

## **“Wayfinders” for the “Grand Challenge”**

*Address by Ted Bilyea on receiving the H.R. MacMillan Laureate in Agriculture, University of Guelph, February 18, 2010*

I feel very honoured that I was considered for the H.R. MacMillan Award. H.R. MacMillan was a graduate of Guelph who had a tremendous impact on Canada. As British Columbia’s first chief forester he distinguished himself by making the initial international sales of B.C. lumber. Later he founded the lumber empire known as MacMillan Bloedel. He wrote and spoke on public policy, exerting enormous influence on Canada’s business and political leaders although he broke ranks with his peers to call for long term resource management policies that were far ahead of his time. If he was with us today he would be encouraging you as graduates to use your knowledge to help solve the challenge of agricultural sustainability that will test your generation.

Everyone here knows we have a growing sustainability threat and at the same time a huge opportunity in primary agriculture and all the products derived from agriculture. Foresight tells us we will have to produce far more with less negative impact. However, many in agriculture are struggling as the value of what they produce continues to drop. This is clearly the “Grand Challenge.” I have little confidence that current highly siloed research, “an inch wide and a mile deep,” focused on incremental achievement is sufficient to meet this challenge.

We need to get the truly great thinkers out of the labs and working with, colleagues from other disciplines, producers, consumers, business leaders and government on a vision of the future for Canadian primary agriculture and agri-products that turns the “Grand Challenge” into a collective compelling opportunity.” Without a wider common vision we are likely to continue finding solutions that simply move the problem around. The Agricultural Institute of Canada, which I am a member, has been focused on achieving a common vision which it calls a “Unifying Voice.” Without that as a starting point we will continue to be blown about in what business describes as the “Red Ocean” which is largely a zero sum game played in a given market place.

We need transformative thinking to get us to the “Blue Ocean” where challenges become opportunities and new markets are created or discovered with limitless potential often simply by seeing the world differently.

I will return in a moment to the “Grand Challenge” but first share with you a couple of my experiences which have convinced me that the odds of finding the “Blue Ocean” are more likely when the crew are an eclectic group of highly skilled “Wayfinders,” to use Wade Davis’ terminology, with broad interests that form wisdom, and driven by curiosity, adventure and a need to make a difference.

When I look back at some of the things that went well for me I am struck by the fact that they seldom went as planned. Rigid strategic plans only disappoint as the future will unfold in ways

we simply can not imagine. Leaders of my generation are handicapped as they learned and practiced a kind of strategy which gave the illusion of being in control when in fact real success was more about imagining a different world and having the freedom to create it when serendipity strikes.

I graduated from York's Glendon College in 1971 with an arts degree. I went to Glendon because I had a keen interest in world affairs and I had a strange idea that to fulfill that I should work for the Canadian Government in a post abroad. I wrote the foreign service exam, did the interview and got the offer. At the same time I applied to law school and got accepted.

At that point my grandfather who had built a successful business of high end butcher shops in Toronto stepped in and said look you have a degree but you need education in order to put your knowledge to use. He offered to pay for law school if I would defer both offers and work for a company. He suggested I apply at Canada Packers which is now Maple Leaf Foods, as it had a reputation as the training ground of the food industry. I took him up on the offer, got hired and rotated through a variety of very tough jobs from clerking in the beef and hog kill to keeping track of the cost of dozens of parts of a pig in the huge cutting room, to running the cannery. In my second year the HR department asked me if I would like to transfer to what was called "foreign trade." That department sold packinghouse and grocery products to the U.K. and Caribbean and was suffering greatly as it had just lost most of its business with the disappearance of the British preferential tariff.

One of the HR people had noticed that I had taken Chinese for three years and the Foreign Trade Department had made a sale of fish to Japan so he wondered if I could help them. I fought back laughter as I thought at the time there was little similarity in Japanese and Chinese but it sure sounded better than what I was doing. As you might guess my Grandfather got to keep his money as I stuck around for the next 35 years. So much for my rigid plan for my future.

I began to discover that there are opportunities in Canadian agriculture and food everywhere but they only become visible when they are seen from eyes with very different perspectives.

Shortly after moving to the "Foreign Trade Division" I was asked to take Mr. Ebihara who ran the food section of our Japanese sales agency to call on Omstead Foods a fish processor on Lake Erie near Leamington. Mr. Ebihara was from a Samarai family. He had graduated from one of Japan's finest universities and was a Military Cadet, the equivalent of a West Point graduate. He was about to embark for training as a Divine Wind (Kamikaze pilot) when the war ended and he found his way into the grain and oilseed trade.

Mr. Ebihara had accepted Canada Packer's agency at a time when imports of pork and beef were under small quotas so the main thing we could initially sell was fish. He was thinking of cancelling the agency on this trip as significant sales of pork seemed a long ways off and I think he was offended that such a junior person as me was taking him to meet our key fish supplier.

As we turned off the 401 near Chatham he asked me to stop the car. He walked out into a field and began examining the plants. I thought at first he just needed to relieve himself because it had been a long drive but after a minute he motioned for me to join him. Mr. Ebihara looked at me with great anticipation and said let's put the fish plant off until tomorrow. We need to find out where these soybeans are going and see if we can buy them. I didn't have a clue why they were of such interest but I drove up to the farm house where we met the farmer. I said "we like your beans and we are wondering if we could arrange to buy them". I could tell the farmer thought we were a couple of real nuts. He suggested we speak with the elevator operator down the road as that is where he always took his beans. The conversation at the elevator went something like this. "No problem we've got lots of soybeans how much do you need." When we told him we just wanted the beans from that farm he also thought we were crackers. However, after more discussion and an agreement to pay his costs of keeping them separate we came to a deal.

