not significantly different in rural communities. The analysis does underscore the importance of cooperation between business users and telecommunications providers to improve the potential economic impact of using telecommunications technology.

4. Allen, J. C., Johnson, B. B., Leistritz, F. L., Olsen, D., & Sell, R. (1998). Telecommunications and rural business. *Economic Development Review*, 15(4), 53-59.

Rural businesses are depending upon telecommunications technology to improve their economic opportunities with increasing frequency. There is evidence that rural businesses are using sophisticated technology to overcome their relative isolation and improve their long-term viability. Given the potential of these technologies, many rural businesses advocate universal service requirements for rural communities to ensure access and competitive pricing.

5. Allen, J., Johnson, B., Olsen, D., & Leistritz, F. L. (1996). Telecommunications in rural communities: Patterns, perceptions and changes. Columbia, MO: Rural Policy Research Institute. Rural Telecommunication Bibliography 4.

6. Beatty, James R. (2000-2001). Telecommunications and Rural Teleeconomic Development. *Rural Research Report*, 12(1), 1-10. Retrieved on July 26, 2007 from http://www.iira.org/pubsnew/publications/IIRA_RRR_141.pdf.

According to the National Telecommunications and Information Administration (NTIA), "low income families, minorities, and those who live in rural areas regardless of income, have less access to the tools of the information age-such as computers and Internet access-than the majority of our society." This report explains why it is imperative to emphasize a solid telecommunications infrastructure within rural communities. Effective governmental leadership and community initiatives can help rural communities reach a position that allows them to participate in local economic development efforts based on telecommunications

7. BJK Associates. (2001, January 20). *Broadband Internet access for rural small businesses*. Retrieved on July 17, 2007 from <http://www.nfib.com/object/2753109.html>

This paper seeks to understand whether there are any technological problems that may cause differences between rural and urban Internet access. As well, where there are differences, are the differences large enough to justify public policy action to reduce the creation of a digital divide? Finally, this report seeks to clarify what types of public policy mechanisms would be most appropriate to provide the broadest Internet access possible.

8. Blanks-Hindman, D. (2000). The Rural-urban digital divide. *Journalism & Mass Communication Quarterly*, 77(3), 549-560.

9. Bowser, B. (1998). Getting on the information country road. *American City and County*, 113(3), 44-46, 51-52, 54, 56.

The passage of the Telecommunications Act of 1996 mandated that telecommunications service providers furnish all schools with affordable Internet access; it did not make the same provision for local governments. Thus, many rural area local governments have found themselves being left without Internet service due to a lack of funds. However, some local governments are taking matters into their own hands and becoming wired to the Internet.

10. Bradshaw, T. K. (1990, October). *Rural development and telecommunications potential and policy* (Working Paper No. 524). Berkeley: Institute of Urban and Regional Development, University of California.

11. Brown, R. (2003). Full speed ahead: Broadband gains momentum in rural America. *Rural Telecommunications*, 22(3), 20-24.

This article points out an important role for small telcos and co-ops in investing in and deploying Broadband networks. The Rural Utilities Service's Rural Broadband Access Loan and Loan Guarantee program has \$1.4 billion available this year for this express purpose. The argument was also made that high-speed Internet access does best when paired with broadband video offerings and as well, that digital television via broadband is far superior to cable offerings. The recommended was also made that new video entrants join a head end consortium that shares the cost of transmitting the video signals.

12. Calabrese, A., & Jung D. (1992). Broadband telecommunications in rural America: Emerging Infrastructure for residential service. *Telecommunications Policy*, 16(3), 225-236.

This paper reviews recent developments in rural telecommunications policy, with particular interest in the emerging trends in the race to deploy broadband technologies. In particular this analysis views rural communities as important case studies for viewing the shared and divergent interests of the telephone and cable industries in broadband deployment. The different architecture of broadband delivery systems also reveals differences in ownership and control. An Indiana case study provides an example of the movement of telephone and cable companies into providing rural broadband service.

13. Clark, D., Brian, I., & Nigel, B. (1995). Telematics and rural business: An evaluation of uses, potentials, and policy implications. *Regional Studies*, 29(2), 171-180.

This paper examines the relationship between telecommunications and information technology investments and their impact on rural economic development.

14. Clark, D., & Unwin, K. (1981). Telecommunications and travel: Potential impact in Rural areas. *Regional Studies*, 15, 47-56.

