Changing State of the Apple World

The apple industry around the world has changed dramatically in the last quarter century. This article describes some of the major, underlying drivers of change that have occurred. It puts special focus on those that could play a significant role in shaping the industry's future.

World Apples, 2014 versus 1994

But, first, a quick look back, and a summary of the present, to set the stage for speculation about the future. The table below shows that in 2014 the world apple industry was producing 80 percent more apples on 16 percent less area harvested than in 1994, due to a more than doubling of average yields. However, the pattern varied widely by region. Production rose dramatically faster than the world average in China, and slightly faster in Africa. In China's case, in 2014, that was achieved on 15 percent less area harvested, while Africa had 45 percent more area.

World: Apple Production, Area Harvested and Average Yield, 2017, and Percent Changes, 1997 to 2017

Area	Production, 2017	Area Harvested, 2017	Average Yield, 2017	Production Change 1997 to 2017	Change in Area Harvested, 1997 to 2017	Change in Average Yield, 1997 to 2017
	(1,000 mt)	(1,000 ha)	(mt/ha)	(%)	(%)	(%)
World	83,139	4,934	16.85	+ 26.6	+ 2.0	+ 24.1
Africa	3,194	177	18.02	+ 57.7	+ 31.4	+ 20.1
N America	5,519	145	38.19	+ 20.8	- 9.9	+ 34.0
S America	4,269	116	36.78	+ 14.1	- 9.0	+ 24.8
China	41,390	2,220	18.64	+ 48.6	+ 13.2	+ 31.3
Other Asia	12,954	1,220	10.62	+ 13.4	+ 7.9	+ 5.1
Europe	14,248	959	14.85	- 3.2	- 22.1	+ 24.3
Oceania	768	28	27.37	- 3.9	- 3.8	+ 0.2

The slowest growth in production was in Oceania (Australia and New Zealand), Europe, Other Asia (that is, Asia excluding China), and South America. Of these four regions, both Europe and Oceania experienced a decrease in area harvested, offset in Europe by an increase in average yields. The world, and most regions, had increases in average yields of more than 20 percent in the decade.

Performance in 2017

In 2017, China accounted for 45 percent of world apple area harvested and 50 percent of world apple production. Europe, the traditional leading producer, had slipped to less than 20 percent of world apple area harvested and about 17 percent of world production. Other Asia accounted for about 25 percent of area but only 16 percent of production. The long-established apple industries in North America, South America, and Oceania had 6 percent of area harvested, but 12.7 percent of production, because of higher yields in North America.

World population grew by 13 percent between 2007 and 2017, compared to a 27 percent increase in world apple production. This caused apple production per capita to rise from 9.76 to 11.39 kilograms, an increase of 17 percent. Growth in world fresh apple exports failed to keep pace with the growth in world production after 2010. As a result, the share of world apple production exported fresh has slipped, meaning that over 90 percent is still consumed in the country where it is produced.

Major Geopolitical Changes

A few major geopolitical changes between 1994 and 2017 have impacted the apple industry. A severe shock to the system was the Asian financial crisis, which hit in 1997, and slowed demand in much of Asia for the next decade. During the same period, China was able to insulate itself from the negative effects and grow to be the second largest economy in the world after the United States.

In the first decade of the twenty-first century, trade barriers fell and trade boomed. Two giant economies, China and Russia, and many smaller countries, were admitted to the World Trade Organization (WTO). There was much optimism that the other BRICs countries, like Brazil, Russia, and India, could soon emulate China's success. However, the Great Recession and the world financial crisis that hit in 2008, slowed both domestic and import growth in many countries and slowed trade in fresh apples.

More ominously, beginning in 2014, China and Russia began to reject western norms, for example with Russia's annexation of the Crimea, and China's militarization of disputed islands in the South China Sea. China has launched a massive infrastructure project, called "One Belt One Road", that would connect it to much of Asia, Europe, and eventually Africa. Both China and Russia have made it clear that they are no longer willing to accept world leadership by the United States and its allies in Europe and Asia.

The Tide of Debt

Much of the buoyancy in consumer expenditures prior to the Great Recession was due to personal debt, including credit card, automobile and home mortgage debt. Simultaneous crises in the financial, automobile and housing markets in 2008 led to delinquencies, bankruptcies and defaults. To stimulate their economies, many governments increased their debt levels, replacing private debt with public debt.

While that provided some economic stimulus, in many countries, public debt as a share of productive capacity has risen to dangerous levels. Smaller countries, like Portugal, Spain, Ireland, Italy and Greece, needed bailouts from international bodies like the World Bank and the European Central Bank. Despite its bailouts, Greece's cumulative debt has become so burdensome that it cannot possibly be repaid.

More ominously, major countries like the United States, Japan and China, have continued to add to public debt, that is already at record levels, with promises of more pensions, healthcare and welfare benefits to citizens. If interest rates were to rise sharply above present depressed levels, or creditors to lose faith in the ability of these countries to fund their debts, it could precipitate another global financial crisis.

Picky Consumers

Consumers have also changed in many significant ways in the last two decades. Most notably in the developed world, the population has gradually tilted older, as birth rates continued to fall and life spans to increase. While the young are more likely to be adventurous in their interests and activities, the concerns, attitudes and consumption patterns of consumers change as they age. Developed societies have become much more diverse and much more selective about the products and services they consume. In the apple industry that has meant demands for a proliferation of new varieties with novel tastes and textures.

