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## Introduction

The post World War II years were dominated by the Green Revolution as scientists and policy makers were intent on “growing two blades of grass where one grew before”. They succeeded, and continue to succeed, as agricultural productivity has gained faster than population growth for the last half of century. According to the United Nations Food and Agriculture Organization (UNFAO), the number of undernourished people in developing nations dropped from 920 million in 1980 to 799 million in 2000 while the world added 1.6 billion people, or a 43% gain in agricultural productivity/undernourishment reduction. Since 1990, in the developing nations of Asia and Africa, total food calories (excluding beer!) have increased on average by 5% to the point that every man, woman and child has on average 2900 calories/day. Undernourishment is not a food production issue, but rather a distribution issue. By the year 2050, when the world’s population is forecasted to peak at between 7.5-8.0 billion people and then stabilise and begin to slowly decrease, the additional 1.2 to 1.7 billion new people can be added and provided for without increasing manufacturing production capacity, nor for that matter, agricultural production capacity since less than 65% of the world’s arable land is currently in use.

*The point is this—the world knows how to produce (both things and food).*

Consumers in developed (developing) nations spend between 10-15% (25-30%) of their income on food (including meals taken away from home) which is approximately one half of what they spent in 1960. Furthermore, the world is awash in excess cash. In 2005, U.S. households held approximately 5 trillion euros in cash (\$6.45 trillion), Canadian households 1.55 trillion euros (\$2 trillion), Japanese households 3.1 trillion euros (\$4 trillion), Australian households 770 billion euros (\$1 trillion) and European households 6.2 trillion euros (\$8 trillion).

China’s middle class (331 million) is larger than the entire populations of both Canada and the U.S. At the end of 2005, China had 393 million mobile phone accounts becoming the world’s largest user. In 2002, China had only 190 million mobile phone accounts. Mexico’s middle class grew to 39 million during the last 15 years.

In the U.S., 63 percent of all people are overweight and 31% are obese. Thirty three percent of all normal weight Canadians in 1995 were overweight by 2003. According to the International Obesity Task Force, 300 million people are obese and 750 million are overweight worldwide. In Africa it is now four times more likely to find a child that is overweight or obese as it is to find one that is malnourished.

*The point is this—the world is richer and knows how to consume (both things and food).*

*The post World War II production world has been replaced with the modern consumer world where the food chain emphasis is top down (customer driven) not bottom up (producer driven). Kevin Roberts, CEO of Saatchi & Saatchi (part of Publicis) said it best—“For the first time the consumer is boss, which is fascinatingly frightening, scary and terrifying, because everything we used to do, everything we used to know, will no longer work.”*

## Food is Free

It is important to now view food as essentially free. If all that can be offered by producers, wholesalers and retailers is a basic calorie rich diet, then they are operating with a production world mentality which has not existed for at least 30 years. A consumer mentality world, however, would concentrate on value added components of food (the big four are convenience, variety, health and safety—CVHS).

Coffee that is brewed at home costs approximately 6 cents per cup and is, for all intents and purposes—“free”. A latte, cappuccino or Starbucks is not. Consumers pay for the value added of *convenience/variety*. The developing nations of Asia have increased the portion of their diet that is meat from 10% in 1990 to 15% in 2003 and added another 800 million in population increase during the same time period (UNFAO). Africa followed a similar pattern from 9.4% to 14.3%. A latte in a plaza in Rome is about convenience versus a home brewed cup, while the increase in meat-rich diets for emerging nations is about diet variety.

Wine became the most popular alcoholic beverage in the U.S. in 2005 in part because of the value added *health/safety* component. Ditto the assault by policy makers on snack foods and soft drinks sold in schools in North America and Europe as childhood obesity soared from 13% in 1960 to 31% in 2000. One hundred years ago, the gastrointestinal infection mortality per 100,000 people was approximately 120 in most Western nations whereas today it is essentially zero. Thus prior to and immediately after World War II food safety issues were paramount as science began to understand disease vectors. However, by the late 1950s most food safety issues were conquered and safety issues faded

away. Only in the last few years with the advent of Bovine Spongiform Encephalopathy (BSE), or “mad cow” disease has the issue of safety of the food system been on the public’s radar.