15. Conte, C. (2001). *Networking the land: Rural America in the Information Age*. Washington, D.C.: United States. National Telecommunications and Information Administration. Retrieved on July 17, 2007 from http://www.ntia.doc.gov/TOP/publicationmedia/rural2001/networking_the_land_with_illustrations.htm

This report examines the role telecommunication plays in rural areas of the US.

16. Cronin, F. J., McGovern, P. M., Miller, M. R., & Parker, E. B. (1995). The rural economic development implications of telecommunications: Evidence from Pennsylvania. *Telecommunications Policy*, 19(7), 545-559.

This study confirms that access to advanced telecommunications services in Pennsylvania varies by geographic region. Prices vary across regions, with the highest local prices experienced by those in urban and semi-urban areas but who also have access to the most advanced services. Analysis of the impact of telecommunications infrastructure investment on the service and pricing across rural communities and economic activity at the state and county levels is also realized.

17. Cronin, F. J., Parker, E. B., Colleran, E. K., & Gold, M. A. (1991). Telecommunications infrastructure and economic growth: An analysis of causality. *Telecommunications Policy*, 15(6), 529-535.

Using time series data from 1958-1988, this paper examines the relationship between economic development and telecommunications infrastructure. This paper finds that growth in telecommunications investments stimulates overall economic growth, while improvements in gross national product lead to growth in telecommunications investments. When this evidence is added to the existing body of research, there appears to be consistent evidence of the positive effects of telecommunications investment on the US economy. These results also suggest that public policymakers should strongly consider appropriate incentives to encourage telecommunications investment across the nation.

18. Cronin, F. J., Parker, E. B., Colleran, E. K., & Gold, M. A. (1993). Telecommunications infrastructure investment and economic development. *Telecommunications Policy*, 17(6), 415-430.

After establishing a two-way causal relationship between economic development and telecommunications infrastructure investment for the US economy, these authors revisit the topic at more localized state and sub-state level. Specifically this research addresses 2 sub-categories of this type of investment; central office equipment and cable and wire, for the state of Pennsylvania and two of its counties. This paper tests the following two hypotheses: 1) The amount of telecommunications investment at some point in time is a reliable predictor of the amount of telecommunications investment at some future point in time. 2) The level of economic activity at any point in time is a reliable predictor of the amount of telecommunications investment at some future point in time. The results of this paper suggest that at the state and county level there is also this two-way causal relationship between economic development and telecommunications infrastructure investment.

19. Davidson, W. H., & Dibble, A. C. (1991). The rural challenge: Telecommunications services; Special report: Approaching the 21st century. *Telephony*, 220(11), 104-112.

A study by the US Telephone Association (USTA) examines technology improvement initiatives undertaken by Independent telephone companies to spur rural economic development. The study finds that advanced telecommunications infrastructure is a positive tool for economic development as it attracts new businesses, improves competitiveness, and generally diversifies the local economic base. While these services can improve the quality of life in rural areas, there continue to be significant regulatory and financial hurdles to achieving these technology improvements.

20. Deavers, K. (1992). What is rural? *Policy Studies Journal*, 20(2), 184-189

Rural areas are unique and have distinct difference from urban centers that are important for public policy development. Rural communities have lower population density, longer distances to large urban centers and specialization of their economies that make them unique from their urban counterparts.

21. Dholakia, R. R., & Harlam, B. (1994). Telecommunications and economic development: Economic analysis of the U. S. experience. *Telecommunications Policy*, 18(6), 470-477.

Reviewing statistical data for the fifty states of the United States suggests that telecommunications infrastructure has a strong positive impact on economic development. Multiple regression analysis compares the relative strength of different resource inputs and their relative impact on economic development. This research reveals that there are not simple trade-offs between investment in one input or another but resource investment requires multiple inputs, including investment in education, telecommunications and physical infrastructure. Even with this, the analysis suggests that telecommunications investment, when viewed by itself, appears to make a more significant impact on development than other types of developmental inputs.

22. Dillman, D. A. (1990). *Rural telephone infrastructure and economic development in Washington state: A case study* (Technical Report 90-103). Pullman, WA: Social and Economic Sciences Research Center, Washington State University.

23. Dillman, D. A. (1991). Telematics and rural development. In C. B. Flora & J. A. Christianson (Eds.), *Rural policy for the 1990s* (pp. 292-306). Boulder, CO: Westview Press.

24. Dillman, D. A., & Beck, D. M. (1988). Information technologies and rural development in the 1990s. *Journal of State Government*, 61(1), 29-38.

