New international linkages shaping the U.S. food system

by Ray A. Goldberg

Global linkages in the food system are two-way streets reaching into new markets and transporting new inputs, new technologies, new business relationships, and new participants into the food system. These linkages help create both highly competitive and interdependent new global and U.S. food systems. The U.S. system is setting new standards of operating efficiency and environmentally sound production as it serves global consumer needs for food, feed, fuel, and pharmaceuticals.

Historically, participants in the U.S. food system have necessarily taken a global perspective. Our nation imported its seeds, its farming technologies, and even its farmers. We have always had an umbilical cord attached to the global food system. It's a love/hate relationship knowing how dependent we are on the rest of the world for expanding markets and yet how competitive other technology suppliers, producers, processors, and distributors have become using our technology in reaching back into our domestic markets and into the new global markets we helped create.

Today's linkages

Many types of international linkages will continue to uniquely affect the structure of the U.S. food system (see box). The most obvious linkage is direct ownership and management. After acquisitions of major U.S. food system business operations over the last several decades by European, Asian, and Latin American entities, some 25 percent of our inputs, 1 percent of our farmland, 10 percent of our manufacturing, and 15 percent of our food retailing operations are owned and managed by non-U.S. entities. Most participants in the food systems of major countries believe they must be part of a global food and drink structure. To do so they must have equity and operating positions in the United States. I estimate that, by the year 2003, some 20 percent of our inputs, 1 percent of our farmland, 15 percent of our manufacturing, and 20 percent of our retailing will be owned by entities outside the U.S. market.

Ownership linkages are further en-
hanced by new jointly owned multinational firms with ownership in two or more countries. These firms include Coke-Nestle, General Mills-Nestle, Pepsi Cola-Unilever, Kirin-Anheuser-Busch, and Molson-Miller Brewing. Others include the ADM and U.S.-European cooperative ownership of the German firm Toepfer, the Ahold ownership of U.S. supermarkets, and the supermarket acquisitions of Tenglemen, Sainsbury, and Marks & Spencer.

The increased global ownership is taking place at a time when enormous consolidation is occurring in the U.S. food system. According to the U.S. Census Bureau, in 1987 50 U.S. food processing firms accounted for 48 percent of total sales, 50 food wholesalers 71 percent of sales, 20 food retailers 36 percent of sales, 50 food service firms 22 percent of sales, and 10 percent of the farms 80 percent of sales. By the end of this century consolidation will be even greater. The trend to consolidate is global and facilitates networking among the food leaders of the world to provide a personal global intelligence system.

Informal consortiums of retailers, manufacturers, and farm suppliers that meet on a quarterly basis and conduct think tanks and joint research strengthen multinational ownership and further affect food system structure and capability. The new ownership patterns and informal consortiums expand both global market opportunities and global sourcing of unique products. They provide rapid acceptance of joint programs involving retailers, manufacturers, farmers, farm suppliers, and technology developers. They provide a new breed of global multilingual managers familiar with the best practices of each firm's operations worldwide.

Both the direct ownership and informal consortiums shift power from manufacturers to retailers—already a trend in Europe and Canada and now happening in the United States. The uniform bar code, scanning devices, and shared inventory management systems of retailers provide key information so important in food system management. These technologies are central to the new importance of retailers. They accurately and promptly indicate changing consumer demands. Retailers not only relay this critical information up the food system chain to reduce inventory requirements and decrease stock-outs, but also take leadership in new product development. These technologies of the new food system help even small, multinational retailers place new emphasis on both high-value and low-cost private labels that provide consumers more choices and increase competition for the national and multinational brands. The new technologies provide low-cost knowledge, unique value-added product knowledge, and an efficient logistic system that shrinks the number of decision points in the system and at the same time finds new ways to reduce risks in a very unstable world.