That evening we found a Chinese restaurant in Chatham, it was long before there were any Japanese restaurants outside of Toronto but Ebihara felt like celebrating and he was tired of western food. He was surprised that I knew how to order dishes that were not completely American versions of Chinese food and shocked when I could use chopsticks almost as well as him. He was utterly stunned when I explained that as there were only four of us in the first Chinese class at York we became good friends with our Chinese teacher and she invited us over many evenings where we learned to cook Chinese food, and discuss what Asia might look like when the Vietnam war ended. His attitude towards me completely changed and he simply said you will make a good student let me teach you how to do business with Japan.

It turned out that the beans we had contracted were Harwood variety, a large seeded high protein bean which had been developed by the Harrow research station using a Japanese variety. It was perfect for tofu and very good for miso. However, that fall we were the butt of many a coffee shop conversation around Chatham. My boss was none too happy either when a world shortage of grain and soybeans resulted in President Nixon putting an embargo on all exports of soybeans and Canada following suit. I had to spend a lot of time and money in Ottawa pleading for a permit to allow the first commercial shipment of Ontario soybeans to leave the country and then again in New York arguing with U.S. customs that their embargo did not apply to Canadian soybean. The soybeans got on a ship and that started a business which put Ontario on the world map as a producer and exporter of the finest food soybeans in the world. We had found the first of many "Blue Oceans" as we brought two cultures together and built business on Canada's natural advantages.

Shortly after that Japan began to open more widely to pork and we established Canada Packers Japan. The business grew quickly with frozen pork, fish and soybeans and I was spending increasing amounts of time in Asia. I was acutely aware that most of Japan's pork was domestic origin and carried a very high premium as it was fresh rather than frozen. We were supplementing a lot of our export of Canadian frozen pork with American frozen pork from Hormel as demand in Japan at times exceeded our internal supply.

While at the Hormel plant in the early eighties with my Japanese technical expert we noticed Hormel was testing the idea of putting boneless loins in cryovac bags and super chilling the pork to improve the shelf life of fresh pork between the Midwest and New York in the summer.

That night over several beers we wondered if it would be technically possible to ship chilled instead of frozen pork to Japan. Hormel thought we were crazy but allowed us to play with the idea in the plant for weeks before making the first trial shipment. The product arrived in good condition and was sold out within a few days. We carried on the business with Hormel until that plant was shut in the late eighties. I attempted to interest Canada Packers, by then Maple Leaf Foods, in installing a chilled line but was met with strong opposition by the controlling British holding company which had no interest in spending money on what they saw as a small niche.

I took the idea to the Alberta Government which had just taken over the Gainers plant from Peter Pocklington and was looking for a way to stem huge losses. We agreed to bring the IP for chilled pork to Gainers provided the government would cover the cost of the equipment. Within 6 months we were doing 23 million dollars worth of high margin business for Gainers to Japan and with the acquisition of MLF by Wallace McCain and the Teachers, we got the investment dollars to retrofit a large chilled pork operation in Burlington and later build a super plant in Brandon.

I began to gauge the degree of success of a new venture by the degree of skepticism, opposition or outright anger that it engendered. The greater the opposition, the greater the ultimate success.

I am sure the same thing happens every day here at Guelph as new ideas come forward. I can only imagine the skepticism that greeted Prof. Adam Dale when he suggested that growing Hazelnuts would be a good farming opportunity for Ontario.

So back to the "Grand Challenge." The FAO tells us that the world must increase food production by as much as 70% during your working lives. At the same time there are competing interests of fuel, fiber, and carbon sequestration for that land and the best arable land is being taken for non agricultural uses or simply being degraded by over-intensification.

The enormous production gains from the green revolution have slowed tremendously. We can still increase production but we have not figured out how to do it on the scale required without seriously drawing down the world's natural capital - soil, water, fossil fuel and phosphate. Moreover many believe we are nearing a tipping point in terms of irreversible ecological damage and climate change as complex self-regulating systems that have formed over millions of years are collapsing and being replaced by highly inflexible and unresilient anthropogenic landscapes of cities separated by monocrops.

So whereas my generation created more with more and freely disposed of the waste in the air, water and land, your generation will only succeed by creating more with less and recycling

whatever is left over. Some see this as a “wicked” problem without solution but I hope you see it as a tremendously exciting opportunity to personally change the world.

You are graduating from one of the finest universities in the world, with a degree. But now you need an education in life. You live in the best country in the world with opportunities in agriculture and agri-products everywhere. We are sheltered from the sustainability issues most countries are facing because we have such a low population density over arable land and massive supplies of water relative to other nations.

There is an income problem in Canadian agriculture for sure but there certainly is not an asset problem as farm land continues to rise in value. That fact is telling us that we have significant opportunities waiting.

We are witnessing real game-changing science that our industry has not yet grasped. For example, rapid identification of animal disease using a drop of blood and a large search engine to read fragments of circulating nucleic acids, engineered bacteria that can convert plant biomass directly to road grade diesel, improvement of the fatty acid profile of meats and milk by modifying the ruminal microbial metabolism through animal diet, nanotechnology that can capture vastly more solar energy than today’s technology, and many more discoveries which await someone like you to simply connect the dots and hopefully hear some say “that’s a crazy idea!”

As you leave here make sure your education continues everyday. To have real impact in your life you will have to reach beyond your discipline and expose yourself to very different experiences so you can see what others cannot see.

Dream big and associate with people who share a passion to turn the “Grand Challenge” into a staggering opportunity for Canada. Agriculture and agri-products have unlimited potential in Canada. We simply need you to be “Wayfinders” to the “Blue Ocean,” with wide enough experiences to grasp serendipity when it strikes.