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Information Technology Diffusion Among Businesses in Nebraska: What Does It Mean for the Future?

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Market Report	Yr Ago	4 Wks Ago	6/8/01
Livestock and Products, ***Average Prices for Week Ending***			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt	$70.14	$74.89	$76.50
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt	*	93.00	102.75
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg	103.00	110.36	106.73
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt	113.74	115.00	120.78
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt	49.00	53.00	51.50
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd	44.50	40.00	*
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt	124.70	125.40	127.20
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt	89.75	84.37	*
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt	210.00	*	168.75
Crops, ***Cash Truck Prices for Date Shown***			
Wheat, No. 1, H.W. Omaha, bu	2.93	3.28	3.18
Corn, No. 2, Yellow Omaha, bu	1.93	1.70	1.75
Soybeans, No. 1, Yellow Omaha, bu	4.98	4.21	4.51
Grain Sorghum, No. 2, Yellow Kansas City, cwt	3.38	3.20	3.37
Oats, No. 2, Heavy Sioux City, IA , bu	1.20	1.39	1.50
Hay, ***First Day of Week Pile Prices***			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton	102.50	115.00	105.00
Alfalfa, Lg. Round, Good Northeast Nebraska, ton	70.00	82.50	67.50
Prairie, Sm. Square, Good Northeast Nebraska, ton	70.00`	105.00	112.50

* No market.

In the past decade, there has been a convergence of computer and telephone technologies that has created the Internet, arguably the most rapidly embraced technology in history. Using a benchmark of rapid diffusion as the time required to reach 50 million users, the public Internet, which took four years to reach 50 million users, is spreading more rapidly than radio (38 years), the personal computer (18 years), television (13 years) or any other modern technology. The result has been that the Internet has already reached “mass market” status (Burgess, 1999).

One issue that has been raised throughout the diffusion process of Internet technology has been the urban/rural differences in rates of adoption. Recent data indicate that the urban and rural gap has closed significantly. In 1998, there were 4.0 percentage point differences between urban and rural households, with rural households more likely to not be connected to the Internet. By 2000, however, that difference had narrowed to a 2.6 percentage point difference (U.S. Department of Commerce, 2000).

In an attempt to gain a better understanding of how rural Nebraska business owners and operators are utilizing Internet technology, as well as other information technologies, a study was conducted in 2000 by the Center for Applied Rural Innovation, University of Nebraska-Lincoln and the America Information Management Institute in Omaha, Nebraska. Three hundred eighty-two (382) rural Nebraska business owners and operators were asked how these technologies are being used in their businesses.

As Table 1 indicates, computer technologies are currently more heavily used than are Internet technologies. This reflects the longer diffusion process for personal computers. As one might expect, the intellectual and technical infrastructures to support use of the Internet are clearly not as “mature” in rural areas as are computer-based solutions. The data suggest that, while some Internet business functions are readily accessible and easy to use, others are not. E-mail is readily available and easily implemented in rural Nebraska. Information and research are available, yet a higher degree of study and practice is

required to become highly proficient. The data also suggest that vendor-based solutions for many of the more sophisticated business-related applications are immature. Included among these applications and functions are: catalog posting, payment systems, security solutions and banking solutions.

Table 1. Utilization of Information Technology by Rural Businesses*

Nebraska Businesses Connected to the Internet	**58.4%**
Nebraska Business Owners/Managers with Computers in their Home	**70.5%**
Nebraska Business Owners/Managers Connected to the Internet in their Home	**61.1%**
Nebraska Businesses Using E-mail	**57.9%**
Nebraska Households Connected to the Internet	**37.0%**
Nebraska Rural Households that Purchased Goods and Services Using the Internet this Last Year	**29.0%**

In terms of Web development, there is wide variation across the state's businesses, ranging from relatively primitive solutions to highly sophisticated ones. While this study suggests it will be some time before Nebraska's rural businesses reach maturity in using information technology, it is clear that the state's rural business owners/operators view information technologies as keys to future success.

Of those business owners and operators responding to the survey, 67 percent indicated that computer applications for record keeping/accounting/payroll, correspondence and the Internet were very important for the future. Only 4 percent of rural Nebraska businesses use the Internet to promote their businesses, yet 23 percent believe it will be very important in the future that they use this technology for promotion.

When business owners were asked about the availability of specialized skills available to them locally to develop Internet business strategies, many suggested that gaps exist. In fact, 44 percent indicated that local expertise was lacking to develop security services for online transactions; 33% indicated technical assistance was not available to conceptualize Web size attributes; 40% cited lack of available expertise for graphic animation; and 35% noted the unavailability of technical support for making electronic payments. The unavailability of intellectual infrastructure to support business utilization of Internet technology poses a serious barrier to continued adoption and diffusion of information technology among rural businesses.

Currently, two University of Nebraska initiatives are organizing to help meet the research and education needs identified by rural Nebraska business owners. The first is the "Technologies across Nebraska Initiative" led by Nebraska Cooperative Extension; and the second is the University of Nebraska's "Rural Initiative." Both of these efforts have at least a portion of their respective missions directed at enhancing the capabilities of Nebraska business owners, including agricultural producers, to participate in the "Information Society."

Because of the rapid diffusion of this new technology, it is crucial that rural Nebraska businesses seriously evaluate the potential impact of Internet business applications on their long-term viability. While the future is always uncertain, it is clear that some portion of that future will be driven by Internet technology; and rural Nebraskans will need to continually evaluate their placement of products through the Internet to remain competitive in local, regional, national and even global markets.

References

"Nebraska Business Use of Information Technology," American Information Management Institute and the Center for Applied Rural Innovation, 2001, http://cari.unl.edu/materials.htm.

"The Other Digital Divide," Philip M. Burgess and Florine P. Raitano, Center for the New West, Denver, CO; special report September 1999, online edition; www.newest.org.

"Falling through the Net; Toward a Digital Inclusion," U.S. Dept. of Commerce, Economic Statistics Administration, National Telecommunications Division, October, 2000.

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Table 2. Rural Business Information Technology Applications and Future Importance*

Business Application	Used Extensively Today	Very Important Future
Computers For:		
General Correspondence/Communication	**25.2%**	**46.8%**
Record Keeping/ Accounting/Payroll	**54.6%**	**67.3%**
Internet Access	**17.9%**	**39.6%**
Internet For:		
E-mail	**18.8%**	**38.5%**
Information Research	**12.7%**	**36.8%**
Promote Business	**4.1%**	**23.1%**

* Center for Applied Rural Innovation, University of Nebraska-Lincoln, and the America Information Management Institute, "Business Use of Information Technology," 2001.

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