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**Emerging Trends in the New Food Economy:
Consumers, Firms and Science**

by
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Emerging Trends in the New Food Economy: Consumers, Firms and Science

Emerging Trends:

Seven trends that emerge in the new global food economy will be identified followed by a discussion of how they evolved and what they imply for public policy and for various types of firms and consumers. Some have called it the "brave new world" of food production and consumption. Some dislike what they see, others fear it, and many embrace it. The new food economy involves many non-food firms that provide ancillary services and products. They go way beyond the familiar farm input suppliers to consulting firms for software and data analysis, to electronic system designers, to engineers of food and packaging, to biological and physical scientists who redesign the food itself. Together, they make the food system work for consumers and for those firms that are receptive to new technology and new ways of doing business. Seven trends are:

1. The supply chain is now a demand/supply loop where information about consumer demand heavily influences what is produced and when it is delivered.

2. The tasks of moving food and agricultural products from field to fork are preformed by a diverse set of firms and agencies in complex, often global networks, involving private contracts, public agencies, and diverse consumers.

3. As parties in the food network become more tightly integrated, the role of international trade policy, as it relates to agriculture, is weakened. Nation states' trade agreements are still vital for opening borders, but private parties negotiate the products that are bought and sold.

4. Consumer food choices are more varied within a local area but more similar across regions and nations. The global food economy diminishes the importance of seasonality and country of origin and increases the presence of branded and ethnic foods.

5. Consumers continue to seek value (quality at low prices) and convenience and retailers who provide both are leading the retail industry and changing the business model for everyone in the food chain.

6. Horizontal consolidation of firms in all segments of the food chain is being promoted by the economies of scale that come with business-to-business e-commerce, forward contracting, and the purchasing power of large retailers.

7. Public policy is focusing less on protecting small farmers or feeding the hungry, and more on consumer issues like the cost of health care in the face of rising diabetes and obesity, the safety of the food supply in the face of bio-terrorism, the identity of food sources, be it country or genetic strain, and the potential for monopolistic/monopsonistic retailers to exploit both consumers and suppliers.

In short, the food industry is operating with a whole new economic model. They are using new telecommunication and computer technologies, experiencing new ownership and management styles, contracting in a new global market, and selling to more urban and urbane consumers. This is not your father's food and agricultural system!

Supply-demand loops

By now every large retailer compiles their scanner data and analyses it to track the exact number of each item that is sold each day. Some can track the purchases to specific consumers and customize their marketing to individual customers. With this knowledge they can forecast exactly what they need to order and on what schedule in the future. Some retailers share this forecasting task with their vendors and let them determine what to deliver and when. This is known as "vendor managed inventory" (VMI). It works only when stores trust vendors with their data and when there are fully compatible computer and telecommunication systems in place so that data can be readily shared and kept confidential.

Computerized information and logistics systems were brought to the food industry by Wal-Mart, the readily acknowledged leader in supply chain management. They and other retailers that follow this business model have brought intense price competition to the food chain. They provide lower prices and greater variety to consumers in both urban and rural areas around the world. They have driven many small grocers out of business and diminished the role of brokers and wholesalers as they establish their own distribution and purchasing centers. They have enormous buying power and exercise it with food manufacturers, fresh meat and produce suppliers, and even with vendors of general merchandise. These mega food chains continue to expand in the U.S., South America, Europe, Asia and other countries. Some speculate that shortly there will be only three or four major grocery chains in the world and if you watch the expansion of Wal-Mart, Carrefour, and Ahold this is an easy trend to track (Reardon, 2002). Wal-Mart is estimated to have 37 percent of the global sales of twelve leading retailers in the EU, and

Carrefour has 20 percent of the European sales (IGD,2002, p. 83). Ahold has expanded in the wholesale business serving foodservice establishments where demand is growing faster than in retail food stores and profit margins are higher.