While food may be free—convenience, variety, health and safety are not and consumers worldwide are increasingly willing to pay. In economic terms, all of these factors have an income elasticity that is normal to luxury, *i.e.* for every 1% increase in incomes, there is a positive increase (or more than 1% increase if a luxury item) in the demand for the products/services that they represent. While certain cuts of meat and processed meat such as hamburger may in general have a negative income elasticity, certainly hamburger meat that can be certified to the source (have traceability) or be certified disease-free would have a positive income elasticity. In the U.S. the demand for the highest restaurant quality beef cuts (prime grade) by the general customer in non-restaurant venues is at least twice the available supply each week (approximately 3% of slaughter).

To emphasise the concept of “Food is Free”, a closer look at another industry is important. The telecommunications industry during the last century reaped trillions of euros from customers as they built complex infrastructures to carry voice worldwide *via* telephones. As the wireless industry emerged in the late 1980s they copied their land line counterparts and focused on voice by concentrating on selling a certain number of minutes of talk time. However, by the late 1990s voice minutes were expanding to the point that they were packaged with certain other features such as music downloads, Internet access, pictures, location via global positioning, calendars, ringers, text messaging, instant messaging and games. Today, voice is free on most wireless systems worldwide. If all a wireless company can offer is voice, they are obsolete. Thirty percent of all voice communications are now “free” via an Internet protocol called VoIP (Voice over Internet Protocol). What most wireless companies do today is offer free talk time essentially *via* numerous minutes, but charge for the other wireless services that each individual customer wants.

In May, 2006, IGD listed it’s “Ten to Watch” outstanding food retailers in the world as: 1) AS Watson (Hong Kong), 2) Central Retail Corporation (Thailand), 3) Couche-Tard (Canada), 4) eBay (U.S.), 5) Pantaloon (India), 6) Perekriostok (Russia), 7) Tchibo (Germany), 8) Wegmans (U.S.), 9) Whole Foods (U.S.) and 10) Wu Mart (China). All of these retailers concentrate on market segmentation and differentiation rather than mass marketing. It is interesting to note that the list includes the world auction market eBay which is not a food retailer *per se* but certainly has revolutionised the way consumers shop. Pantaloon in India has in-store kitchens so that customers can dine in, or have the chef prepare their food for take away. Many of the other retailers in the “Ten to Watch” list have in-store kitchens as well. Whole Foods concentrates on the organic market as well as the high-end customer and thus has the nickname “Whole Paycheck”. Whole Foods’ customers may have fun with the nickname, but they are loyal and the company is setting a blistering pace in store opening and earnings.

### Market of One

Retailers worldwide are looking for ways to differentiate the marketplace by any means possible, whether it is *via* income, age, race or the latest rage “a market of one”. The idea behind a “market of one” is that the generation of young people that were born in the mid to late 1980s is the most consumer driven “have it your way” group in history. In the U.S., 30% of all college graduates have attended more than 3 universities before they graduate with a bachelor’s degree. The typical student “picks and chooses” what courses and campuses they like best and/or how they want the class either on campus or *via* distance over the Web. The estimate from several sources puts new “blog” sites at approximately 30,000 per day as individuals express their own views and opinions on any and all issues. On demand publishing now allows anyone with only a nominal investment to fully publish and print a book, record an ISBN number and place it on Web ordering sites such as Amazon, Barnes and Noble and Chapters.

For the food industry, the concept of “a market of one” leads to three natural organisational changes. Two involve bricks and mortar—1) big box super stores that cater to a wide variety of choices that often involve more than food such as Wal Mart Supercenters, but include giants like Tesco which is the 9<sup>th</sup> largest clothing retailer in the U.K. Likewise, ASDA’s concept of “fashion democracy” involves providing an extensive array of choices at reasonable prices. Safeway has moved to a lifestyle store concept that promotes consumer choice; and 2) special narrowly focused stores that either cater to neighbourhoods, cultural or ethnic channels or other characteristics. However, these narrowly focused stores have to be clustered so that consumers can easily select meats, breads, fruits and vegetables from individual stores or have the choices under one roof à la Tesco’s neighbourhood stores or Trader Joe’s limited array but complete stores to satisfy consumers’ desire for convenience. The third area is, of course, the Internet. Estimates range all over the map, but there is no doubt that growth of all consumer items including food has been in double digits for more than a decade (doubling every 5 years on average). The convenience of ordering special food items *via* the Internet allows consumers to be more selective and certainly high-end in terms of quality as the meat industry has learned in the last 5 years. High-end special meats and meat products lend themselves to Internet sales as customers pick holiday and special event products. Food items that are considered commodities have limited success via Internet sales as transportation costs push them past local prices.

