Apple Computer Product Life Cycle

Group member:  Philip Moyer
Nicholas Doria
Welsh Victoria
Peiquan Lin
Outline:

● Research and product development
  ○ $1.3 billion in overall research and development (2009)
  ○ $71 million in software development

● Resources
  ○ Aluminum (Australia)
  ○ Nickel (Russia)
  ○ Gold (SA)
  ○ Cobalt (D.R Congo)
  ○ 17 rare earth metals (China)

● Manufacturing
  ○ Intel processors in Arizona
  ○ LCD displays in NK, China and Poland
  ○ Hard drives in Thailand
  ○ Graphic chips in Taiwan
  ○ Wireless card airport Singapore, China and Taiwan
  ○ Primary vendor of production, catcher technology, shutdown in 2011 for violating Chinese pollution laws
  ○ CNC machines out of solid aluminum

● Recycling
  ○ E-waste
  ○ Many companies the claim to recycle often ship the e-waste they receive to developing nations with cheap labor and environmental laws – China and India
  ○ Valuable materials such as lead and copper removed
  ○ Burning or acid baths to remove other e-waste
    ■ Release toxic chemicals and leave residue that pollutes rivers
  ○ Quote from Apple recycling program
    ■ Most ends in landfills or shipping containers for third world countries
  ○ 2012 Apple withdrew from EPEAT standards (previously gold)

● Marketing
  ○ Advertise on all markets
  ○ Commercials on all major television networks
  ○ But the brand out there

● Packaging
  ○ Polystyrene

● Sales, distribution and transportation
  ○ US largest consumer
  ○ Easily accessible to products and stores draw more sales in faster time
  ○ Sold 40 million per year (110,000 per day)
  ○ Global market sales
Summary:

“Apple is committed to bringing the best personal computing experience to students, educators, creative professionals and consumers around the world through its innovative hardware, software and Internet offerings.” Looking around a campus such as Penn State, one will see that many people own MacBook’s. These products may be more expensive, but people are willing to pay for something that is technologically innovative. However, what Apple does not tell you is the problems that come with manufacturing.

The MacBook has become the go-to laptop of both students and professionals. This, however, was not a short and inexpensive project. Apple has sunk a massive $1.3 billion into researching the MacBook in 2009. The software that a MacBook comes standard with took $71 million to develop. Apple did not take shortcuts on the research and development of this machine; and it shows. The MacBook lives up to Apple’s standards of a great build quality that is built to last and look sleek.

Unlike regular PCs, Apple’s MacBook features a different build with different materials. The computer casing is made of Aluminum which is mined in Australia. Nickel is used in the manufacturing process of the computers, which is acquired from Russia. South Africa is known for their abundant amount of gold; this is where companies get the gold to use on the MacBook components. A main material of rechargeable batteries is cobalt this is mined in the DRC. Miners are not paid enough money to cover basic needs. MacBook’s use seventeen different rare-earth materials; all of these are mined in China. The Chinese government admits that this process is destroying the environment and their people. The MacBook is a global product, as the materials are gathered from different parts of the world.

Similar to the raw materials, the components to manufacture the MacBook come from many different countries. Intel supplies the processors that MacBook’s use, which are manufactured in the United States. LCD screens are manufactured by factories in North Korea, China, and Poland. Thailand is the main supplier for the hard drives that MacBook’s contain. NVidias produces the GPUs that MacBook’s use, which are manufactured in Taiwan. Wireless cards designed for MacBook’s were assembled in Singapore, China and Taiwan. Catcher technology, responsible for assembling the machines, had a plant get shut down for not adhering to pollution laws. Notice that most of these countries are third world countries, resulting in lower manufacturing costs and more relaxed pollution regulations.

Apple claims that recycling is a service that they will assist with. If a MacBook is taken to an Apple store, they will recycle and the person who brought the computer in will be reimbursed. As good as this service sounds, most people do not bother with this. Most of these computers end up as E Waste. Computers contain toxic chemicals, and by throwing away these computers the toxic chemicals are released into the environment to do their damage. The computers that are “recycled” are often shipped to third world countries to become E Waste since pollution regulations are more relaxed in those countries. These computers would be burned in an acid bath which in time will harm the water supply.

Apple does not cut short on advertising. MacBooks are marketed on all markets, worldwide. Whenever the TV is one, one is almost guaranteed to see a Apple commercial. It has been estimated that Apple spends at least $1 billion on marketing. That is a very large chunk of change, but Apple is a multi-billion dollar company so that does not affect them at all.
When talking about waste, it would be wise to talk about packaging. Apple products have very nice packaging. The box shows you what the final product looks like, and has a very nice look to it. Its main components are cardboard and polystyrene. Cardboard it easy to recycle, however polystyrene is filled with toxic chemicals. Apple has designed their boxes to be thirty percent less cardboard which allows more to be loaded on a plane, resulting in fewer greenhouse gas emissions.

Apple is one of the most dominant companies. This company is known for solid build quality on all of their products as well as simplicity, and it shows. The United States is the number one consumer for Apple products, like the MacBook. It is estimated that there were 40 million MacBook sold a year, or around 110,000 per day. In the end, people will continue buying very good quality products without looking at the harmful impacts that plague the world.