25. Dillman, D. A., Donald, M. B., & Allen, J. C. (1989, February). Rural barriers to job creation remain, even in today's Information Age. *Rural Development Perspectives*, 21-27. Rural Telecommunication Bibliography 33

26. Duncan, B., & Culver, V. (2000). *The Potential impact of E-commerce on the rural South: Will it equalize or deepen the Digital Divide?* Mississippi State, MS: Mississippi State University, Southern Rural Development Center. Retrieved on July 17, 2007 from <http://srdc.msstate.edu/publications/duncan.pdf>

This article upholds that participation in E-commerce is critical to the success of businesses across the South. It proposes that businesses need to harness the strength of this technology to ensure future success. The rural South is acknowledged to be at a disadvantage in terms of access to and adoption of advanced information technology and thus this effort will require significant public/private efforts. To use E-commerce as an economic development tool, state and local policymakers must critically review their present and future approach to Internet access and consider substantive changes to improve deployment, access, and use of the Internet for E-commerce purposes.

27. Egan, B. L. (1992). Bringing advanced technology to rural America: The cost of technology adoption. *Telecommunications Policy*, 16(1), 27-45.

This paper examines the positive and negative issues of the development of an advanced telecommunications infrastructure to serve rural areas of the USA. To begin with there are substantive cost differences between bringing existing rural telephone subscribers onto the network and bringing new service to remote subscribers. With shared network facilities by the energy, transportation, and communication sectors, existing customers could be upgraded to a digital fiber network without large rate increases. The customer group without existing telephone service should be treated separately for public policy purposes.

28. Egan, B. L. (1996). *Improving Rural Telecommunications infrastructure*. Paper prepared for TVA Rural Studies University of Kentucky, Lexington, KY. Retrieved on July 17, 2007 from http://www.rural.org/workshops/rural_telecom/egan/1.htm

This paper upholds that providing advanced telecommunications service to communities around the nation will require unique solutions that are tailored to the specific conditions of each community. Local supply and demand conditions vary across the nation, especially in rural areas, and thus require unique solutions to ensure that

communities maximize the benefits from network investments. In order to ensure low cost, successful network investment flexible network deployment strategies must be developed. In the end wireline and wireless network manufactures must develop flexible standards to ensure that communities around the nation can achieve efficient, low cost connectivity with efficient interconnection between networks.

29. Ewalt, J. H. (1998, Winter). Rural America online: Cable television brings the benefits of broadband telecommunications to rural communities. *Forum for Applied Research and Public Policy*, 13, 84-86.

30. Fox, W. F., & Porca, S. (2001). Investing in rural infrastructure. *International Regional Science Review*, 24(1), 103-133.

31. Freshwater, D. (1998, Winter). Rural America's Information Age: The economic future of rural communities depends on their ability to take advantage of emerging telecommunications technologies. *Forum for Applied Research and Public Policy*, 13, 72-79.

32. Gilson, P., Bannister, M., & Aistrup, J. (2001). Economic impact of a rural computer services center. *Economic Development Review*, 17(3), 52-55.

This paper examines the economic impact of Sykes Enterprises Inc., a leading third-party support provider for the computer and software industries, on the economy of Hays, Kansas. The conclusion of this paper is that this has been a good investment for the community as retail, housing, automotive and several other sectors have benefited substantially from Sykes move to the community. By the end of 2003, all government entities, including the city of Hays, will have recouped their initial investments and thus will be earning positive net revenues from this firm's expansion. The article concludes that Kansas, as well as other states, should seriously consider the benefits of investment in firm expansion and relocation as an economic development tool.

33. Glasmeier, A. K. (1991). *The high-tech potential: Economic development in rural America*. New Brunswick, N.J: Center for Urban Policy Research.

The book takes a critical look at whether rural areas can harness their high tech potential for rural economic development. The book asks difficult questions about state and local economic development policy and provides suggestions for policy improvements.

34. Glasmeier, A., & Howland, M. (1995). *From combines to computers: Rural services and development in the age of information technology*. Albany, NY: State University of New York Press.

Following the lead of the national economy, rural economies across American have also shifted towards a service oriented economic base. This book highlights the transition of rural communities across America and underscores the role of advanced information technology in this move to a service oriented economy. It discusses the differences in service sectors of urban and rural communities, as well as the possibilities of rural development strategies in a service oriented economy.