### Food Is HealthCare

A luxury to one generation becomes the necessity of the next. Only during the post World War II era have individuals viewed longevity as part of their lives. Life expectancies waxed and waned around 50 years of age in developed nations prior to WWII. However, as ages began to creep up (79 in the U.S. and 80 in Canada and Europe), people began to assume that they could live longer and in so doing, began to understand that potentially how and what they eat might

impact longevity. Broad studies emerged post WWII implicating almost every food as being bad for human health based on spurious science such as cranberries, red meat, mushrooms, apples, raw eggs, poultry, pork, coffee and a whole host of others. Fortunately, just as many studies emerged to counter each. Fads occur almost daily as blueberries are shown to be anti-carcinogenic or green tea imparts cardiovascular health.

Healthcare officials routinely use the model that 85% of healthcare issues faced by humans are behaviour related while only 15% involves non choice variables. In other words, human choices concerning lifestyles are the most important attributes about health—thus the focus that food is healthcare. Yet in the new world of food where CVHS and a Market of One dominate, broad studies that suggest a particular food may be either bad or good for humans holds little value. Two new fields of study point to the future of food—1) nutrigenomics (NG) and 2) micro nutrient isolation (MNI).

NG is the study of how food reacts biochemically with each individual's own DNA. Lard may be good for some, but bad for others. Some individuals may be able to eat large quantities of red meat daily with no bad side effects for others may have to limit their intake because of their inability to biochemically to store, process or mitigate certain fats and/or proteins. Needless to say this involves not only the sciences of nutrition, chemistry, and biology but also statistics, mathematics and computer algorithms.

MNI takes NG to a more detailed level. Instead of concentrating on a certain food such as beef, MNI looks for specific elements and/or molecules that impart either a benefit or non-benefit to an individual's health. Certain amino acids, for example, have been shown recently to be very important to potential problems with obesity and diabetes.

Taken together, NG and MNI merge to a vernacular expression—**prescription food**. Just as doctors prescribe a certain medicine for an individual, the future of food involves consumers knowing not only *what* food to eat, but *when* during the day and *how* much to consume to maintain the best possible healthcare.

### **The Big Two for the Meat Industry**

The world's meat industry faces two great opportunities for unbelievable growth. The first entails the most tonnage and the second the largest investment in human capital.

#### **Big Market One**

As the world becomes richer, the demand for meat will increase in all emerging economies. Yet it will not be the same as the past. Consumers are savvy. If consumers do not buy *via* the Internet, they at least search for information on products *via* the Web. As the world becomes more mobile *via* cell phones, the information will be more readily available. Therefore, merely providing calories and or protein *via* commodity meat will not pass muster in a world where food is free. Even in emerging societies, meat producers, wholesalers and retailers must increasingly be aware of convenience, variety, health and safety.

#### **Big Market Two**

As the world ages, especially in mature economies, healthcare is a major issue and food is an integral part. NG and MNI dominate. The future is not so distant whereby every individual will have a daily prescription broken down by the quarter hour on what micronutrients/vitamins/minerals are necessary for optimum health and likewise what quantities and types of foods are necessary to achieve the balance. Meat isn't meat in this world, but "*smart meat*". Human capital and human capital development is essential.

What is critical is that the meat industry worldwide will grow quantity-wise and just as importantly, quality-wise. Just as Starbucks is not about coffee but a lifestyle, the same is true for meat. Quantity and quality are moving targets that have to adjust to changes in lifestyles world wide. To be sure, we consume more coffee thanks to Starbucks, but only because we can get it "skinny", "with a twist", "to go", "no foam" all while hooked to the Internet *via* WiFi or WiMax in a comfortable environment listening to music or watching movies with our iPods streaming data while we Instant Message the person next to us in a chair and text message 23 others on our chat or party line. Such is the future of meat, be it in China, Ireland, U.K, U.S. or Cameroon.

#### **Sources**

Eurostat ([www.europa.eu.int](http://www.europa.eu.int))

International Food Information Council Foundation ([www.//ific.org](http://www.//ific.org))

Statistics Canada ([www.statcan.ca](http://www.statcan.ca))

The Economist ([www.economist.com](http://www.economist.com))

U.S. Bureau of Census ([www.census.gov](http://www.census.gov))

United Nations Food and Agriculture Organization ([www.un.org](http://www.un.org))