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NATIONAL E-COMMERCE EXTENSION INITIATIVE FOR RURAL ENTREPRENEURS

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As the role of technology has continued to evolve and shape the work conducted by land-grant university Extension faculty in rural America, Extension leaders have taken note of the well publicized digital divide between rural and urban areas. The digital divide primarily refers to the difference in broadband technology adoption. Currently, home adoption of broadband or high-speed Internet, in rural America lags urban by 20% (Pew Internet and American Life Project, 2010). But Extension leaders also recognized land-grant University Extension has a network that connects to rural America. Through the National Institute for Food and Agriculture (NIFA), a new direction was sought to utilize this network and connect rural America to educational curricula to encourage greater adoption of e-Commerce strategies. The new direction became the National e-Commerce Extension Initiative (NEEI) (Southern Rural Development Center, 2010).

NEEI's purpose is to connect rural America to educational curricula that demonstrate how business owners, governments, health providers and others can benefit from using broadband technology to gain access to global markets. Because a core of the Extension mission is community education and Extension's existing physical presence in most rural communities nationwide, adding the topic of technology adoption to Extension's outreach mission seemed like a natural fit. What was then critical to the expansion of a technology-based educational effort within the land-grant system was a coordinated program that would support Extension educators who could deliver the educational curriculum as well as play a role in the production of curriculum to expand the technological know-how of the communities served.

The addition of a focused effort on technology education is not only intended to increase personal computer skills but also to be a means for Extension to influence economic growth through the adoption of e-commerce strategies by local businesses leaders and organizations. In simple terms, e-commerce means electronic commerce, which is defined as the buying and selling of products or services over electronic systems such as the Internet (Chaudhury and Kuilboer, 2002). What is critical here is that the Internet allows rural businesses or organizations 24-hour exposure to an always open and international marketplace. Further, because exchanges of goods and services are done completely electronically or with contracted mail providers, electronically based commerce removes the remoteness of rural location as a determinant for business growth. Thus, rural community education programs focused on the subject of technology are added in hopes that personal use of technology will increase along with the adoption of e-commerce strategies as a means to intensify economic development efforts.

Origins and Educational Curricula

The NEEI began through a 2003 grant from the Cooperative State Research, Education and Extension Service (CSREES) which is now NIFA. The Southern Rural Development Center (SRDC) at Mississippi State University received the grant. The NEEI functions under the guidance of an active and highly involved advisory board made up of known Extension specialists who have actively adopted e-commerce into their program offerings, have excelled in technological awareness, and thus are seen as key leaders in Extension on the subject. A bi-monthly newsletter, coupled with national training offerings, regional coordination of training efforts, and a schedule of presentations keep active engagement of the Extension community at the

Table 1

Some Curricula Available Through the National e-Commerce Extension Initiative (NEEI)

e-Commerce Curriculum	Author(s)/ Institution(s)	Website Address
Connecting Rural Communities	William Shuffstall, Pennsylvania State University; Rae Montgomery, University of Minnesota	http://srdc.msstate.edu/ecommerce/curricula/connecting_communities/
Strengthening Competitive Advantage of Rural Businesses with E-commerce and Experience Economy Strategies	Miyoung Jeong, Ann Marie Fiore, Cheryl O. Hausafus, Linda Niehm and Haemoon Oh, Iowa State University	http://srdc.msstate.edu/ecommerce/curricula/exp_economy/
Internet Strategies to Improve Farm Business Management	Sarah A. Roth and Jeffrey A. Hyde, Pennsylvania State University	http://srdc.msstate.edu/ecommerce/curricula/farm_mgmt/
Helping Artisans Reach Global Markets	Pamela J. Brown, Texas A&M University	http://srdc.msstate.edu/ecommerce/curricula/artisans/
Marketing Food Specialty Products Online	Stan Ernst and Neal H. Hooker, Ohio State University	http://srdc.msstate.edu/ecommerce/curricula/rural_retailings/
E-Commerce as a Strategy for Improving Business Vitality: Lessons Learned from Small Rural Businesses	David L. Barkley, Clemson University; Deborah Markley, RUPRI Center for Rural Entrepreneurship, University of Missouri-Columbia; R. David Lamie, Clemson University	http://srdc.msstate.edu/ecommerce/curricula/case_studies/
A Beginners Guide to e-Commerce	Kimball P. Marshall, Alcorn State University	http://srdc.msstate.edu/ecommerce/curricula/beginners_guide/
Electronic Retailing: Selling on the Internet Curriculum	Julie Sexton, Brian McCann, and Merrill Warkentin, Mississippi State University	http://srdc.msstate.edu/ecommerce/curricula/electronic_retailings/
Security Squad: Keeping Your Equipment and Information Safe	Marilyn Schlake, Connie Hancock, Diane Becker and Mark Hendricks with video production by Mike Kamm, University of Nebraska.	http://srdc.msstate.edu/ecommerce/curricula/security_concerns/
Going Global: A Guide for e-Commerce Expansion	Rae Montgomery, University of Minnesota	http://srdc.msstate.edu/ecommerce/curricula/global_expansion/
Web Site Basics: A Primer for Hispanic Small Businesses	Brian Whitacre, Oklahoma State University	http://srdc.msstate.edu/ecommerce/curricula/hispanic_business/