35. Hollifield, C. A., & Donnermeyer, J. F. (2003, May). *Creating demand: Influencing information technology diffusion in rural communities*.

This research examines rural residents' early adoption of advanced communications technologies at a time when evidence supported a growing rural/urban digital divide. The results indicate that early adoption of information technology was primarily driven by individuals who were employed by firms that were using specific technologies. This impact was especially strong for individuals with less formal education. In order to increase local rural demand and adoption of telecommunications services, this study suggests economic development officials should consider supporting and encouraging local businesses to adopt advanced information technologies.

36. Hopkins, J., & Morehart, M. (2001, November). Farms, the Internet, & e-commerce: Adoption & implications. *Agricultural Outlook*, 286, 17-20.

37. Hudson, H. E. (1984). *When telephones reach the village: The role of telecommunications in rural development*. Norwood, NJ: Ablex.

This book uses a development framework to examine the role of telecommunications in the development process. It brings together a body of research to explore the role of telecommunications in the development of both developed and developing countries.

38. Hudson, H. E. (1985). Demand and need: Problems in planning rural telecommunications. *Telematics and Informatics*, 2(3), 251-258.

39. Hudson, H. E. (1988). *A Bibliography on telecommunications and socio-economic development*. Norwood, MA: Artech.

40. Hudson, H. E. (1995, June). *Economic and social benefits of rural telecommunications: A Report to the World Bank*. Retrieved on July 5, 2007, from http://www.usfca.edu/fac_staff/hudson/papers.htm.

This report provides an overview of key studies and literature on the economic and social benefits of Rural Telecommunications programs. The purpose is to consider findings that are relevant for developing countries. The overall goal of this report is to refocus investment strategies and priorities given the current body of knowledge.

41. Hudson, H. E. (2000). Extending access to the digital economy to rural and developing regions. In E. Brynjolfsson and B. Kahin (Eds.), *Understanding the digital economy*. Cambridge, MA: The MIT Press.

42. Hudson, H. E., & Parker, E. B. (1990). Information gaps in rural America: Telecommunications policies for rural development. *Telecommunications Policy*, 14(3), 193-205.

This paper discusses the challenges the US telecommunications industry faces in overcoming the disadvantages that many rural communities face in a service and information oriented economy. One solution is to improve the provision of telecommunications services by extending access and improving switching systems and transmission quality. State and federal regulation and policy must also support these efforts with complementary policy goals to improve rural telecommunications access and use.

43. Kerr, W. T., & Blevins, B. C. (1984). Telecommunication services for rural and remote areas. *Telematics and Informatics*, 1(1), 37-46.

This article describes the methods and processes used to provide advanced telecommunication services to people in rural Canadian regions. The results of initiatives in health and education are discussed along with ideas for extension and application of these programs to other regions and in other countries.

44. Korsching, P. F., Hipple, P. C., & Abbott, E. A., (Eds.). (2000). *Having all the right connections: Telecommunications and rural viability*. Westport, CT: Praeger.

This book highlights the role of telecommunications in rural economic development. Based on five years of survey and case study research this book examines nine sectors of the rural economy and how they access and use telecommunications technologies. The sectors included are local government, economic development, business, newspapers, library services, health care, university extension to communities, and farming. The authors utilize a community development framework to examine the variables that promote and retard telecommunications

investments. The book looks carefully at Telecommunications policy, telecommunications infrastructure and service issues, as well as community leadership issues.

45. Korsching, P. F., El-Ghamrini, S., & Peter, G. (2001). Rural telephone companies: Offering technology innovations to enhance the economic development of communities. *Technology in Society*, 23(1), 79-91.

This paper examines the role of rural telephone carriers in the deployment and provision of advanced communications technologies to rural communities. This study looks specifically at rural telephone companies in Iowa and the variables that influence their adoption and provision of advanced telecommunications technologies and services. The results indicate that technological innovativeness of the local rural telephone company is strongly correlated to the involvement of the telephone company in local development activities. This suggests that local rural development officials should seek to involve local telephone companies in community development issues at all levels.

46. LaRose, R., & Jennifer, M. (1989). Who uses information technologies in rural America? *Journal of Communication*, 39(3), 48-60.

This paper compares technology use of rural and urban individuals and the impact of socioeconomic and demographic status on technology use. Using a large scale survey of seven geographically and demographically diverse rural areas this paper indicates that rural residents are as likely to use computer technologies as their non rural counterparts.

