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2006 David M. Darrin '40 Counseling Award Winner
Delivered at the Spring 2007 Phalanx Honor Society Tapping Ceremony
April 1, 2007

Why do we have so much CARGO? Who will have the CARGO in the future?

I would like to thank the students of Phalanx for the opportunity to give this talk.

I would like to take the few minutes I have to tell you about several individuals that have changed the way I think about our world and as a result the way I live. Thus you could call these people some of my heroes.

The first person I would like to mention is Jared Diamond. Jared Diamond was trained as a biologist with a specialty in HUMAN PHYSIOLOGY. As a young physiologist I first learned of Jared Diamond by reading his papers explaining how water is absorbed by the intestine after drinking.

Recently, Diamond has been named Professor of Geography and of Environmental Health Sciences at UCLA. He has published over 500 technical articles, eight books, and has won many high honors, including the National Medal of Science and election to the National Academy of Science.

Why do we have so much CARGO? That was a question asked by Yali, a local in Papua New Guinea, of Jared Diamond who at the time was a biologist studying the birds of New Guinea. New Guineans use the word cargo to describe the material goods first brought to their country by Westerners such as pots, pans, and guns.

Diamond realized that what Yali was asking is why had Europeans they taken over so much of the world, instead of the native people of New Guinea?

- Why were Europeans the ones to conquer so much of our planet?
- Why didn't the Chinese, or the Inca, become masters of the globe instead?

It took Diamond over 20 years of work and it was not until 1997 that Diamond published the book GUNS, GERMS, and STEEL that was his answer to Yali's question "Why is it that you Europeans developed so much cargo, but we New Guineans have so little cargo of our own?"

Diamond's theories developed in GUNS, GERMS, and STEEL proposes that the roots of inequality in the modern world can be traced back to environmental and geographic forces.

He begins by examining the area called the Fertile Crescent where it is believed that early European civilization originated. It was the development of farming that allowed the early civilizations to produce enough food that some members of the community could spend their time developing tools, working with metals etc. Thus, the rate of development of tools was tied

to the efficiency of the farming.

Diamond then examined the crops available in different geographical areas. He found that Eurasia was the one area that had both plants (wheat and barley) and animals (pigs, sheep, ass, goats and cattle). This gave the people in this area the ability to produce large amounts of food surpluses high in protein content.

In contrast peoples in other parts of the world had few crops or animals that could be domesticated, such as New Guinea, where they only had the sago tree and taro a kind of potato. These were hard to cultivate, each taro plant has to be individually planted, in contrast to grasses such as wheat and barley. Both sago and taro are deficient in protein. Thus the people of New Guinea sometimes ate giant spiders to provide the necessary protein in their diet.

Another advantage the people of Eurasia had was that they could expand east west where the climate did not change. In contrast peoples in other parts of the world in particular North and South America had to move north and south where climate changes made it difficult to use the same farming techniques.

The people of Eurasia expanded and developed rapidly discovering guns and steel along the way and because they lived closely with their animals they developed immunity to some of the diseases transferred from their animals.

When Europeans moved to other areas such as north and South America they brought not only guns and steel, but also germs.

Thus, the answer to Yali's question according to Diamond is that Europeans had better resources (plants and animals) and a better geographic location. These factors allowed Europeans to have more CARGO.

The next question is who will have the CARGO of the future? I am not sure; however there are two books that I think have some interesting ideas of what is happening today. One written by Thomas Freidman is titled "The world is Flat" by and the second is "Wikinomics" by Don Tapscott and Anthony Williams.

How did the world get flat, according to Friedman in the late 80's there was an explosion of computers and the beginning of the internet. This produced an economic explosion where billions of dollars were poured into the new computing technology leading to the dot-com bubble and the fiber-optic bubble. This resulted in fiber optic cables being strung around not only the United States but the world. Then the technology bubble burst and most of the new technologic companies went out of business leaving a vast under-utilized optic cable network.

Next there was the Y2K problem, computer software could not handle the year 2000 because they have been programmed to only look at the last two digits of the year. Prior to this time the United States took advantage to Asian and Indian engineers by bringing them to the US, however this time they simply used the vast fiber-optic network to send the work to India and Asia which was one factor leading to the flattening of the world.

At about the same time another phenomenon called open-sourcing occurred. This was at first rejected by the business community; however some like IBM soon discovered that they could make money by collaborating with the open-source community. At the time IBM was trying to sell their own operating system called OS2, however they were not very successful against the competing systems produced by Apple and Microsoft. They soon turned to the open-source LINUX operating system and APACHE web server software. They asked some of their engineers to write code and give it to LINUX and APACHE community. They currently spend about 100 million on general LINUX development. They figure that if the LINUX community spends about 1 billion of development and if only half of that is useful to IBM costumers then they are getting \$500 million of software development for an investment of \$100 million.

This is the beginning of what DON TAPSCOTT AND ANTHONY WILLIAMS call MASS COLLABORATION in there book "WIKINOMICS"

Sometime in March 2000 Rob McEwen found himself at the head of Goldcorp Inc. as the result of a takeover battle. The company was a gold mining operation in Canada. Problem was that they had mined all the gold they knew the location of and were losing money. There in-house geologists has just spent \$10 million and had not found any gold. McEwen found himself at a conference when the subject of LINUX came up and he had a great idea, if his own geologists could not fine the gold maybe someone else could. He decided to take all the geological data from 1948 on and put it on the web for the world to examine. He then launched the GOLDCORP CHALLENGE with a total of \$575,000 in prize money for anyone who could tell him where he could find gold on his property. Soon over 110 targets came in and 80% yielded gold catapulting his company from an underperforming \$100 million to a \$9 billion juggernaut.

Mass collaboration has caught on in other ways. Proctor and Gamble (P&G) realized that they were only using 10% of their intellectual property (IP). They decided to make there patents available for other to license which lead to on-line exchanges like yet2.com.

P&G then took the next step of looking for solutions to some of its manufacturing problems on the web. For example when P&G wanted to introduce a new line of PEINGLES potato chips with trivia and pictures on them they discovered that writing a potato chip was not easy. They turned to the web and discovered that a university professor in Bologna, Italy was printing edible

images on cakes and cookies. He had cooked up an ink-jet method in his bakery that looked like it would solve P&G's problem. Today more than 35% of P&G's new product ideas come from outside the company.

The final example I want to mention is the Boeing Lego block airplane. Boeing has reduced the time to build the new 787 to 3 days compared to 13 to 17 needed for the 777. This is being done by having 70 to 80 % of the plane designed and manufactured by partners from various parts of the globe.

The world is changing rapidly and you are in an ideal position to be the ones who bring about the changes.