

## **Agriculture on the Web: Current Situation and Prospects for Web-based Commerce and Services**

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A few years ago prognosticators envisioned a world in which the internet would take over and commerce would flow at the speed of light. This transformation would yield increased efficiencies and the withering of “brick and mortar” businesses. Massive investments were poured into web-based business including e-commerce for agriculture. Oddly, it seemed at the time that the less a start-up could demonstrate a plan for profit the more capital would be available. The web is still with us, of course, and AgMRC (a web-based virtual center) is an example of that. But the heady days of the late 1990s are over and the dot-com bubble has burst. Many agricultural e-commerce sites have vanished, and e-commerce has developed only slowly, surprising many of its advocates. Surprises are opportunities for learning. Now is an opportune time to review the current situation of agriculture on the web and what we can learn from the recent history.

### **Commercial farmers are computer active and web ready**

According to the most recent data (NASS 2005), 58 percent of U.S. farms have computer access and about half of all farms have internet access. As expected computer and internet access are higher on larger farms: For farms in the U.S. with annual revenue of more than \$ 250,000, 79 percent have access to a computer and 72 percent can connect to the internet. Empirical studies have identified several commonsense factors, in addition to farm size, that significantly affect internet adoption by farmers. Younger and better-educated farmers are more likely to adopt the internet. Also, farmers who draw up farm plans and who emphasize management over physical labor activities are more likely to be internet users.

However, farmers are still shy e-commerce users. About 9 percent of farms reported purchasing agricultural inputs over the internet in the 2005 survey (up from 8 percent in 2003) and 9 percent conduct agricultural marketing activities over the internet. Again, purchasing and marketing on the internet is more frequently found on larger farms. About 18 percent of farms with annual revenue of more than \$ 250,000 use the internet for purchasing inputs and 23 percent use it for marketing activities.

Agriculture is information intensive and USDA is a large supplier of reports, but relatively few farms (11 percent) use the internet to access USDA reports over the internet. Again, accessing of USDA reports is more likely on larger farms: 28 percent of farms in the bracket above \$ 250,000 of annual revenues download USDA reports.

### **Options for revenue from agricultural information on the web**

Selling agricultural goods on the web is a challenge that involves distribution of physical products. Selling information solves that problem because information products themselves can be distributed over the internet. The web is a versatile medium that also allows information suppliers to enhance the value of their products for information users. Recouping costs is, however, a challenge on the web.

The two basic options for generating revenues online are online sales of information and sales of advertising. We inspected 81 web sites that provide agricultural information for their capacity to generate revenue. The web sites were operated by agricultural extension and outreach organization (21 sites), agricultural portals (15 sites),

farm magazines (10 sites), farm machinery and input suppliers (12 sites), agricultural market advisory services (12 sites), and other agricultural organizations (11 sites). These were major sites chosen because they had the largest number of visitors in their category.

Overall, relatively few agricultural web sites are designed to generate revenue from selling information. Only 19 percent of the web sites offered priced contents and 36 percent were equipped to sell information products, such as magazines or printed reports. Between categories, however, about 83 percent of web sites of market advisory service firms offer priced content but only 5 percent of the extension and outreach web sites offer priced content, even though 48 percent of extension and outreach web sites support online sales of their printed information products.

About one third of the 81 agricultural information web sites carried advertisements. Again, there are significant differences between web site categories: No extension and outreach web site and no web site by a farm machinery and input supplier contained third-party advertisements, but all web sites of farm magazines carried advertisements.

We have no data on revenue from advertisements. However, given the small number of visitors and the low click-through rates, revenues from advertisements are likely to be small and may be outweighed by their costs in terms of user distraction and user annoyance.

#### **Agricultural Marketplaces: A Tough business, but some survive**

Web-based marketing in agriculture began when six agribusiness market places went online in 1996. Clasen (2005) studied 233 agribusiness market places that were on the web from 2000 through 2003. The number of active market places peaked in March 2001, when 208 marketplaces were actively trading. After that a few entered and many left. At the beginning of the year 2003, only 113 market places had been maintained during the previous twelve months and the rest were inactive. By July 2003, there were 177 agricultural market places on the web. Overall, the differences in business activity at the markets were huge: a very small number of markets had many visitors whereas most had few, and about one third of the markets showed no signs of activity.

A web market must allow sellers to post offers and buyers to post their bids. The market must allow sellers to describe their products and allow buyers to assess the descriptions. For this purpose 91 percent of all market places featured a product catalogue at their web site. The web market must also specify how communication is conducted between buyers and sellers. One third of the web markets used auctions. Few markets assisted traders in making and assuring payment (17 percent), and even fewer provided product guarantees (11 percent) or reputation information (6 percent) on buyers or sellers.

Three points summarize what we garnered from the study of 233 agribusiness market places on the web: (i) Being an established business that does not try to collect fees from traders is conducive to market liquidity and success. (ii) Features such as auctions, information services and advanced inter-organization communication systems do not foster success, and may be detrimental. (iii) Agricultural machinery sells on the web but livestock and other farm inputs or outputs have not sold well on the web.

#### **Lessons for e-commerce in agriculture**

What have we learned from our review of the current situation for e-commerce? First, commercial farmers are ready for web-based commerce and are willing to

participate. Second, for commercial value, technological sophistication is not the key. The site must have a clear purpose that fits the business. Third success requires experiment and learning. Farms and agribusinesses can learn from each other and from information suppliers outside agriculture. Finally, e-commerce is not itself a winning niche; firms must have a sound business reason to use the web and a product that is web compatible.

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