Source: Southern Rural Development Center. (2010). The National e-Commerce Extension Initiative. Available at: <http://srdc.msstate.edu/ecommerce/>.

forefront. Additionally, a workshop-based mini-grants program is awarded to Extension educators who wish to host a workshop where one or several of NEEI's online learning products is spotlighted. Lastly, the NEEI seeks to maintain and expand upon partnerships with other land-grant Universities through the use of online curriculum, assistance with technologically based Extension programming, and advisement on how best to incorporate technological skill and e-commerce education into future statewide broadband adoption efforts.

Early in NEEI's inception the key goal was to build a pool of Extension professionals who understood the opportunity that technology education presented to rural communities in terms of economic development through the adoption of e-commerce strategies. Therefore, feedback was collected from Extension educators and specialists on which e-commerce educational topics would meet the needs of their clients and what types of programming support would best enhance their work plans with rural audiences on ways to successfully adopt technology. From these needs assessment efforts, not only were key topics identified but it was determined that the NEEI would retain a goal of actively seeking to build the Extension communities' awareness as to their potential to facilitate needed technology-based educational efforts. Table 1 shows the different types of curricula available through NEEI.

These curricula also include the competitive advantages of using technology, further demonstrating how rural business owners can benefit from adoption. While *Internet Strategies to Improve Farm Business Management* provides an overview of how using broadband can benefit profitability in the operations of agricultural based businesses. Offered in both English and Spanish, *Web Site Basics: A Primer for Hispanics Small Businesses* gives both the bilingual entrepreneur and those seeking to reach Spanish speaking markets news ideas on web presences and marketing techniques. *Marketing Food Specialty Products Online* and *Helping Artisans Reach Global Markets* are also featured. Because teaching rural communities about the benefits of technology education is central to NEEI's mission, *The Connecting Rural Communities* curriculum shows communities an action plan to assess and better develop broadband infrastructure to increase rural connectivity and adoption of broadband specifically.

Connecting with Extension Faculty

The primary NEEI goal focused on engaging Extension to add technology to educational outreach efforts to encourage adoption of e-commerce strategies. This effort began by supervising an educational resource grants program. The competitive grants process is aimed at producing e-commerce related learning curricula for Extension adoption. To do this, the NEEI solicited and continues to solicit project proposals from land-grant University faculty who desire to develop a research agenda around topics of Extension interest related to e-commerce. The educational resource grant applicants have the additional task of identifying ways to create a curriculum from the research findings that allows for easy Extension facilitation

Table 2**National e-Commerce Extension Initiative
Program Summary, 2010**

Curriculum Name	State(s)	Number of Counties	Average County Population ¹	Average County Unemployment Rate ²	Average County Poverty Rate ³	Number of Participants ⁴
A Beginners Guide to e-Commerce: Easy Tools for Profit	Alabama	1	80242	13.2*	19*	21
Helping Artisans Reach Global Markets	Tennessee	7	45004	8.9	11	128
Strengthening Competitive Advantage of Rural Businesses with e-Commerce and Experience Economy Strategies	Oklahoma, Michigan, and Missouri	17	35718	7	12	182

Sources:¹ US Census Bureau (2009)² U.S. Bureau of Labor Statistics (2009) (Mean Unemployment Rate for the United States 9.3)³ U.S. Census Bureau (2008) (Mean Poverty Rate for the United States 13.0)⁴ Reported by Funded Extension Facilitator

* Denotes Higher than National Mean

and meets the needs of audiences served by Extension educators and specialists. Educational materials, once developed, peer reviewed, and piloted to a targeted population are then edited, designed, and formatted into an online learning module format.

