



Technology for the Delivery of Farmers Market Incentive Programs

Market Research on the behalf of The Ecology Center

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Introduction

Farmers market incentive programs are gaining traction as a technique to increase federal nutrition assistance benefit recipients' access to fresh fruits and vegetables. Through these programs, farmers market shoppers that spend federal benefits such as SNAP (Supplemental Nutrition Assistance Program) at farmers markets have their benefits matched up to a predetermined cap, typically ten or twenty dollars. For example, if a SNAP recipient spends ten dollars of SNAP, they will receive an additional ten dollars in matching funds that can be redeemed for fruits and vegetables at the farmers market. These programs aim to improve access to fresh fruits and vegetables for SNAP recipients and to support local farmers. With the USDA's Food Insecurity Nutrition Incentive (FINI) program now in its second round of grant applications, programs connecting SNAP and other federal food assistance program recipients to farmers markets are growing nationally.

As these programs grow, the delivery method of incentives is becoming increasingly important, as it impacts program administration costs and customers' experience using these incentive programs greatly. Currently, many farmers markets use physical scrip, typically wooden or plastic tokens, to allow customers to shop at markets with federal nutrition assistance benefits and to distribute matching funds.

Code for America partnered with the Ecology Center, which runs the Market Match incentive program offered at over 230 sites, including 180 farmers' markets, in California, to research alternatives to physical scrip to improve customer experience and decrease administrative costs.

Current Practices

When a shopper comes to a participating farmers market planning to use federal nutrition assistance benefits, he or she will first go to the market information booth, where markets have the appropriate point of sale device to accept SNAP benefits. Customers may need to wait in line here, depending on the volume of shoppers. To use SNAP, the shopper tells the market employee or volunteer how much they would like to spend. They then swipe their EBT (Electronic Benefit Transfer) card, enter their PIN, and are given physical scrip, typically wooden or plastic tokens, which they can redeem for eligible food at booths at the market.

If the market offers a matching program, a customer will also be given matching funds in accordance with the fund cap and the amount of benefits they choose to spend at the market. These funds are typically distributed as distinct scrip from that used for SNAP and other benefits, e.g. different colored tokens. Matching scrip can also be redeemed at market booths, but often has tighter restrictions and can only be spent on fruits and vegetables, not prepared food items such as bakery goods, like SNAP can be.

After tokens are redeemed at market booths with farmers by shoppers for food items, the customer experience is complete. Farmers are the next users of the scrip. They count and redeem the scrip they receive with market employees at the end of each market day. The market will either give farmers cash or a check on the spot, or mail a reimbursement to them later for the value of the scrip, both for federal benefits and matching funds. The market is reimbursed for the federal nutrition benefits via their bank account which is programmed into the POS device. Matching funds typically come from grants and donations. Markets may manage these funds individually, or receive them from a larger umbrella organization, such as the Market Match program run by the Ecology

Center. The accounting for both federal benefits and matching funds has to be done carefully to keep detailed records for grant reporting and to meet procedures for redeeming federal benefits.

Friction Points in Current Practice

Farmers have the lowest burden level in the current system. Conversations with various market incentive program administrators revealed a strong preference for maintaining this low burden on farmers. Nevertheless, there are three notable friction points for farmers. Firstly, they are required to learn how to redeem the scrip. Benefit scrip and matching scrip, as well as federal benefits redeemed directly with farmers, such as WIC (Women, Infants, and Children), are eligible for different categories of products. Many markets have a third type of scrip for shoppers using credit cards, which adds to the complexity of the system. Credit card scrip is redeemable just like cash. It can be spent on anything and farmers can give cash change to customers using it. SNAP benefit scrip can be spent on any food product, but change cannot be given for it because converting federal nutrition assistance benefits to cash is against program regulations. Matching scrip can usually only be redeemed for fruits and vegetables and cash change cannot be given for the scrip. Navigating this system requires savvy vendors. Training for farmers involves the time of both farmers and market staff. Lastly, farmers are also burdened by the redemption of scrip with the market. It adds a task to their market day to count out tokens with market staff and payments for scrip from the market to the farmer may be delayed.

