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IT 103 Section 007.

February 29<sup>th</sup> 2012.

GPS; Its Importance And Effects In Our World Today.

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## **Introduction:**

The importance of the Global Positioning in the world cannot be underestimated today. Since the beginning of what we know as the world there has been a need for navigation. Throughout history, there have been different forms of navigation and continuous stories of explorers who made navigation mistakes that were costly to the world. Christopher Columbus comes to mind on this issue because during his explorations the lack of proper navigation tools made him believe that North America was India. The impacts of the GPS have been phenomenal and radical in the 21<sup>st</sup> century most especially. From the ancient cartographers who used maps on paper to the atlas and now the amazing breakthrough of the GPS made available to the majority of people around the world. The impact and importance of the Global Positioning System cannot be overlooked.

## **Background and Brief History:**

The Global Positioning System as with most of other technological breakthroughs has been witness to a lot of change in the recent past. Initially built by the United States Department of Defense. Initially the GPS was designed with similar navigation systems such as LORAN (Long Range Navigation), which was developed in the 1940's and used during World War II. As a result of the tensions between both the U.S and the Soviet Union when the Soviet Union launched its first man made satellite in 1957, the united states was inspired further to create their own machine. According to Wikipedia, two American scientists from the Johns Hopkins's Applied Physical Lab (APL) with the help of the lab director were able to monitor transmissions for the Soviet man made satellite. This leads the APL to discover/develop the Transit System that

was used by the United States Navy in 1960. This was a milestone event and discovery for the United States.

Subsequent discoveries and improvements would be made after this until 1993 when another great event happened. “On June 26<sup>th</sup> 1993, the U.S Air Force launched the 24<sup>th</sup> Navstar satellite into orbit, completing a network of 24 satellites known as the Global Positioning System (GPS)’ (The National Academy of Sciences, 2009). By December of 1993, the GPS had achieved Initial Operational Capability and was running in full gear. However, the GPS service was open only to military personnel and in 1996, President Bill Clinton issued a policy declaring that civilians as well as military personnel should be able to have access to GPS devices.

Today, the Global Positioning System comes in various forms. From the GPS’ people buy for their cars to the GPS devices automatically installed on phones one can easily discover where they are and get directions to locations whether in an emergency or not.

### **Potential Benefits:**

The benefits of the GPS tracking device and navigation system have been enormous and highly significant. From the price range of the GPS, its affordability to its use by Healthcare officials and tourists, the benefits of the GPS are evident in our world today. So much has improvement has occurred with this product and while we are only in 2012, one is left to wonder about the full potential that this device could achieve in another 10 years.

Firstly, in the area of military achievement, the GPS has been phenomenal in helping military services both abroad and in the United States to solve problems, locate people of questionable character. The US Government in fighting the Gulf War used the GPS. The creation of this device was actually to their own advantage as they were able to track down military troops. In an essay on the Social Impact of the GPS, Ann Holms stated that ‘the point accuracy and the

successful navigation through an otherwise anti-navigational terrain illustrated the power of the arising GPS technology'. This is just one example of the importance of the GPS in the military. Its invention is of great importance and is used regularly in the military.

Another benefit of the GPS is that because it is affordable by most people, it is generally accessible. People do not have to worry as much if they get missing because they probably have a GPS system installed on their phones or other electric devices such as tablets. They would be able to find a nearby location where they could go get proper help. It is also helpful to tourists in a new country, for example Car rental companies install the GPS system into the cars and as a result the tourists would not feel completely lost in a new place.

The National Academy of Sciences in 2009 estimated that 'over 100,000 jobs were created in multi-million dollar companies. Job creation is another advantage of the GPS. As with other important technological breakthroughs, the increase in jobs is phenomenal. From popular GPS producing companies like Tom-Tom employing several people to work on delivering good products to top Businesses employing experienced people to monitor their GPS systems and usage.

The GPS is also useful for security purposes. It is used by the Army to ensure the safety of their troops both at home (the U.S) and abroad. The GPS is also used by many businesses to keep track of activities going on in the transportation department of their companies. For example, they would be able to find out if company vehicles are being used for other things. The GPS can also help to reduce theft. It is also used to track down theft activities. If a car or a phone is stolen, information on the GPS stored in either of these gadgets can be retrieved and used to track down where either the phone or the car may be.

Lastly, as unlikely as it may seem there have been innovations in the health care sector that are working through the aid of the GPS. The GPS is used to help people with Dementia, tracking devices are provided to people with Dementia so that in the case of them wandering about, their families would be able to track them. For example shoemakers Aetrex Worldwide created shoes for patients with dementia or Alzheimer's and so if they wander off or go missing, a member of the family receives this information on their phone and they could go out to look for this patient. This gives them a feeling of security that their family members.