47. Lasley, P., Padgitt, S., & Hanson, M. (2001). Telecommunications technology and its implications for farmers and extension services. *Technology in Society*, 23(1), 109-120.

This article explores the extent to which farmers have embraced telecommunications technologies for information or other farm operations. Surveying Iowa farmers, this paper examines how farmers use electronic communications, their preferences for information dissemination and interest in precision farming. Based on indicated preferences the analysis suggests that modern telecommunications will likely supplement, rather than replace traditional communication sources. The demand for extension services is likely to increase, rather than decrease, as farmers supplement more traditional communication methods with more advanced telecommunications technology.

48. Leatherman, J. (2001, April). Internet commerce: Challenges for the rural public sector. *Community Economics Newsletter* (Center for Community Economic

Development, University of Wisconsin-Extension [Newsletter] No. 294). Retrieved on July 5, 2007, from <http://www.aae.wisc.edu/pubs/cenews/>
Discusses issues of Internet commerce in relationship to the rural public sector.

49. Lehner, J. C. (1990). Toward rural revival: The Telco-community partnership. *Rural Telecommunications*, 9(3), 10-15.

50. Leistritz, F. L., Allen, J. C., Johnson, B. B., Olsen, D., & Sell, R. (1997). Advanced telecommunications technologies in rural communities: Factors affecting use. *The Journal of the Community Development Society*, 28(2), 257-276.

This paper examines the relationship between community and individual characteristics and the likelihood of technology adoption in rural communities. The authors surveyed approximately 2,000 residents from 6 states across the Midwest. They report high levels of access and use of telecommunications technologies in rural towns and cities. The results indicate that service sector growth in these communities will increase the use of telecommunication technologies in rural areas.

51. Macias, E., R. Cutler, et al. (2002). *Promoting access to network technologies in underserved communities: Lessons learned*. Tomas Riveria Policy Institute. Retrieved on July 5, 2007, from <http://www.trpi.org/update/informationtechnology.html>

This report examines the impact of networking upon underserved communities including those in rural areas.

52. Malecki, E.J. (1996). *Telecommunications technology and American rural development in the 21st Century*. Report prepared for TVA Rural Studies, Lexington, Kentucky. Gainesville, FL: Dept. of Geography at the University of Florida. Retrieved on July 17, 2007 from http://www.rural.org/workshops/rural_telecom/malecki/

53. Malecki, E. J. (2003). Digital development in rural areas: potentials and pitfalls, *Journal of Rural Studies*, 19(2), 201-214.

This paper examines the current telecommunications infrastructure in rural communities across America. Rural areas appear to have serious shortcomings in digital infrastructure. While there is evidence of a digital divide between rural and urban areas, there are solutions available. Demand aggregation is one possible solution, however this article argues a more serious problem for rural communities is a lack of appropriate human capital. Rural businesses also need to seriously consider how they use the internet and e-commerce. Overall, this article proposes that telecommunications investment is not a panacea for rural communities. It is a long-term economic development strategy that may not work across all rural communities.

54. National Exchange Carrier Association (2000). *NECA rural broadband cost study: Summary of results*, NECA. Washington, DC: Author. Retrieved on July 17, 2007 from <http://www.neca.org/media/broadban.pdf>.

55. National Telecommunications and Information Administration. (1995, September). *Survey of rural information infrastructure technologies* (NTIA Special Publication 95-33). Retrieved on July 17, 2007 from <http://www.its.bldrdoc.gov/pub/rural/>

This report identifies current information and communications technologies (ICT), and related services, that are currently available to rural communities. This technology, along with key voice, computer and video services, can significantly reduce the distance disadvantage of a rural community. This report concludes that there is technology that can separately deliver many of these services to rural towns and cities but there is not one technology that can deliver them all. Moreover, there is no technology that can economically provide broadband to the most remote farms, ranches and homes. New wireless technologies will likely make the remotest access possible in the future. In addition, public policy plays a key role in the development of rural and urban infrastructure and serious consideration should be given to the regulation and policies governing rural areas.

56. Oden, M., & Strover, S. (2002). *Links to the future: The role of information and telecommunications technology in Appalachian economic development*. Austin, TX: University of Texas.

