

TEC

AN INTERNATIONAL ORGANIZATION OF CEOS

RESOURCE PRESENTATION SUMMARY



WINDS OF CHANGE:
THE FUTURE IS NOT WHAT IT USED TO BE

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INTRODUCTION

The future is not what it used to be. When your grandparents—if your grandparents—graduated from high school, they had everything they needed to succeed in their lives. They lived their lives without learning much more. Today, we are required to learn constantly.

Information is a term whose definition is changeable. While today, information might conjure thoughts of magazines, databases, records, videos, etc., future information will be based upon entirely different concepts we can't even imagine. For example, television was completely different from radio, and fiber-optics are a whole new ball game compared to copper cables. How much longer do you think they will print telephone books? What do you think a telephone will look like in the future? When you think of the future, and how you will be conducting business in the future, it is important to realize that the information environment will be vastly different than it is today. Our best computers today will, in the not so distant future, be obsolete, and new forms of computing will exist. We are about to enter an age in which the term "information" will come to mean something quite different than it currently does. The question is, will we be able to accommodate and embrace these changes?

POSSIBILITIES

Think about all of the little technological advances taking place daily. Many of them are currently associated with an existing technology. But some of the advances made in conjunction with that technology may in themselves create whole new realms to explore which are completely separate from the technology for which they were created. And many of these advances will dramatically change our world in our lifetimes. When you think of a new technology, consider its implications in areas which may not be immediately apparent.

- **Virtual reality** is interesting. Virtual reality will eliminate the need for real estate agents. You can create a virtual reality "walk through" of your house and put it out over the Internet.
- The **human genome project** is going to cause more problems in this country than most people ever think about. Genes are the things that make you who you are; they are made up of a kind of language or coding. The human genome project is discovering the coding for humanity. They are halfway through. In determining the coding, they are finding out what the genes do.

The average person has 15 birth defects. Wouldn't you like to have your birth defects changed or fixed? For example, if you have the genetic code for kidney disease or baldness, do you want that coding changed? This is technology we need to be talking about now because it is just around the corner. Your grandchildren will be genetically engineered. Even today, there are 300 to 500 people in the world who have undergone

successful genetic engineering. They have been helped immensely by genetic engineering. For example, genetic engineering can replicate cartilage, which cannot naturally replicate. This means we can restore joints.

The human genome project is trying to find the sequence involved in the human immune system. The Texas bubble boy did not have a human immune system. He lived in a bubble without human contact for seven or eight years, then he died. With today's technology, we can help people without human immune systems. We can take a string of DNA and make it replicate itself using the PCR process. Viruses are pieces of genetic material that know how to do two things: they know how to make your genes combine with theirs and they know how to make your genes create more of them. Scientists take a virus and remove its ability to replicate itself. Therefore, it knows how to combine genes, but not how to replicate itself. When scientists mix the virus with the codings, the virus suddenly (through combination) becomes coded for the human immune system. If you remove blood from a person without an immune system and combine it with the virus that is infected with the coding for the human immune system, the white blood cells will acquire the human immune coding when the virus infects them. The white blood cells can then attack invading bodies and the person is able to live a normal life. However, individual cells will die. Stem cells are crucial to human development because they produce many of the other cells, particularly blood cells. Scientists now know how to extract stem cells. Therefore, if you infect stem cells with the virus, the cells the stem cells create will contain the coding for the human immune system.

The question is, *should* we do this? Think about how genetic engineering could impact individuals, populations, societies, families, etc. There is a tremendous change coming in the near future of humanity because we have abilities we never had.

Think about cattle in Wisconsin. Some milking cows are fantastic producers. If you find a bull that has good milking genes, then you can take the genes of the high producing cows and bulls, replicate them, and produce cows simply for their milking potential. We can do the same things for humans. If you think it can't happen here, there's always Italy. Italy has no laws dealing with human embryos.

You can't get nervous about this and simply say, "Stop!" It is going to happen. What we need to do is think about it and plan for it. You have to prepare for the reality.

- Think about **magnetic levitation**. Magnetic levitation has been around for a very long time. Mag lev trains can go up to 300 miles per hour without motors, without noise. Environmentally, they are very clean because the electricity is concentrated. But, it is very expensive to start a mag lev train system. Consider this: what would happen to the value of land if you could go from southern Indiana to Indianapolis in 15 minutes? The first mag lev in the U.S. will appear between Miami and Disney World or between Las Vegas and Los Angeles.