Joint ventures and less formal cooperation between profit and nonprofit entities (other types of global linkages) expand product and environmental possibilities. Merck has a joint venture with a nonprofit entity, Inbio, in Costa Rica to cooperate in obtaining scientific samples from the rain forest. This provides an opportunity to share in the commercialization of products and use the proceeds to better protect the rain forest from damage and exploitation. Alternative pharmaceutical products are becoming more feasible. The Ford and Rockefeller foundations have helped create major commodity research entities for major global crops. An example is the International Rice Research Institute which contributed directory to the Green Revolution with its new rice varieties. Cooperation between foreign institutions and Pioneer Hi-Bred and other seed companies provides year-round seed pro-

---

**Linkages shaping U.S. food system**

1. Horizontal and vertical ownership.
2. Third-party entities: Coke/Nestlé, Cereal Snacks, Booker/Tate.
3. Informal consortiums.
6. Formal marketing and procurement synergism: AMS.
7. Dedicated products and processing plants: Marks & Spencer and Wal-Mart.
12. Trade associations: FMI, GMA.
13. GATT.
15. Monopoly commissions.
16. AID, World Bank, IFC, Commonwealth Development Corp., Latin American Agribusiness Development Corp.
17. Futures markets.
...the distributor becomes the global market coordinator of the domestic and global food system, as well as the primary contact with the consumers.

Induction for American farmers.

Other international linkages (see figure) must be noted: new pricing mechanisms from Ocean Spray and Pepsi and others for U.S. farmers, new dedicated market relationships from Marks & Spencer for Wal-Mart, new technology sharing from Monsanto and Delta Pine with Calgene and Unilever. Pioneer Hi-Bred's joint venture with Kraft Foods provides new tailor-made products. Public and semi-public institutions and their associated policies, including domestic commodity policy, trade associations, futures markets, protection of intellectual rights, GATT, and monopoly commissions are all being developed in a global context and are linkages affecting the structure and operation of the U.S. food system.

Implications for the U.S. food system

Five implications of the developing global food system are especially noteworthy.

1. First and most importantly, the linkages themselves are crucial for low-cost and effective unique value-added production.

2. In most countries, but not in the U.S., new linkages have the support of a combined private and public sector. As a result, some U.S. firms discuss moving corporate headquarters outside the United States.

3. Farmers have been the most isolated sector in the global farm system. However, farmer cooperatives are working to develop new international relationships. The Saskatchewan Wheat Pool in Canada, for example, works with Cargill to better distribute products. Cooperatives have finally begun to get more non-farmer board members. As tailor-made food develops, the farmer will become more of a partner, both inside and outside the U.S. food system.

4. The definition of a commodity system is now much broader—the corn industry now becomes the sweeteners and starches systems—and increasing global competition is leading foreign firms to enter this broader U.S. market structure. Tate & Lyle and Ferruzzi are examples.

5. The definition of the new food system structure goes far beyond a global information and technology revolution. We must redefine the traditional functions of the system, where these functions are performed, and who performs them:
   • Farmers become farm technology, product, resource, and environmental managers.
   • Seed, feed, farm machinery, chemical and fertilizer suppliers become technology sources, coordinators, and tailor-made food initiators.
   • Commodity handlers and processors become multiproduct stream developers and coordinators with a heavy emphasis on information and logistics, serving the food, feed, fuels, biochemicals, and pharmaceuticals markets.
   • Brand food and beverage manufacturers become food and drink inventors with unique quality, nutritional, and environmentally friendly products. These manufacturers will increasingly have strong links with food distributors and material suppliers including a joint information system with distributors for inventory management and production schedule controls.
   • Distributors and retailers become consumer advocates armed with scanning feedback devices that permit them to create new private-label products to supplement the branded manufacturers' operations. Armed with this special relationship with the consumers and an intelligence network second to none, and also enhanced by horizontal relationships with other distributors around the world and joint ventures with suppliers, the distributor becomes the global market coordinator of the domestic and global food system, as well as the primary contact with the consumers.
   • The U.S. Department of Agriculture becomes a coordinator of rural development and cluster industry development. It coordinates the nutritional/health, food stamp, environmental, productivity, food safety, trade, alternative commodity programs and agricultural biotech activities of the U.S. food system. USDA is a critical link to other national and international government agencies in the global food system.

The new private and public managers will manage new entities, technologies, and management teams, and will be more responsive to the food, health, energy, and economic development needs of society.