Market staff, typically a part time market manager and a few volunteers, face challenges created by the physical scrip as well. They need to count scrip with the farmers and do the bookkeeping associated with the scrip system. This accounting needs to be detailed for grant reporting purposes and timely so that farmers are not left waiting for their reimbursements.

Customers experience major drawbacks in their customer experience because of the physical scrip. Firstly, because cash change cannot be given for tokens and tokens typically do not come in values less than one dollar, shoppers have to purchase round amounts of products, which may be more or less than they actually want to buy. For example, if tokens come in one dollar increments, a shopper cannot make a fifty cent purchase and receive fifty cents in change. They must either purchase no product or a dollar's worth. This inflexibility is inconvenient for both shoppers and farmers, especially because many items at farmers markets are priced by the pound, leading to uneven prices.

Another disadvantage of physical scrip is the bottleneck of the market booth. Shoppers may need to wait in line here, which is both inconvenient and stigmatizing. Additionally, they need to decide exactly how much they wish to spend before actually beginning their shopping. Often left over tokens can be redeemed on a different market day, but this ties up a shoppers benefits and requires that they make it to the next market, which is often only offered in one location for a short number of specified hours, typically once or twice a week. Another inconvenience for shoppers that could easily be overlooked is the physical size of tokens. Carrying five or six poker chip sized tokens is not a problem, but to do more significant grocery shopping, what these programs are hoping to encourage, shoppers may want to carry twenty or thirty tokens. This becomes awkward quickly, especially trying to keep matching tokens and SNAP tokens separate because of their different redemption restrictions. Lastly, using scrip for benefit purchases reverses the anti-stigmatization progress made by the switch to EBT cards from paper food stamps, as SNAP recipients once again have to use scrip notably different from cash and credit cards that other shoppers use to make their food purchases. This is somewhat ameliorated by markets that also use scrip for credit card purchases, but it nevertheless appears to be a regression.

In summary, physical scrip imposes inconvenience on farmers by requiring them to learn a complex system, necessitating physical token counting each market day, and in some cases delaying payment for goods sold. Market staff also have the burden of physically counting scrip and the burden of tedious manual record keeping needed to run a physical scrip based system. Customers are perhaps the most impacted by physical scrip systems. They face the inconvenience created by the market booth bottle neck, the necessity to predetermine their purchase amount, the complications of spending in round amounts, and the inconvenience of carrying physical tokens. They also face potential stigmatization by waiting in line for their tokens and using scrip distinct from shoppers not redeeming benefits.

Shoppers, farmers, and markets do all enjoy benefits from these programs. Firstly, scrip systems allow SNAP recipients to use their benefits at farmers markets, a capability that was temporarily lost when SNAP first transitioned to using EBT cards instead of paper vouchers. Matching programs encourage SNAP use at markets and enable shoppers to purchase more produce at markets, which translates to more business for farmers and markets. These advantages come from the core function of matching programs: providing additional funds to SNAP shoppers to use at farmers markets. The drawbacks discussed here, however, originate not from this core function, but rather from the administrative processes currently used to operate these programs. Therefore, to ameliorate the friction points discussed above, these programs can focus on improving their methods for administering matching programs. Implementing technological solutions is one way programs might do this.

Upgrading Matching Programs with Technology

Replacing physical scrip with an electronic system could ease many of the frictions that physical scrip is causing. Market incentive programs across the US have recognized this and are trying various approaches to improve their incentive programs. Below are some of the solutions that others are researching or have implemented.

Existing Technology

FM Tracks is a website and iOS application for market managers to keep electronic records of transactions and gather information about market shoppers. It is being developed by Case Western Reserve University and Wholesome Wave. More information, including screenshots, can be found [here](#).

Platform: iOS application and website

Development Stage: Currently in beta testing. Scheduled to be made publicly available in 2016.

Purpose & Features: FM tracks is a tool designed for market managers to track their markets sales, including federal nutrition benefit redemption and market incentive programs. It serves primarily as a record keeping tool and does not facilitate transactions. It is intended to be used only by market managers, not individual vendors.

Cost: FM tracks is listed as a free application, available in the Apple App store. The primary cost of adoption would come in acquiring technology for all market managers and the time necessary to adapt to the new system.