57. Organization for Economic Co-operation and Development. (2003, October). *Broadband driving growth: Policy responses* (DSTI/ICCP(2003)13/FINAL). Retrieved on July 17, 2007 from <http://www.oecd.org/dataoecd/18/3/16234106.pdf>

Broadband deployment and access is an important component to information communication technology (ICT) adoption and use. Moreover, ICT infrastructure investment can contribute to improved productivity and economic growth across sectors of the economy. Broadband technologies are a key platform for knowledge based economies that enhance efficiency, network effects and innovation. Broadband can improve productivity and information exchange for business, public sector services like health, education and government and enhance the quality of life of consumers through economic, social and cultural development. Broadband deployment and access can be especially problematic in rural and remote areas, while these consumers and businesses have much to gain from broadband access. Broadband access for rural and remote consumers provides economic and social opportunities that will allow these communities to fully participate in the economic and social life of the digital economy.

58. Parker, E. B. (1990). *Communications investment to promote economic development. In Infrastructure Investment and Economic Development: Rural Strategies for the 1990s*. Rockville, MD: Economic Research Service-U.S. Department of Agriculture, Agriculture and Rural Economy Division.

This report looks at the general role of infrastructure and the impact it has on the economy of rural communities. This report specifically addresses the role of investment in transportation, communications, water and wastewater infrastructure and the impact these investments have on economic development.

59. Parker, E. B., Hudson, H. E., Dillman, D. A., & Roscoe, A. D. (1989). *Rural America in the Information Age: Telecommunications policy for rural development*. Lanham, MD: The Aspen Institute and University Press of America.

This book upholds that telecommunications investment, unlike other forms of investment, can be an economic development catalyst to diverse industries in rural communities. Unlike investment that targets specific industries or regions, today's information communication technologies can broaden and deepen the economic base of rural regions across the nation.

60. Premkumar, G., & Roberts, M. (1999). Adoption of new information technologies in rural small businesses. *Omega-International Journal of Management Science*, 27(4), 467-484.

This paper seeks to clarify the factors that cause rural small business to adopt information communication technologies (ICT). A model is examined with independent variables that represent innovation, organizational, and environmental characteristics and a dependent variable representing adoption of information communication technologies. Seventy-eight organizations were surveyed concerning their adoption of four key information communication technologies. The results reveal that management support, organizational size, external pressure, relative advantage, and competitive pressures are all important variables that impact small, rural firms' adoption of ICT's.

61. Read, W. H., & Youtie, J. L. (1996). *Telecommunications strategy for economic development*. Westport, CT: Praeger.

Communities around the world are leveraging telecommunications jobs and resources as they seek to improve local and regional economic development. This book reviews cases studies like Richardson, Texas, Singapore, and Atlanta, Georgia to highlight how today's local political leaders and economic developers are using telecommunications resources to boost employment and local development. The

authors detail the success and failures of each particular case to further clarify what has worked across these communities. This book is an important resource for planners, politicians, and scholars who want to gain a better understanding of the link between ICT infrastructure and economic development.

62. Roepke, H. G. (2001, Winter). Industrial possibilities for non-metropolitan areas. *Economic Development Review*, 17(3), 105-114.

This is a reprint of a 1973 article that describes the types of industry that may be attracted to rural areas and the kinds of programs that can be used to attract them. The paper highlights the specific types of industries that are attracted to rural areas and the types of rural areas most likely to attract industry. Further, this article examines some of the ways rural areas can improve the possibility of attracting industries and highlights some of the research on why industries are not moving to rural communities.

63. Rowe, B. (2003, May). Rural technology deployment and access: Successes upon which to build. *Government Information Quarterly*, 20(2), 85-93.

This article discusses the state of rural technology deployment and access and considers whether there continues to be a digital divide or not. Other important considerations are whether current rural telecommunications infrastructure is supported and sustainable in the long-term. This article, in effect, examines whether there is a problem at all with rural telecommunications deployment, access and utilization.

64. Rowley, T. D., & Porterfield, S. L. (1993). Can telecommunications help rural areas overcome obstacles to development? *Rural Development Perspectives*, 8(2), 2-6.

65. Sawhney, H. (1992). Demand aggregation strategies for rural telephony. *Telecommunications Policy*, 16(2), 167-178.

As new technology develops, rural areas often do not have the pockets of demand that would justify the supply of those services to the community. Recent technological developments, however, allow for a demand aggregation model to bring together diverse pockets of rural demand. This paper presents a demand aggregation model as a framework for developing innovative network strategies. The model explains three kinds of rural demand; dispersed, fragmented and latent, that can all be modeled to make demand aggregation a real possibility for rural communities to attract commercially viable telecommunications access and service.