In the developing world, where birth rates remain relatively high, and incomes have been rising rapidly, consumers want to enjoy the sorts of goods and services that are prevalent in the developed world. As a result, the developing world has gained increased buying clout in world markets. Where markets have been open, demand for products like fresh apples has soared. However, following the Great Recession, many countries have used selective devices to impede free trade.

Muscular Retailers

Beginning after advanced economies recovered from World War II, chain supermarkets gradually became the most important sales channels between apple marketers and consumers. Supermarket chains mostly bought produce on the spot market, and imposed little additional conditions on their suppliers. They competed against each other with price specials on selected items, while maintaining substantial margins on all other items.

In the 1980s and 1990s, new formats entered the food business. In the United States, the major disruptor was the discount chain, Walmart, which already carried a wide array of non-food items that it sold at everyday low prices. It applied the same principle to its grocery business, resulting in average food prices that were often 25 percent below those of traditional supermarket chains.

Another major disruptor was warehouse chains, like Costco, that kept prices low by utilizing low-cost facilities and stocking only the best-selling products in each food category. A third major disruptor originated in Germany. Limited assortment discount chains, like Aldi and Lidl, focused on own brand items at severely discounted prices. Aldi and Lidl expanded rapidly outside Germany as consumers faced economic setbacks from the Great Recession. The most recent shock was the acquisition of the Whole Foods chain by Amazon, the world's largest online retailer. Traditional chain supermarkets have tried to adapt by consolidating to gain economies of scale, or by introducing their own versions of the newer formats.

The net effect has been for the retail food business to become dominated by fewer, larger retail organizations. Such muscular organizations have increasingly demanded that their food suppliers meet rigid certifications for sustainability, energy efficiency, food safety, worker safety, wildlife protection, and other social goals, and be able to supply uniform products twelve months a year.

Supplier Consolidation

As the number of retail buyers has shrunk, and the demands of the muscular retailers have escalated, produce suppliers, including apple suppliers, have consolidated, both to gain internal economies of scale and to increase their clout with retail buyers.

It has become a competitive advantage for major apple marketers to have direct links with apple production. This has led to vertical integration between growing, packing, storage, and marketing operations, to horizontal integration across these different activities, and to the emergence of broader networks of producers, packers, and storage operations linked to a single dominant marketing firm. Many of these networks cross states, nations, and even hemispheres, to ensure 12-month supplies of premium-quality fruit.

Increasingly, large suppliers have become key partners with selected large retailers, not only to move product onto store shelves, but to help their retail partner move product off store shelves to consumers. Large suppliers have become more heavily involved with their retail customers in branding, packaging, promotion, public relations, contests and other devices to increase retail sales.

The Immensity of the Internet

The first article on the internet in the World Apple Report appeared in the December 1995 issue, one year after the Report was first published. By October 1998, under a heading "Internet Continues to Explode", we noted that "The continuing decline in the cost of hardware and software, the great increase in the speed, capacity and sophistication of internet operations, the tremendous growth in available content, and the growing skill and experience of many users have helped the internet become steadily more integrated into everyday life."

We concluded that article by saying "As the number of potential and actual uses of the Net expands, the innovative uses will also grow. It looks even more certain that firms and countries will be able to use the internet to gain new competitive advantages."

The internet has indeed become embedded in everyday life and business thanks to numerous other technical developments. Google has enabled major advances in search capabilities. The Smart phone, introduced a decade ago, has enabled users to be connected to the internet anywhere, any time. Programs like Skype and Facetime have permitted face to face telephone conversations. Facebook and its imitators have created global systems of social exchange. The emerging "internet of things" promises to make any electronic device controllable from anywhere in the world, while the "cloud" has provided unprecedented data storage capabilities.

The internet has also brought severe threats to businesses and individuals. No one has yet found a way to prevent hacking of their private communications and financial transactions, while autocratic governments have used the internet for repressive control of their citizens. The internet has become both a powerful tool and a malignant threat for modern societies.

Separate Apple Worlds Emerging

All these changes over the last two decades have led to the emergence of a number of separate apple worlds. The big divisor appears to be access to capital. In the developed world, larger firms have been able to utilize their accumulated capital in growing improved varieties, and applying the latest technologies in more advantageous orchard sites, modern packing and storage facilities, and streamlined marketing. In contrast, smaller operators have been stuck with inferior sites, outdated varieties, and limited ability to improve their operations, and their numbers have continued to shrink.

The traditional exporting countries in the Southern Hemisphere have also had mixed fortunes. Argentina has been handicapped by disastrous domestic economic policies, Chile and Brazil have moved sideways, while New Zealand, South Africa, and Australia have succeeded in revitalizing their industries.

The very large number of transition countries in Eastern Europe and Asia have struggled to raise funds from either public or private sources to modernize their apple industries. They are preparing to meet the 2020s with orchards, packing and storage facilities that were inadequate even in the 1980s.

The 2020s and Beyond

Many of the trends discussed above are likely to affect supply and demand for apples into the 2020s and beyond. While the general shape of future developments has begun to emerge, there could well be just as many surprises ahead as have occurred in the last two decades.

Faced with continuing changes in the global trading environment, well-capitalized, well-managed, and tech-savvy apple firms are most likely to have the strength and flexibility to adapt successfully, and build strong ties with major retailers.

Expect many more alliances between large fruit firms and their major customers, and more international linkages as the surviving firms continue to adapt to new challenges.