Reardon (2002) argues that the rapid expansion of supermarkets in Central and South America and Asia is not just an urban and upper class phenomenon. Supermarkets are now established in middle and working class neighborhoods and small towns in newly industrialized countries. They are providing consumers with low cost food, convenience, variety, and safety unheard of a decade ago. The successful expansion of supermarkets with their buying power changes the "rules of the game" for their suppliers.

The coordination of buyers and sellers, the quality and standards demanded for food attributes, packaging, and labeling and the number of intermediary agents or firms who supply transportation and analysis explode when these large retailers dominate the food market. The ramifications for upstream suppliers is that they, too, must coordinate their activities, find ways to realize economies of scale, and be able to respond to this new food economy. It means that firms will merge or acquire other firms in order to provide the quality and quantity of products being purchased, generally under some type of contract.

Signals for what type of seeds farmers need to plant and how they need to treat their crops with fertilizer and chemicals (or not) and how they treat their animals in the process of raising them come from the food processors they sell to. The processors take their signals from the retailers who are, they claim, responding to consumers' preferences. In any case, retailers are the gate-keepers for what can be sold in the market. They prefer dealing with a few large vendors, so obtaining a contract to supply major retailers gives

farmers and others in the supply chain great incentive to get larger, provide consistent quality and precise information about the products characteristics and the processes of production.

A Web of Interlocking Activities

A characteristic of the new food economy which uses e-commerce extensively to communicate between buyers and sellers is that processes and relationships tend to be developed before the actual products are produced. The emphasis is on how to get a tasks done, and who is in the best position to deliver the goods on time and at the price consumers/retailers are willing to pay. After all these decisions are made, the cooperating parties decide on the actual products, delivery dates, and transportation modes.

We have typically focused on a linear supply chain and now on the supply - demand loop. [Figure 1] It is a nice linear map that helps us think clearly about who does what. It simplifies public policy analysis and delivery because it provides a target for regulation and identifiable beneficiaries for public welfare programs. But in real life, these economic agents rarely perform neatly packaged tasks or buy and sell in linear demand channels. Commercial relationships are built across multiple firms in multiple countries and they change readily when a better deal comes along. Ironically, as transactions come to depend more on electronic technology for communication and tracking of product characteristics and location, they depend more on personal and social relationships for their initiation (Rauch, 2001).

With this in mind I propose that we begin to think about the new food economy less as a chain or a loop and more as a web with food consumption at its center (Kinsey, 2001). [Figure 2] Each of the twelve vectors radiating from the center represent a set of

tasks or activities that must be performed in order for food products to be produced, delivered, and consumed. 1. Adding value to raw commodities (cleaning, packaging, manufacturing, cooking) 2. Aggregating and storing products for future sale 3. Monitoring of product safety and quality 4. Waste management, environmental preservation, and recycling 5. Managing and training labor 6. Technology adoption 7. Collecting, interpreting, transmitting, and analyzing information about consumer/customer demands 8. Basic science and technology 9. Providing financing and credit. 10. Overseeing and facilitating the integrity of the market, the welfare of producers, workers, and consumers. 11. Growing crops and raising animals 12. Transporting product from one point to another.

The parts of the web that tie these rays together are the relationships and strategic alliances between people, firms, and institutions that perform these activities. These task performers are positioned in a set of concentric circles around the rays of the web. Consumers (C) are closest to the center of the web. They commonly perform eight or nine of the twelve tasks. They could grow their own food, transport it, add value to it, aggregate and store it, monitor its quality and safety, handle its waste, recycle its packaging, manage and train their own labor, and adopt many new technologies. Moving out each vector the various economic agents are retail food companies (R), foodservice companies (FS), wholesalers (W), manufacturers (M), ingredient manufacturers (I), first stage handlers (H), farmers (F), seed and feed companies (S) now often called life-science companies, government agencies (G), the media (TV), universities (U), scientific laboratories (L), banks (B), and commodity exchanges and the stock market (X).