66. Schaeffer, P. V., & Loveridge, S. (Eds.). (2000). *Small town and rural economic development: A Case studies approach*. Westport, CN: Praeger.

67. Schement, J. R., & Tate, M. A. (2003). *Rural America in the Digital Age: A preliminary assessment of the state of the information/telecommunications infrastructure in ten counties of North Dakota and Pennsylvania*. The Rural Policy Research Institute.

Retrieved from

http://www.rupri.org/Telecomm/publications/Schement_RUPRI_paper03.pdf

This paper presents a description of the information communications technology (ICT) infrastructure in five counties in North Dakota and five counties in Pennsylvania. The examination is meant to allow for the creation of a decision making framework to guide rural ICT public policy in the future.

68. Schmandt, J., Williams, F., Wilson, R.H., & Strover, S. (Eds.). (1991). *Telecommunications and rural development: A study of private and public sector innovation*. New York: Praeger Publishers.

69. Schmidt, J. (Ed.). (1997). *Rural infrastructure as a cause and consequence of rural economic development and quality of life* (SRIEG-16 Publication No. 5; SRDC Publication No. 207). Mississippi State University, Southern Rural Development Center. Retrieved on July 17, 2007 from <http://srdc.msstate.edu/publications/207.pdf>

The 1997 session of the Southern Extension/Research Activities Information Exchange Group-16 (SERA-IEG-16) focused on theory, research and educational models pertaining to community sustainability. The long-term sustainability of rural communities is dependent upon their ability to efficiently mobilize and use their financial, physical and intellectual resources. Rural areas need consider their short and long-term infrastructure modernization and its relation to economic development and long-term sustainability. Papers and models were presented that further examine sustainability. Community examples in Virginia, as well as a multi-state pilot program, highlight several community sustainability initiatives.

70. Smith, Greg, (2003). *Becoming a New Age Rural Community: Building by Example*. *Rural Research Report*, 14(6): 1-10. Retrieved on July 26, 2007 from http://www.iira.org/pubsnew/publications/IIRA_RRR_572.pdf

Creating a New Age rural community with advanced telecommunications and technology may help rural communities experience an economic resurgence while also proving a safe haven for both organizations and citizens seeking to escape from urban pressures. The foundation needed for this New Age rural community is identified here

through the efforts of one Kansas community. The steps the community took to achieve its goal are also discussed

71. Stover, S. (2003). The prospects for broadband deployment in rural America. *Government Information Quarterly*, 20, 95-106.

While the Telecommunications Act of 1996 promised equality of Internet access across urban and rural communities, the reality has been much different with a growing rural/urban Internet divide. This paper examines several of the programs and policies that have been put forth to eliminate this growing digital divide. They conclude that existing programs and policies will be unable to realize widespread rural broadband deployment and in the short-term many rural regions will be left without any access to broadband service.

72. Stover, S., Oden, M., & Inagaki, N. (2002?). *Telecommunications and rural economies: Findings from the Appalachian region*. Austin, TX: University of Texas. Note: Paper printed out.

73. Stover, S., & Williams, F. (1991). *Rural revitalization and information technologies in the United States*. Research report prepared for the Aspen Institute and Ford Foundation.

74. Ullman D., Williams, S., & Emal, J. (1996). Using technology to stimulate rural economic development: Nebraska's community Internet navigator program. *Economic Development Review*, 14(1), 14-15

Nebraska's Community Internet Navigator Program was a cooperative effort by the state's development agency, the University of Nebraska-Lincoln, and individual Nebraska communities. This pilot sought to utilize college students that were returning to their rural communities over the summer who could use the Internet to find economic development information that would benefit their community. Since this program began in 1994, many communities have inquired about adding communities and expanding the program. Ultimately this pilot sought to use the Internet as a critical information resource combined with an innovative approach to providing training and information delivery to rural communities.

75. Ungar, Bernard L. (2003, September 4). *Facilities location: Progress and barriers in selecting rural areas and using telework: Testimony before the Committee on Small Business, House of Representatives: Statement of Bernard L. Ungar, Director, Physical Infrastructure Issues*. Washington, DC: Author. Retrieved on July 17, 2007 from <http://www.gao.gov/new.items/d031009t.pdf>.

