SE3910 Individual Paper

Pick a technology and write an analysis of the technology’s evolution and generate a medium term forecast of where the technology will be. In your paper, consider the following concepts, but tailor them to your particular technology and the story you want to tell about it:

1. **Describe the technology** and include pictures, drawings, or other illustrations as appropriate.
2. What are the **needs** the technology fulfills – think back to SE3100 when you did a capability needs analysis. Define and/or model as appropriate the needs (wants) the technology fulfills. What functions does the technology provide? How does it fit into its environment?
3. How has the technology **evolved** over its history? Research when the technology was first introduced, how it was introduced, and its major milestones over the technology’s lifetime.
4. What technical advances in related or component technologies enable this technology? What knowledge is associated with the development of the technology? (e.g., mechanical knowledge, nuclear, …)
5. Are there **variants** of the same technology? If so, what are the differences/similarities of those variants? (e.g., automobile technology, there are variants in engine type, transmission, etc.). Variants indicate either different needs, different prioritization of needs, or different solution approaches to the same problem.
6. Explain the mechanisms and timing of how the technology **diffused** through the market, military, or society? How long did it take to be adopted?
7. What has been the growth rate of the technology? Define appropriate measures of effectiveness and/or performance and determine its growth rate. For example, for automobiles you could look at mpg, average service life, reliability, and other relevant measures.
8. Forecast likely scenarios of where the technology will be 10 – 20 years from today; and/or create a technology roadmap of where the main stakeholders would likely want the technology to be.

In this assignment, you may select **any technology**. You are not limited to military technologies because of the lack of data and confidentiality that surround them. I suggest that a successful paper is one in which you are *interested in the technology, are familiar with the technology, and feel confident that some data is available via research on the topic.*

## Deliverables

1. A single technical paper of approximately 2000 words, which is approximately 5-8 pages.
2. A short presentation using Prezi, an alternative to Powerpoint. Prezi is online and available free for academic purposes. I’ll discuss Prezi in class, and I see this as an opportunity for you to learn an alternative to Powerpoint.

## Due Dates

1. Notification of technology topic, to be approved by the instructor – July 19, 2012.
2. Paper submitted via Sakai – September 3, 2012.
3. Prezi link submitted via Sakai – September 7, 2012.

## Learning Objectives

The purpose of the paper is twofold:

1. Each student does an in-depth examination of a technology applying ideas in the course on technology, technology evolution, diffusion, assessment and forecasting.
2. Each student demonstrates critical thinking and proficiency in technical writing. See Paul and Elder’s Guide to Critical Thinking.