Each of these types of firms perform some tasks that are necessary. The tasks may be integrated within a firm or out-sourced depending on a strategic plan and comparative advantage of potential partners. A firm that is vertically integrated through ownership, say a food manufacturer, would internalize all tasks and operate (almost) totally on the circle around the web that connects the M's. If they begin to contract with other firms to supply proprietary products or services they are beginning to operate in a more modular fashion but can retain control of the quality of their product through contracts and alliances or the acquisition of new types of businesses. These connections can be expected to change with new science, technology and product demands. Figure 3 illustrates how the connections of the web might change if a food manufacturer out-sources all transportation and storage to a wholesaler, labor training to educational institutions, scientific research to government agencies and universities and all credit functions to banks.

The point is that the activities involved in creating and transporting food from farm to fork can be performed by any number of economic agents even if they are controlled by a few. The pattern of the web depends on how integrated or how modular production processes are and which is the most efficient form of organization. When the circle breaks up into complex modules with ever changing sets of alliances and contracts, entering the market may be easier for the successful and lucky entrepreneur, but much harder for the small and timid seller. Tracking food safety, quality, raw product source, and prices becomes harder, more expensive and more important. The control points and profit margins tend to shift from sellers to buyers, from those who produce to those who analyze, from those with hard assets to those with the best market intelligence.

The market for food and agricultural products that we have known and loved was a relatively friendly and democratic place. Anyone with a product to sell could enter and sell their commodities to willing consumers or, as a fall back, to government programs that fed hungry people. But in this evolving web of short term contracts and long term property rights, the market is being de-democratized. It is getting harder to enter without a contract, a strategic alliance, or a personal relationship between buyer and seller.

Public Policy Implications

The paradigms on which we have modeled public policy for agriculture have depended greatly on assuming homogeneous products that can be traded across national borders with the help of international trade agreements. What we now face is the very real possibility that there is not a good fit between food and agricultural firms and a nation's borders. Multinational firms are the norm. They source their inputs and build their commercial relationships with suppliers or buyers that best suit their business strategy regardless of nation's public policy. Of course, they are subject to the laws of the nations they trade in and international trade agreements certainly pave the way for product movement, but fewer firms rely on governments to find trading partners. Often, private firms pave the way for economic development and education in spite of nations' policies..

Much of food and agricultural policy has focused on preserving the capacity to produce food within a given country and this translates into preserving the productive capacity of farmers and the rural countryside. With global movement of food and firms, this is technically an outmoded idea but, since September 11, 2001, the importance of country borders has been rediscovered. Under attack countries close their borders, and

products don't move as freely as we have come to expect. Policies that ensure local food production will likely continue while simultaneously becoming more dependent on international commerce. The world is united by the need to harmonize standards of food safety, electronic commerce, and transportation. It is also united in fear of newly identified ideological and physical threats and its need for each other's protection and economic well-being. Food is at the heart of countries' economic well-being and going forward, governments will be challenged to figure out how to harness the power of commercial, multinational, food distribution networks for public benefit when necessary and how to get out of the way of entrepreneurial activities when they provide more people more food at lower prices.

A major concern is the consolidation of farms which leads to the demise of small or under capitalized farmers along with a traditional rural lifestyle. But, agricultural policies that offer price or income support based on the amount of commodity produced encourages farm consolidation just as surely as the market forces of supply chain management and retailer power discussed above. This sector of the supply chain is encouraged to merge into larger units for economic reasons by both private market forces and public policies.

Consumers: Everyone is a specification buyer.

There is a longstanding debate about whether consumers' preferences really determine the products offered on the market or if it is the outcome of clever food marketing. Surely it is some of both, but marketers become clever by studying consumer trends and ever changing preferences. Consumers continue their quest for convenience, not just in the kitchen, but in shopping and procuring food. There is also a pervasive

quest for a bargain. These two trends are observed around the world and make "value sellers" such as Wal-Mart and Auldi popular with consumers. It was once thought that these stores served only low-income consumers but when BMW's were observed in the parking lots of Auldi, food marketers knew something had changed. These trends exacerbate the decline of traditional grocery stores who survive only in differentiated niches, responding differentiated consumer wishes. As "value sellers" come to dominate the food chain, their buying power will elicit conformance all the way back to the farm.