The resulting Internet based e-commerce learning curriculum is then made available for all interested learners to use on the NEEI web site. With its competitive educational resource grants program still ongoing, sixteen educational resource development projects have been funded that have thus far resulted in eleven online learning curricula as shown in Table 1 and one complete, customized curriculum evaluation tool. At present there are four other educational resource projects in various stages of development with three new online learning curricula scheduled for release in winter and spring of 2011.

One way of keeping the Extension community engaged is by publishing eNews, an SRDC produced bi-monthly newsletter, available at <http://srdc.msstate.edu/e-commerce/enews>. Further engagement occurs through the training of Extension personnel regarding what online learning modules the NEEI has to offer for Extension programs and how best to position e-commerce learning within current community educational offerings. To date, the NEEI has conducted national training sessions for Extension specialists and educators in 2006, 2007, and 2009.

To further the goal of the Extension communities' awareness of the potential for e-commerce adoption and what curriculum the NEEI has for Extension programs, the culmination of the 2009 NEEI's summer training workshop in Atlanta, Georgia was the creation of four regional teams of Extension educators to oversee increased regional exposure of online learning resources. To increase the likelihood of greater regional success, each identified e-commerce action team was awarded funding to make program resource presentations at existing Extension training workshops and conferences, develop their own regional training seminars for Extension

educators, and allow educators to incorporate invited e-commerce experts into these offerings. As of fall 2010, all four teams of Extension educators and specialists were working to identify avenues for presenting NEEI resources and finalizing training plans that meet the needs of the Extension community within their slated regions.

The Role of Mini-Grants

The last Extension engagement programming effort in technological education aimed at e-commerce business strategy adoption of the NEEI is the workshop-based mini-grants program. The program provides

seed funding to Extension applicants and their community partners who have enough exposure to the online learning curricula to allow for an effective presentation of the materials. Applicants must show a clearly identified instance where e-commerce education is predicted to increase economic or operational activity within rural organizations, small businesses, or individual proprietorships. Delivered in either a face-to-face workshop or webinar format, these mini-grant funding efforts not only get the educational materials into communities that could benefit from specialized e-commerce learning but also create an internal method for evaluating the impacts of NEEI curriculum on e-commerce skill adoption and whether or not e-commerce strategies are being implemented into organizational goals. The evaluation of workshops offered by funded Extension personnel not only assist the NEEI in the ongoing identification of best e-commerce training and technology education practices, but also allow for needed specific curriculum updates and changes that further streamline Extension's adoption of these educational tools.

Since its inception in 2009, the mini-grants program has been responsible for funding ten multiple workshop efforts in various states throughout the Cooperative Extension System. Table 2 shows the adoption of the NEEI's e-Commerce curriculum across the U.S. as well as such community characteristics as average county population, unemployment and poverty rates. *A Beginner's Guide to e-Commerce* has been taught in Alabama. While *Helping Artisans Reach Global Markets* was showcased in seven counties in Tennessee. But the largest adopted NEEI curriculum for mini grant workshops has been *Strengthening Competitive Advantage of Rural Businesses with e-Commerce and Experience Economy Strategies* that has been taught to 182 entrepreneurs in rural communities in Oklahoma, Michigan, and Missouri.

The NEEI also coordinated an introductory Webinar to showcase the *Connecting Rural Communities* curriculum to an audience of Extension Professionals. Mini-grant Workshops are also currently scheduled for Kentucky, Mississippi, and Idaho. Idaho will be the first to offer e-commerce workshops for Hispanics.