Review: Because FM Tracks doesn't facilitate transactions, it does not eliminate scrip. This means scrip's negative impacts on customer experience and farmers are not ameliorated. FM Tracks does ease the burden of accounting for market staff by facilitating their book keeping. It also has the

significant advantage of making data reporting across different markets uniform, which could be advantageous to aggregate reporting to inform grants and policy change.

Mobile Market + (MM+) is a iOS application that processes credit, debit, and SNAP EBT transactions and additionally offers tracking and reporting features in an accompanying website. It was developed by Novo Dia Group and is currently available through MarketLink or in places where Xerox offers Direct Connect service. More information on the application can be found on the Novo Dia Group Website.

Platform: iOS application and website

Development Stage: Live, available on the Apple App store, but requires contract with a third party processor (currently Worldpay through the MarketLink program or Xerox through a direct connect option in a few select states).

Purpose & Features: MM+ is designed to complete credit, debit and SNAP EBT transactions at farmers markets and other small vendors. The application is used with a Daily Systems iAPS device that includes a card reader and receipt printer. This application can either be used at the market information booth as the point of sale device, or each vendor can be equipped with his or her own device. It has a loyalty feature that can be used to deliver matching funds. Through this loyalty function, customers create unique ten-digit IDs and are credited incentive funds. The unique IDs created for this enables markets to track customer SNAP EBT transactions. Multiple reporting features are included. In the mobile application basic totals reports are available. Through the online portal, States and MM+ account holders can access additional information. It's worth noting that the loyalty function is only being utilized in as part of Fair Food Network's (FFN) Double Up Food Bucks SNAP incentive program in Kent County and required approximately 400 terminals for farmers, which were provided at no cost to the farmers.

Cost: The financial cost of MM+ isn't clear. Relevant costs include those of iPhones or iPod Touches and the Daily Systems iAPS point of sale devices (listed online for between \$400-500 each), equipment replacement costs because protective covers do not fit devices, ongoing data service costs and annual \$100 licensing fee for each device, for large markets require a full time person dedicated to trouble-shooting the system during market hours and translating NDG sales spreadsheets to accounting systems, and lastly the fees associated with the third party processor. Pricing for this isn't readily available.

Review: Currently the MM+ loyalty function cannot be used in markets using the central Point of Sale model, so it offers little value to markets operating such a system.

If each vendor is equipped with a device, then market employees are aided with their tracking and are also relieved of the duty of counting tokens, as are farmers. But it can take time to realize this benefit. In one large market that switched to this system it required a three year adjustment period in which the market used both MM+ AND scrip, and there is now a new full time staff person during market hours.

Some burden is lifted from customers with the removal of physical scrip. Customers are relieved of carrying scrip, the stigma attached to it, and shoppers would also no longer need to predetermine their spending for the market day. But new burdens have emerged because each transaction takes longer. This may be minimized as more farmers process credit card sales on their own Square

devices. There is also a psychological change as the loss of the physical reminder (token) of a customer's benefits, which can result in both SNAP and incentive dollars going unused.

Some burden is added to farmers because each transaction takes longer than a token exchange, they need to invest time in learning the technology and managing the app. There have also been problems with the Automated Clearing House (ACH) transfer reports from the third party processor not matching the app reports.

Seventeen (3 MarketLink and 14 Xerox) markets participating in Fair Food Network's (FFN) Double Up Food Bucks SNAP incentive program use this system and provide mixed feedback on the application. While it has all the basic functionality to be successful, they noted the serious drawbacks of the cost of the technology, either to farmers or to the market, if they choose to supply devices. Both iOS devices and the Daily Systems iAPS card reader and printer device must be provided. Additionally, FFN reports that the loyalty feature doesn't function smoothly and updates are slow coming. Another drawback is that customers can only check their SNAP and loyalty spending with the farmers and loyalty balances cannot be checked away from the market. Lastly, the application mandates that a specific third party processor is used and the fee structure associated with this is a barrier to markets.

E-token systems replicate the physical scrip system through a web portal. This system doesn't perform any transactions, just as exchanging scrip at a market doesn't actually transfer funds, but instead does the accounting for a later transfer of funds. Vendors record purchases on any WiFi enabled device and market managers review the transactions after a market day and reimburse vendors accordingly. Mass Farmers Markets (a farmers market association) has implemented this system.