- We now have technology which would allow **robots** to be the size of a cockroach or smaller. What could you do with a robot the size of a cockroach?

The customers of the future may very well be shopping for your products in virtual reality. They may send their cars (which drive themselves) over to pick up the products.

THE GALE OF CREATIVE DESTRUCTION

Everything you know is in the process of being destroyed. You have to be prepared for it and you have to plan for the changes that will occur.

Think back to 1980. What do we have today that didn't exist in 1980? We didn't have cell phones, pc's, fax technology, etc. Think about how those three innovations alone have changed the face of our society and your business. Think about how the next fifteen years worth of innovations will affect your business and the society around you.

DEMOGRAPHICS AND PREPARING FOR THE FUTURE

Preparing for the future isn't just a matter of thinking about technology; it is also thinking about people. The demographics of the future are very important. Look at the population demographics by age group.

The baby boomers are like a rat going through a snake, everything they touch they destroy and then it returns to normal. They are a huge population. If you track the baby boomers and tie your business into them and their aging cycle, then you are in good shape.

The interesting thing about looking 20 years into the future is that it changes your whole perspective. When you hit 42 and you have \$13 in the bank, saving will become your most frenzied activity. The 40s and 50s are the ages when you start saving. Watch the baby boomers as they pass through their 40s and 50s and you will see the savings rates go higher and higher.

The boomers are hitting the glasses phase right now. When people hit a certain age, they begin to need glasses. Lenscrafters and other quick glasses stores are making a lot of money off of the boomers' aging.

Motorcycles are another money maker. When men are teenagers they want motorcycles and their parents say no. In their 20s and 30s they have to spend their money on family and they are working too hard (and their wives say no). Throughout this time, every time a motorcycle drives by, a man will look at it and say, "damn!" But when men hit 50, they have more money

and more time, and one day they will see that bike go by them and they will just go out and buy their dream bike. We're talking about dreams. Dreams are worth money. And when you are older you begin to make decisions for yourself, not your family, and you begin to take more risks. Watch the baby boomers begin to buy their dreams. What are their unfulfilled wishes? There is money to be made in the boomers' unfulfilled wishes. When you are selling dreams to people, you have to sell real quality, because people don't scrimp on their dreams.

As you age, service becomes more important. Products are less important and service takes precedence. Think about what services the baby boomers are going to need as they pass through their aging cycle.

The kids of the boomers are going to be very different than anyone who has come before them. They are going to have to fight like crazy for everything they want. Boomers are sitting in all the places of power and they aren't moving anywhere for a very long time. Their kids are going to have to be creative to get anywhere. These kids have really interesting problems.

There are certain trends people tend to follow throughout their lifespans; but these trends are having to adjust to longer life spans. For example, you generally will move out of your parents' house between 18 and 20, you will live in a shack until you get married in your 20s, then you will buy the "starter" house and have kids in it, your kids will become older and you will move into the "school" house in which you plan to live until your kids are out of school, and then your kids will move out (you hope) and you will sell the house and buy a "retirement" home and start spending discretionary money. While this trend has been consistent for several generations, it is changing. Some differences are that young couples don't have enough money to buy houses and their kids will probably never move out.

CONCLUSIONS

In a world which is changing dramatically, you need to cultivate insight. American teachers ask their students to remember data or facts, then they test them on those facts. They are asking for a regurgitation of those facts. When the students walk out of the class, they dump all of the information they stored for that class to make room for the information they will need to pass the next class. We are not asking or teaching our students to think; and most of them don't know how.

To really get people to think and imagine and explore something new, you need to introduce them to it in a realm that is unthreatening. Once you introduce them to their own ability to think, then you might be able to inch them toward areas of thinking which are more vital and, therefore, potentially more threatening.

If you want to be in touch with our changing world, read *Scientific American* or the Tuesday science section of the *New York Times*. If you resist reading those two publications for some reason, at least read *Discover* magazine, it is like the *People* of science magazines. Please, don't stay with what you know. Learn a little about butterflies. Expand your horizons and you will expand your future. Read outside of your normal reading and have conversations.

Learn beyond where you are.

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