

Purpose

Farmers' markets can accept food stamp Electronic Benefit Transfer (EBT) benefits only through a manual process because electric power and land-line telephone access is not available. Manual EBT is slow and entails some risk of loss for the farmer. The purpose of this study was to explore whether there are feasible technologies to enable farmers' markets (and other food retailers who lack telephone lines and/or electricity) to participate electronically. This report inventories technological approaches to portable on-line authorization and reports on their technical and cost feasibility, advantages/disadvantages and potential impacts. Data collection included a comprehensive literature search and interviews with both EBT stakeholders and experts in telecommunications, electronic funds transfer, and transaction automation technologies. While this report concentrates on one area of technological solutions, non-technological fixes or other technologies may be more appropriate for individual States and local markets. It is hoped that the information in the report can provide a useful basis for the continuing dialog with USDA's partners.

Findings

A number of wireless technologies make EBT equipage in farmers' markets and mobile retailers technically feasible. These include:

Cellular Telephone Technology offers the best balance between cost and coverage in urban areas, but it lacks coverage in rural areas.

Cellular Digital Packet Data, a new type of digital transmission using the existing analog cellular network, offers low cost high-speed service for data transmission built on a common standard, e.g., PCMCIA. Although coverage is

still sparse and it is somewhat difficult to configure, the number of vendors supporting this medium is growing.

Circuit Switched-Cellular Data creates a dedicated connection or circuit over the analog cellular network. It is good for on-line data, is easy to use and has nationwide coverage in urban areas. However, the call is billed by the duration of the call and not the amount of information transmitted, which makes it potentially expensive.

Analog Cellular Radio employs variable and continuous waveforms to represent information values and is widely available at a reasonable cost in urban areas, but it has inferior voice quality.

Specialized Mobile Radio technology digitizes the radio frequency (RF) used for dispatching trucks and taxis. While it may not be the least expensive option it is the most mature of the wireless mediums and the most reliable.

Fixed Satellite Technology uses geostationary satellites (approximately 22,300 miles above the equator) which use spot beams that cover North America. They offer a broad range of services and the broadest land mass coverage, but are also one of the most costly options.

Mobile Satellite Technology uses satellites which orbit between 300 to 6,000 miles above the earth. Unlike Fixed Satellites, all processing & maintenance takes place in earth stations and the lower orbiting satellites are capable of being picked-up by low-power mobile hand-held equipment. These satellites also offer a broad range of services but are not yet fully deployed and are one of the most costly options.

A single national technological solution does not exist for two reasons: 1) there is no single common carrier available nationwide; and 2)

significant differences in how farmers' markets are organized and situated make a best solution for one market infeasible for another.

A wireless EBT model based upon a variety of carriers and POS equipment is recommended because it will provide solutions with maximum utility and optimized cost. The solutions should be based upon a modular approach using standard equipment as much as possible, plus add on equipment as necessary, to provide connectivity to all geographic locations. The solutions should also utilize a common standard interface [PCMCIA] to access whatever is the lowest cost and most reliable local service available, whether that is based on cellular, specialized mobile radio or satellite technology.

Policymakers and planners should expect that solutions for wireless EBT will undoubtedly vary by the organizational structure (sole proprietor, cooperatives and state run) under which farmers' markets and mobile food retailers operate.

The cost to outfit a farmer or mobile food retailer with a wireless EBT unit is about 2-3 times higher than the cost to outfit a traditional EBT retailer (e.g. \$1,000-1,200 vs. \$400 per retailer). At the same time, while the cost per retailer is high, this segment of the retailer population accounts for less than one percent of the total number of authorized Food Stamp Program retailers.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, political beliefs, genetic information, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.)

Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write: USDA, Director, Office of Adjudication, 1400 Independence Avenue, SW, Washington, DC 20250-9410; or call (866) 632-9992 (Toll-free Customer Service), (800) 877-8339 (Local or Federal relay), or (866) 377-8642 (Relay voice users) or (800) 845-6136 (Spanish Federal-relay). USDA is an equal opportunity provider and employer.