Connecting to ARRA

As part of the American Recovery and Reinvestment Act (ARRA) of 2009, the National Telecommunications and Information Administration (NTIA), the U.S. Department of Agriculture and the Department of Commerce efforts have allocated \$11.9 billion for broadband deployment and education. The purpose is to expand the availability of broadband access to those areas without hard-line based services. Incorporating educational offerings that follow this type of infrastructure expansion is viewed as a necessary component to increase the individual rural broadband adoption rates (LaRose et al., 2010). Under the direction of SRDC, the NEEI gained exposure as a resource for Extension based e-commerce and technological educational efforts in areas slated for broadband infrastructure expansion. Extension administrators applying for Broadband Technology Opportunities Program (BTOP) funding opportunities are being awarded based in part on the utilization of NEEI learning resources. Approved funding proposals further solidify the understanding that, as a result of remaining focused on the engagement of the Extension community, the National e-Commerce Extension Initiative has built a coalition of Extension Professionals who will occupy essential roles within national broadband adoption planning.

To date, there are three specific examples of how the educational resources developed by the NEEI educational resource grants program have proven to be instrumental in securing major BTOP funding. First, the SRDC and Mississippi State University Extension Service (MSUES) captured \$2.4 million in funding to advance digital literacy in identified areas where high speed hard-line infrastructure will be developed within Mississippi. This will be done by fusing the educational materials of both the MSUES Department of Agricultural Communication and the NEEI in an effort to ensure all learning needs with regards to technology education are addressed. MSUES was a natural choice for advancing digital literacy programs since it had a strong and trusted community presence in those areas identified for broadband development within Mississippi.

Secondly, the University of Wisconsin Extension Service was also awarded a \$2.4 million dollar grant to support education and outreach in an identified four community area and in the Menominee Indian Nation. Wisconsin Extension educators will be using several of the NEEI's online materials to support their "Sustainable Broadband Adoption Project." Professor Andy Lewis, project director of Extension's broadband effort in Wisconsin, recently cited several reasons why Wisconsin opted to base some of their educational efforts on the e-commerce learning resources offered. The two main points of his acknowledgment were that NEEI based resources are developed by some of the most knowledgeable people in the land-grant University system and that all educational materials have been peer reviewed by key Extension faculty.

Lastly, the LSU Agricultural Center's Delta Rural Development Center (DRDC) located in rural northeast Louisiana in Oak Grove will implement the *Connecting Rural Communities* curriculum from 2011-2015 as part of a rural broadband educational effort through the Louisiana Delta Initiative (Barnes, 2010). DRDC received a broadband awareness education grant from the Department of Information Technology within the Louisiana Division of Administration (LDA) to work in sixteen, high-poverty parishes. Several other states have also chosen to implement the NEEI curricula into their broadband educational outreach plans, including Pennsylvania, Minnesota, Nebraska, South Carolina, Oklahoma, and Tennessee.

Leadership Matters

From the onset, the key to success for the National e-Commerce Extension Initiative has been an active and available advisory board. Put in place in 2004, the advisory board is composed of Extension specialists representing all four regions of the country. Their role is determining the training needs of Extension associates that would best streamline the addition of technological and e-commerce education to current program offerings. This is done by the advisory board identifying research topic areas that can be developed into Extension learning curriculum which would be well received and easily facilitated by Extension educators. Therefore, the advisory board oversees the development of identified topics through an educational resource grant program. To this end, each advisory board member is called upon to review and make funding recommendations for all grant applications received both from the educational resource and mini-grant workshop applicants. Advisory board members are also highly effective in program promotion through various presentations and networking efforts.

Connecting to Rural America

Research to date has found that significant economic development benefits can accrue to communities when broadband infrastructure is improved. Katz and Suter (2009) found that employment increased in communities where broadband investments were made. Gillett, Lehr and Sibb (2006) found this same result in rural communities. But the challenge for educational initiatives is to provide enough public awareness about rural broadband benefits to encourage rural adoption. LaRose et al. (2010) provide some of the best evidence that educational initiatives, similar to the NEEI, do make a difference in how people understand the benefits of broadband in rural communities. Case study research results indicated that improved access to broadband infrastructure certainly can enhance the perceived benefits of broadband in rural communities and encourage rural adoption. More to the point, this research also suggests that educational initiatives that complement broadband infrastructure projects in the same area can have a greater impact on increased rural adoption. This is good news for the NEEI, and rural America.

For More Information

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