Another ramification of consumers' quest for a bargain is growing obesity in urban areas around the world and all across the U.S. and Europe. With food being plentiful and relatively inexpensive people are consuming more calories than they burn and they are increasingly suffering from expensive health care problems affiliated with obesity. The dual public policy concerns of providing sufficient food for hungry people and encouraging healthier eating patterns among the affluent presents new challenges to the leadership in the new food economy. Developing foods that are more nutritious, less fattening, environmentally friendly, and still appealing to consumers is a challenge to scientists whose technical skills are sometimes feared and often suspect. The merging of food science and medical science will provide some of the answers, but consumers will need to participate in the food system in an educated and informed manner as they continue to drive its future.

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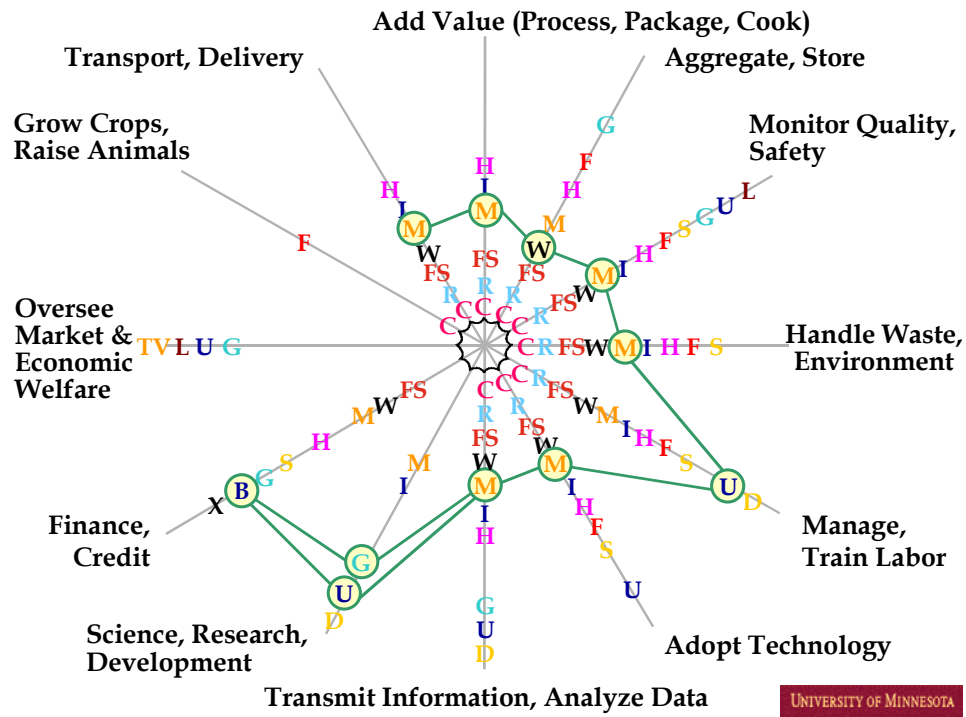
Figure 1 The Food Supply-Demand Loop



Figure 2: Food Production and Distribution Networks



Figure 3: Potential Food Distribution Network



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By Dr. Jean Kinsey

Abstract

Seven trends that emerge in the new global food economy will be identified followed by a discussion of how they evolved and what they imply for public policy and for various types of firms and consumers. Some have called it the “brave new world” of food production and consumption. The seven trends are:

- 1. The supply chain is now a demand/supply loop.*
- 2. The tasks of moving food and agricultural products from field to fork are preformed by a diverse set of firms and agencies in complex.*
- 3. A weakened role for trade policy as the food network becomes more integrated.*
- 4. Consumer food choices are more varied within a local area but more similar across regions and nations.*
- 5. Consumers continue to seek value (quality at low prices) and convenience.*
- 6. Horizontal consolidation of firms in all segments of the food chain is being promoted by the economies of scale.*
- 7. Public policy is focusing on consumer issues like the cost of healthcare, the identity of food sources, the safety of food supply in the face of bio-terrorism and the potential for abuse of market power.*