This testimony summarizes and updates work that has previously been done to meet the conditions of the Rural Development Act of 1972. This act requires federal agencies to give rural locations first priority when locating new offices or other facilities. Rural areas typically have lower labor and real estates costs which can be a key inducement for choosing these locations. Telework, which allows workers to work at home or other locations other than a traditional office, has also become a viable option for many rural federal workers. Telework is an important cost saving measure for government and business and may also reduce traffic congestion and improve worker retention.

76. University of Massachusetts, Donahue Institute. (2002). *Technology as an economic catalyst in rural and depressed places in Massachusetts*. Massachusetts: Author. Retrieved on July 17, 2007 from <http://www.donahue.umassp.edu/pdf/Eda.pdf>

This study examines five communities in Massachusetts that have been adversely impacted by military spending cutbacks. It reviews the role of technology in these communities and how it can be a catalyst for development in communities experiencing economic downturns.

77. Venkatachalam, S., & McDowell, S. D. (2003, May). What is broadband? Where is "rural"? *Government Information Quarterly*, 20(2), 151-166.

Note: Article printed out and also saved as a pdf file, VenkatachalamS2003.pdf.

The National Telecommunications and Information Administration's (NTIA) November 2001. *Request for Comments on Deployment of Broadband Networks and Advanced Telecommunications Services* generated comments concerning the definition of broadband services, and policies used to promote and deploy broadband services and infrastructure. This paper uses a framework type of analysis to examine these comments and further define broadband services for future public policy.

78. Wellenius, B. (1984). On the role of telecommunications in development. *Telecommunications Policy*, 8(1), 59-66.

Over the past 20 years, a number of studies have been conducted to assess the influence of telecommunications on economic development for developing countries. These studies are summarized, and it is concluded that they have, to varying extents, documented that telecommunications development positively affects economic development. Additional research along this line will have little impact on telecommunications investment decisions in developing nations. Instead, the results of this research must be communicated to those government officials and international agencies responsible for development investment decisions. The economic contributions of telecommunications can best be emphasized in connection with

specific telecommunications project plans, based on economic documentation, prepared case material, and data on benefits distribution. Webber and Cleevly comment that further research is needed to document the spatial effects of telecommunications, showing how telecommunications connectivity affects the distribution of benefits both within and across countries.

79. Western Governors' Association. (2001). *Centers of excellence in rural America* [Home page]. Retrieved on July 17, 2007 from www.westgov.org/wga/initiatives/cera.htm

Centers for excellence in rural America (CERA) are small rural communities across Wyoming and North Dakota that have diligently worked to deploy affordable, high speed telecommunications services in their towns. Current participants are Lusk, Powell, and Glenrock in Wyoming and Watford City and Mayville in North Dakota."

80. Wilson, R. H. (1992). *Rural Telecommunications: A strategy for community development*. *Policy Studies Journal*, 20(2), 289-300

This paper examines telecommunications innovations in rural areas, along with the policy and development issues that may go with these innovations.

81. Wirtz, R. A. (1999, April). *Rural businesses are spurring much of the growth in telecommunications*. Retrieved on July 17, 2007 from http://www.minneapolisfed.org/pubs/fedgaz/99-04/telecomm.cfm?js=0_

This article reveals that the demand for advanced telecommunications service is growing rapidly across rural communities. Examples of rural branch offices, ranchers, and local companies stepping up to compete for contracting jobs, all illustrate opportunities for rural areas to join and benefit from advanced information communication technology.

82. Wohlbruck, A., & Levy, M. (2001). Linking communities to opportunities through telecommunications. *Economic Development Review*, 17(3), 34-39.

This paper argues that three main variables will determine the outcome of the Telecommunications Act of 1996 in rural communities; technology, geography and demography. Advanced telecommunications access has not been shared equally by rural and metropolitan communities. They call for economic and community development professionals to incorporate telecommunications access into their short and long-term economic development plans. Some ideas for rural areas to take full advantage of advanced telecommunications technology are presented.

83. Wood, L., & Glasmeier, A. K. (2000). *On hold: Telecommunications in Rural America*. Washington, DC: Economic Policy Institute. Retrieved on July 17, 2007 from http://www.epi.org/content.cfm/books_on_hold

This book is divided into six distinct segments that highlight the role of telecommunications in rural communities. This book begins by reviewing the history and unique problems that rural areas have with access to modern telecommunications. This is followed by an examination of the infrastructure challenges that many communities face as technology changes. In addition, this book explores the technological choices and potential benefits technology can bring to these communities. The important role for public policy in the distribution of this technology to rural communities is also discussed.