



Feasibility Assessment for an e-Commerce Cooperative to Market Hawaii's Agricultural Products

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Agriculture in Hawaii has changed over the past few decades. In the place of large-scale production of two main crops, sugarcane and pineapple, by a few large companies, we now have many smaller operations producing a wide variety of crops. Today's farmers often cater to small niche markets, but they may be competing in a large international market. Hawaii's remote location presents challenges for its producers who are attempting to deliver high-quality products to distant locations. The Internet, as a means to engage in e-commerce, can assist Hawaii producers in their efforts to connect with buyers around the world.

Some of Hawaii's agricultural producers have Web sites that allow consumers from anywhere in the world to learn about their products and place an order. To successfully compete with the multitude of suppliers marketing products on the Web is technically complex and often costly. Consumers expect professional Web site design and layout, multimedia presentations, educational information, price lists with detailed delivery options, order confirmation, and, most important, transaction security. A site capable of delivering content from a variety of sources, including databases, video and audio feeds, and downloadable documents, can provide some of the new technologies that make selling on the Web more effective. However, these same technologies also make it more expensive for individual entrepreneurs to create and maintain their own Web sites. Many sellers will need a professional Web developer if their e-commerce business is to be a success. Small firms may find the costs of providing all the Web services expected by consumers prohibitive, and therefore they may not be

able to take full advantage of the Web for marketing their products. In addition, the volume for an individual business may not be large enough to support the costs associated with this type of direct marketing.

Many of Hawaii's agricultural products complement each other and could be marketed together on the same site. Farm produce, including nursery plants, flowers, herbs, spices, specialty crops, and value-added products, including meat, macadamia nut candies, and Kona coffee, could be sold on the same e-commerce "shelves." Other efforts by private firms, nonprofit organizations, and government agencies to market Hawaii agricultural products as a group have been or are now being undertaken. An e-commerce cooperative or other similar group-marketing arrangement may provide the needed leverage for small companies to be competitive and successful.

This publication presents results of a survey done to determine if members of Hawaii's agricultural community would be interested in forming an e-commerce cooperative. We also estimate some of the start-up costs for examples of two such efforts. Finally, we describe related follow-up activities undertaken by the University of Hawaii to increase the competitiveness of Hawaii agricultural products.

Survey method

A questionnaire was designed to obtain information about producers' desire to join an e-commerce cooperative. A database was developed that included all agricultural producers and processors in the state using contact information collected from the telephone book and

the Web. A randomly drawn sample was contacted by telephone to determine if they were interested in participating in the survey.

Out of the 350 agribusiness managers contacted, 147 agreed to participate in the survey. The questionnaire was initially mailed to a few participants in order to test the survey. These participants were interviewed either over the telephone or in person. After the initial testing phase, the remaining participants were interviewed either over the telephone or in person. The survey period was from April to December 2004. Survey questions covered types of crops or products produced, method used for direct marketing, crops sold through e-commerce, interest in becoming member of a cooperative, need for technical assistance, willingness to attend workshops in Web site development, willingness to invest in the cooperative, willingness to pay fees for using the service, and willingness to serve on the cooperative board.

Survey results

Almost half (46 percent) of the survey participants indicated that they would be interested in joining an e-commerce cooperative. Regardless of their intention to join an e-commerce cooperative or not, 33 percent of the respondents surveyed wanted to receive technical assistance, and 36 percent were willing to attend workshops on e-commerce (see Tables 1 and 2).

Table 1. Interest in joining an e-commerce cooperative.

	Number	Percentage
Yes	67	46
No	68	46
Maybe	12	8

Table 2. Need technical assistance.

	Number	Percentage
Yes	48	33
No	32	22
Do not know	5	3
No response	62	42

The majority (59 percent) of the businesses surveyed did not use e-commerce at the time. The products most likely to be sold on the Web by the respondents were flowers and potted plants (15 percent) and coffee (12 percent). Given the large number of non-users, e-commerce ap-

pears to have potential for expanding sales for this group. In forming an e-commerce cooperative, one should target producers of these products to join (Table 3).

Table 3. Products currently sold using e-commerce.

	Number	Percentage
Coffee	8	12
Tropical cut flowers	10	15
Potted orchids	3	4
Potted plants	10	15
Mac nuts	3	4
Do not use	33	59
Total*	67	100

*Only those responding "yes" to interest in a cooperative (Table 1) were included.

Of those willing to participate in an e-commerce cooperative, 19 percent were willing to invest in the operation (Table 4), while 39 percent were willing to pay a fee for using the cooperative's services (Table 5). A third of those willing to participate in the cooperative were also willing to serve on its board (Table 6).

Table 4. Willing to invest in a cooperative.

	Number	Percentage
Yes	13	19
No	23	35
Maybe	31	46
Total*	67	100

*Only those responding "yes" to interest in a cooperative (Table 1) were included.