### **Legal, Ethical issues, Security concerns and Social Problems.**

As with any other popular technological devices the Global Positioning System has its legal and ethical issues as well as security concerns to deal with. First off is the issue of security, although the GPS provides protection for people, the question of people's privacy comes into question. This is because for example through a mobile phone one can tell where a person is, where they went in the past and where they would be going. If this information is in the wrong hands then the security of a good number of people are at risk. If a hacker collaborates with a thief and they are able to tap into someone's activities from their GPS, the person could get robbed or be put in high risk. This could also happen in a business. Also there is also the question of how much information the GPS should be made to tap into. These GPS devices store a lot more than meets the eye. While everyday users know that the basic function of a GPS is to give direction from one place to another. Most people are not aware that the GPS actually stores a comprehensive list of activities on it. For example, GPS devices can store gas mileage and sometimes even record how many times a person stops in a particular place. These devices are at the mercy of criminals who can use at their own disposal and for their own advantage.

There is also the question of how ethical these devices are. This is because you can question the right to personal privacy if in the case of an emergency or an intended crime; an individual's information can be gotten through their GPS. Also there is also the issue of people stalking others if they have access to their information.

Secondly, the use of GPS in health care to help with Dementia is questionable. Some people do not agree with this style of treatment for patients. In an article, 'Who Should make the decision on the use of GPS for people with dementia?' published in the Aging and Mental Health Journal (January 2011), it says that some people feel that using tracking devices for people with Dementia is 'stigmatizing, dehumanizing, and threatening personal autonomy'. This article explains that while the use of tracking devices is good in everyday life it may not be best for Dementia and Alzheimer's patients. In conclusion, this goes to show that people have different ethical standards and an attempt to satisfy everybody would be futile. However, companies and individuals are to be cautious when dealing with technological tools.

### **Conclusion:**

The Global Positioning System has had tremendous impacts in the world and nobody knows what the future may bring. From people travelling with huge bundles of maps to what we now see today with the GPS technology. People have in-built GPS devices on their phone and for a fast paced world this is very effective as people are able to find their way back to their focal point. It is also important to note that the GPS is spreading widely all over the world and while it is popular in many countries, some countries still do not have this technology at their fingertips like in North America. Hopefully, the future would bring with it technological expansion. On the issue of ethics and security by using the GPS, this topic would always go back and forth.

However, the important thing is to be cautious and as an individual do what you feel is best for you.

## References:

Admin. <http://www.gpscellphones.org/importance-of-gps-cell-phones/>

Retrieved February 28, 2012.

This article talks about the importance and usefulness of having a GPS on your cell phone. It goes into detail to describe the pros and cons of this device.

EBSCOhost: Who should make the decision on the use of GPS for people with dementia? .

(n.d.). *EBSCO Publishing Service Selection Page*. Retrieved February 28, 2012, from <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&hid=11&sid=bc506108-a4c4-4d34-aa6c-b9df98c8b352%40sessionmgr13>

This source was useful because it gives insight to people with dementia and how GPS sometimes is used to find them. It raises questions about whether this is ethical or not. This source was useful because it helped to understand some of the ethical issues raised when dealing with the GPS.

GPS shoes keep elderly safe. (2012, February 7). *Investor's Business Daily*, A02. Retrieved February 28, 2012, from Banking Information Source. (Document ID: 2579411411).

This source was kind of a case study , highlighting the advantages and disadvantages of using the GPS Device for Dementia patients. It also gives an example of shoes that were created particularly for this purpose.

Landau, R., & Werner, S.. (2012). Ethical aspects of using GPS for tracking people with dementia: recommendations for practice. *International Psychogeriatrics*, 24(3), 358-66.

Retrieved February 28, 2012, from Health Module. (Document ID: 2567721041).

Matthews, D. (n.d.). Importance Of Using GPS Advisor Tracking In A Business. *SG &*

*Singapore Map - Singapura, Singapur, Singapore Information*. Retrieved February 28, 2012,



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[http://www.streetdirectory.com/travel\\_guide/15036/gadgets/importance\\_of\\_using\\_gps\\_advisor\\_tracking\\_in\\_a\\_business.html](http://www.streetdirectory.com/travel_guide/15036/gadgets/importance_of_using_gps_advisor_tracking_in_a_business.html)

This is an important source because it highlights the importance and the usefulness of the GPS in businesses and also in our everyday lives as well. It also raises ethical issues which helped to come up with some points that were useful in discussing ethical concerns and issues.

National Academy of Sciences (2009). The Global Positioning System: The Role of Atomic Clocks. Retrieved February 28, 2012 from <http://www.beyonddiscovery.org>

This source was instrumental in helping to provide information about the history of the GPS. It also summarized the important events in the History of the GPS and made it less complicated to understand.

1985., CA., & Colorado.. (n. d.). Global Positioning System - Wikipedia, the free encyclopedia. *Wikipedia, the free encyclopedia*. Retrieved February 28, 2012, from [http://en.wikipedia.org/wiki/Global\\_Positioning\\_System](http://en.wikipedia.org/wiki/Global_Positioning_System)

The Wikipedia source was instrumental in providing information about the evolution of GPS and the History. It explained the meaning of the device and how it came about which was essential to understanding the meaning and importance of the GPS. It also helped me to write the first part of the paper.