1) OMSCS program enables a diverse population to enhance their skills through the pursuit of a Master's degree. The salient features of this program are flexibility, accessibility, cost and quality. The program comprises of courses offered through the Massive Open Online Course (MOOC) format. MOOC aims at reaching a wide audience through open access via the web and thus enables OMSCS reach a bigger audience when compared to traditional on-campus programs. In addition, the University is able to keep the costs involved to a minimum, enabling the students to pay a smaller tuition fee when compared to on-campus programs. The lectures are all pre-recorded and can be watched anytime which offers flexibility to the students. Moreover, anyone with a good internet connection can participate in the program and achieve full benefit. The high quality of professors teaching the courses also makes the standard of instruction excellent.

   However, the same qualities that are positive also have a negative effect on the program. Due to an increased number of students in each class, the faculty is not able to give individual attention to the students. For example, no feedback is given to students on a programming assignment on ways to improve the same. This limits students from learning the best way to do a certain task and doesn't enhance the overall learning. Also, due to unethical practices followed by a few students, the instructors don't provide solutions to homework's. In addition, if someone lives in a poor neighborhood and doesn't have access to a good internet connection then they are at a disadvantage in pursuing this program. A MOOC program should be more of an equalizer rather than leveraging the strengths of some community, though this was not intentional.

   The program can be structured by enforcing stricter policies and procedures for students that cheat and deploying innovative techniques to detect plagiarism. This would enable the instructors to release solutions to homework's. Also, based on students' academic performance points could be awarded that they can use to bid to get one on one time with TA's and Professors.

2) Google Search Engine is an example where political motivations affect the design of technology. There are many stakeholders interested in this technology such as Google, users, advertisers, internet service providers (ISP) and competitors. The company wants all internet users to use their search engine and has taken measures to enable internet access to remote parts of the world where there is no internet access. This is in direct conflict with the motivation of internet service providers such as Comcast, Verizon and AT&T.

   Users want quick access to relevant information based on their search criteria and expect this service to be free of cost. However, they want to maintain their privacy while doing online searches. Google's design has evolved in such a way that it monitors what users search for to better target them with relevant advertisements.

   The advertisers pay top dollars to make sure that their content comes up at the top of the list in all relevant searches. Until a few years ago, Google search was exclusively used to search for something based on keywords. For example, if someone wanted to purchase an item they would either go to Amazon or to the website of a retailer that is selling that product. The user's motivation was to purchase the item at the best price and get it as soon as possible. This conflicted with Google's motivation that everyone use their search engine for everything. Therefore, they changed their design so that when someone searches for an item in Google search, the option to buy the same item through Google express appears automatically. This way a user can use Google search for most of their needs. Similarly, the design has evolved to accommodate airline, hotel searches to mention

a few. However, this action conflicts with the motivation of advertisers who sell that particular item or service. As the owner of the search engine, Google can always suppress the advertisements from other companies to promote their own products and services.

Competitors such as Yahoo, Microsoft want to promote their search engines and earn advertising revenue. To combat this, Google has designed its search engine in such a way that it is faster, easy to use and accessible easily though mobile devices.

3) As a Piazza user I always feel overwhelmed with the number of messages that are there to review. In addition, when taking multiple classes I have sometimes tried to post a message in one class page that was intended for another class. From a participant point of view, I feel like Piazza doesn't consider that the user might be performing different tasks when trying to post a message. Therefore, my first recommendation would be that when a user enrolls in multiple courses each course name is colored with a different color and displayed accordingly in the main menu. The feedback from the system has to be strong enough so that the user knows that they have indeed selected the right course. This could be accomplished by displaying the course name and number in big, bold font and in the same color it was displayed in the main menu.

   With an overwhelming number of messages, I always feel like there are too many messages to review and can't find something quickly when I need them. I would like to redesign this feature so that the interface is simple, easy to use and consistent with similar applications. Every time I look at a message I would like multiple options to customize it - mark it as viewed, add it to favorites, leave it as unread and archive the message. I also would like to create folders with custom names and store the messages in the appropriate folders. For example, I want to be able to create a folder called "Design Principles" and store messages under that folder anything that's related to that topic. Overall, I would like to have a customized view to organize the messages. Such a customized view will also transfer the cognitive ability from the user to the interface. For example, I don't have to remember what messages I reviewed under a certain topic, if I had already organized them accordingly, all I have to is go to that folder and review the same.

4)

The paper I have selected is – Understanding the Cost of Driving Trips authored by Caleb Southern, Yunnuo Cheng, Cheng Zhang, Gregory D. Abowd.

As someone who drives a lot every day I felt like I can benefit significantly from this study, hence I chose this paper.

The paper discusses the different variables involved in calculating the cost per trip when driving. The Total Cost of Ownership for a vehicle includes both fixed costs and per-trip costs. The fixed costs include time-value depreciation, insurance, taxes and fees, and the per-trip costs of fuel, per-mile depreciation, and maintenance. To calculate the trip cost the authors developed a system that comprises of a 1) per-trip model of the Total Cost of Ownership for a given vehicle; and 2) an implementation of the model on a mobile device for use in a vehicle.

The inputs to the model are fuel used and the distance traveled for a given trip. The output is the estimated total cost of ownership applied to that driving trip. The depreciation is estimated using the data from Kelley Blue Book, a commercial database that provides locally estimated resale value of vehicles in the United States. The per-mile depreciation is estimated by comparing the current value of the vehicle to the value of the same vehicle with an odometer reading of 10,000 miles higher. The difference in price is then divided by 10,000 to get the per-mile depreciation. The fixed costs for each driving trip is calculated by dividing the estimated total miles driven in one year by the total annual fixed costs.

The system is implemented using an Android phone and a Bluetooth-enabled On-Board Diagnostics (OBD) interface to the vehicle. The OBD device is used to indirectly determine the fuel usage and to detect the start and stop of each driving trip.

Fourteen participants were selected to evaluate the impact of the trip cost meter system on their awareness about the total cost of their driving trips. Prior to using the trip cost meter, most participants exhibited a poor understanding of the total cost of their driving trips. After using the trip cost meter most of the users had increased knowledge of the cost of the common driving trip. In fact, some were able to transfer this knowledge to other driving trips, for which they had not used the trip cost meter. Three participants changed their transportation behaviors after using the trip cost meter and reported that the cost was the main factor for their decision.