Table 5. Willing to pay a fee for a cooperative's service.

	Number	Percentage
Yes	57	39
No	6	4
Maybe	15	10
No response	69	47
Total	147	100

Table 6. Willing to serve on the cooperative board.

	Number	Percentage
Yes	22	33
No	22	33
Maybe	16	24
No response	7	10
Total*	67	100

*Only those responding "yes" to interest in a cooperative (Table 1) were included.

In summary, the survey results indicated that almost half of the survey respondents are interested in joining an e-commerce cooperative. In addition, respondents expressed an interest in supporting the cooperative in terms of financial investment, patronage, and management support.

e-Commerce cooperative start-up costs

Given the interest of producers, the cooperative was investigated further. It could take a variety of forms, and two of the most likely alternatives are described here. This information is useful for the discussions that must take place among producers in making decisions about group marketing.

Alternative 1: Web site

An e-commerce portal (Web gateway page), tailored for Hawaii's agribusinesses, could be developed to deploy and manage multiple growers' Web sites. It would have the capability needed to quickly and cost-effectively integrate and manage other growers' portals and sites. The portal would serve as a directory, with a list of categories such as cut flowers, macadamia nuts, coffee, etc. Participants could be listed by product and in alphabetical order by name, with a link to their individual Web sites. Linking separate systems together is the key to developing an environment that fully supports business processes.

The site master would also be the manager of cooperative. A contract hire would allow the manager be responsible for their own workspace. The total annual cost of this alternative is estimated to be \$95,000.

Table 7. Annual cost of a Web site (alternative 1).

Operational cost	Cost (\$)
Office equipment	5,000
Web site master/manager	65,000
Advertising and promotion	20,000
Utilities, phone, Internet	5,000
Total cost	95,000

*Includes fringe benefits.

The advantage of this alternative is that it does not require constant interaction with growers. It requires that the e-commerce cooperative maintain a database and a Web site. Growers will be encouraged to develop their sites and individual databases. However, the coopera-

tive will have less control of other marketing variables such as price, quality, consistency, reliability, delivery, and services.

Alternative 2: Clearinghouse

This alternative assumes that the cooperative acts as a clearinghouse, which is owned by the members and has one brand name. This alternative will require development and maintenance of more complicated databases and constant interaction with the growers' Web sites.

This plan employs one individual to be both webmaster and cooperative manager; this person may contract out technical aspects of Web site development. A secretary is needed to operate the office. Each company will be responsible for delivering its product to the cooperative in packaging that bears the cooperative's logo. The cooperative will fill the orders using packing material with the cooperative's logo. The product's source for each order will need to be identified by the cooperative.

A system that allows traceability will be needed to track orders from their point of origin. A commercial building is needed with around 1200 square feet to house the management and staff and provide storage facilities with refrigeration. The total annual cost of the clearinghouse alternative is \$135,000.

Table 8. Annual cost of a clearinghouse (alternative 2).

Operational cost	Total cost (\$)
Building and equipment	
Leased space (1200 square feet)	12,000
Office equipment	5,000
Advertising and promotion	20,000
Personnel	
Web master/coop manager*	65,000
Secretary*	28,000
Utilities, phone, Internet	5,000
Total cost	135,000

*Includes fringe benefits.

Short-term interest rate of 10% was used to estimate interest cost.

The advantage of this alternative is that the cooperative will control the marketing variables such as prices, quality, consistency, reliability, delivery, and services, as opposed to leaving these in the hands of individual businesses. The cooperative will also have better coordination of the supply and demand for the products and develop brand recognition, which will increase the profitability of the business and the survival of the co-

operative. However, a more detailed database and constant interaction with growers to obtain product availability information is required. Growers will require training so that they can keep inventory databases.

Follow-up action

Various e-commerce sites were examined, and the attributes of those that worked well were noted. A site map was developed and photographs and graphics were identified. A Web site was created and now being tested at www.hawaiianagriculturalproducts.com.

Work is now under way to educate producers about cooperatives and to provide assistance with organizational development. The new Web site is being demonstrated by UH faculty so that producers can better understand the concept and include a link to their site, if they have one. This work represents the implementation of alternative 1 above. The site will be revised based on input from meetings with producers being held across the state, and the annual cost of these activities will then become the responsibility of the cooperative.

Summary

We have summarized work done to explore the potential of establishing an e-commerce cooperative for Hawaii agriculture products. A survey of potential users was conducted and the results revealed that the respondents are interested in starting such a cooperative in Hawaii. Two alternative organizational structures for a cooperative were described. Efforts are now under way to educate producers about the concept of an e-commerce cooperative and to facilitate efforts to organize producers into a cohesive group. A Web site has been developed to further test the concept, which is the first step needed to develop an e-commerce cooperative. Further work will be needed to develop a more detailed business plan, after producers have committed to involvement in an e-commerce cooperative.

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