Platform: Website

Development Stage: Live, but not currently built for adoption beyond Mass Farmers Markets.

Purpose & Functionality: The E-token system Mass Farmers Markets is using is a digital replica of the current scrip system. Each vendor uses any Wi-Fi and browser enabled device to connect to intranet set up by the market. They then use the e-token website to document benefit and incentive transactions. In this system, customers still go to the central market booth and decide how much of their benefits to redeem. Instead of getting tokens, they are given a unique identifier composed of some digits of their card number and personal information, like their initials or birth date. This ID is then credited in both benefits and matching funds through the website. At farmers' booths shoppers present their newly created ID and the farmer documents the purchase through their device. At the end of the market day, a market employee checks that all transactions balance, and then reimburses vendors accordingly, just as they would in a physical scrip system.

Cost: Mass Farmers Markets indicated that they are willing to share the design and details of their system free of charge, but any market group adopting it would need to set up their own website and infrastructure, as the current system isn't built for new groups to adopt directly. The primary costs would come in the time necessary to build this site, equipping markets with intranet equipment, providing WiFi enabled devices to any vendors without them (if the market chose to do so), and training to use the new system.

Review: Replicating the current token system minimizes changes in practice. A record keeping system that doesn't transfer funds still allows for a check of purchases by the market manager to catch any mistakes. This is a burden to market employees, but it ensures accuracy in charges which is critical for customers shopping with benefits and for reporting on incentive programs for grants.

This program adds some burden to farmers in that they must learn a new system and have an appropriate device. The latter will become less and less of a burden as smartphones and tablets continue to become more commonplace. The largest positive of this system is that physical scrip is not required. This saves the market money purchasing it, removes the awkward problem of carrying too many tokens, allows for purchases in uneven amounts, and addresses the stigmatizing aspect of using scrip. It also removes the need for market employees and farmers to count scrip at the end of each market day. This approach doesn't, however, eliminate the central market booth bottleneck, as customers still must begin their shopping there. It also still leaves a significant burden on market employees. Overall, this e-token system certainly eases the burdens caused by physical scrip, but it is only a partial solution.

Conclusion & Next Steps

None of the technologies reviewed above relieve all the friction points in market incentive programs. Each system offers a different set of benefits and drawbacks. One major divide is between systems that transfer funds and those that do not. Systems that do not transfer funds allow for greater market manager oversight, but they do lock markets into the central market booth model. The relative value of this tradeoff might be assessed based upon evaluation results of the current program and how significant the burden of the central market booth bottleneck is for shoppers. Similarly, the value of developing a system that eliminates physical scrip might be assessed through evaluation results documenting shoppers' thoughts on this aspect of the program. The results of the program evaluation that USC is conducting can hopefully identify which friction points are most important to relieve, informing what tools to consider most seriously.

Another set of information that needs to be further investigated is cost. An evaluation of the current costs in both time and resources of using the physical scrip incentive program could serve as a baseline comparison for the costs of adopting and using a new system. If any of these tools are of interest to the Ecology Center, a detailed cost evaluation should be made in collaboration with the vendor/provider of the product and comparison to costs of the current system made.

Overall, none of these tools appear to be a comprehensive solution and notably, FM Tracks and the e-token system fail to address the central market booth bottle neck, which seems to be a major negative aspect of user experience. MM+ does address this, but is by far the most costly program.

Ideally, a tool would be developed that could address the friction points in market manager, farmer, *and* customer experiences. Now that existing technology designed for farmers markets has been explored, the next step in this research should be to explore existing technology that hasn't yet been adapted for farmers markets. For example, Square, Inc. has developed technology that makes accepting credit cards on mobile devices easy. Another area to investigate may be conventional loyalty apps that are built to allow businesses to send coupons and vouchers to their customers while tracking their customers' redemption. EatSF is currently looking into adapting existing coupon apps for their program and may be a group to collaborate with in the future on this.

Finally, it likely makes sense to adopt technology in phases, perhaps starting with something more basic like FM tracks that is designed just for tracking and later adding a transaction feature and further automation. An end goal of transferring incentive programs to complete technological administration and operation should be kept in mind as technology is adopted. The USC evaluation and an appraisal of costs of different aspects of current administration can inform what pieces are automated first, in order to start with new practices that add the most value.