1. **Identify your project idea.** Succinctly (3-5 sentences) **describe your project**, how you expect **your system to be used**, by **whom,** and the **context** under which you expect it to be used. Remember, you must be able to design, prototype (not fully implement), and evaluate this project within the timeframe of this course.
2. **Literature Review/Competitive Analysis** (4 resources, 4-5 sentences for each resource). You will search for and review 4 sources that are relevant to your project. These resources may include: academic articles, articles from the popular press or product reviews that are available online at sites like Amazon.com or iTunes. Your analysis of these articles should include 1) **strengths of the application/idea**, 2) **weaknesses of the application/idea**, 3) **how your project could improve upon the ideas presented by these articles**. Please include the references to your resource in the document you submit. USE APA FORMAT

Name ideas:

Theo Thompson
1 InfoPort
2 InfoPing
Antonio Gurgel
1 Threshold
2 Gress
Kei Murase
1 InfoGate
2 Beaconnect
Albert Ma
1 BeCon (like bacon)
2

The Idea:

We are designing a NFC (Near Field Communication) information portal to complement the real-life "portals" in front of places of business. Passing customers scan it with their mobile devices and receive specific, real-time information about their environment.
The sending mechanism: the beacon sends *an instruction* to the phone, which acts on it as appropriate. If anything, it acts as a QR code sent over radio, without the hassle of positioning a camera to capture it (no need for good lighting or direct line of sight).

Audience:

The device will be sold to businesses who wish to serve relevant information to their consumers that complements their experience at the business.The specific design scenario our team is focusing on is restaurants, so our target audience would both be the actual business (B2B), as well as the end consumer of that business (B2C).

Context:

The idea focuses on the entering and exiting of a business. When customers enter the business, they will have instant access via smartphone to their reservation details, current menu options, and bonus content for returning customers. They would be able to instantly gain information which would help expedite and enhance their overall dining experience.

Deliverables:

Hardware: Beacon
Software (server-side): Configuration utility for beacon (to be used from computer or mobile)
Software (client-side): Smartphone app to communicate with beacon

Sources:

Cheng, R. (2014, February 26). When will retailers jump on the iBeacon bandwagon? - CNET. Retrieved February 10, 2015, from http://www.cnet.com/news/when-will-retailers-jump-on-the-ibeacon-bandwagon/

This article outlines the combination of location sensing beacons with the ability of retailers to push relevant information to their customers' handsets. It discusses Urban Airship, a company specializing in push notification reach, has been working on ways to get retailers to notice the possibilities created with these new proximity based beacons. Specifically in the article it states how this technology could be used to understand people's interests while walking through a store without the person actually having to buy anything. It also outlines that a programmer can have the beacons send different information to different people based on the data in their phone. One weakness of this technology as outlined in the article is that there are very few active programs using this technology, as most of the deployments are trial runs. We can improve on this platform by bringing it to a smaller, more intimate interaction point such as a restaurant. Bringing this technology into the daily lives of consumers can be a door to changing the way we interact with our environment.

Gruman, G. (2014, July 22). What you need to know about using Bluetooth beacons. Retrieved February 10, 2015, from http://www.infoworld.com/article/2608498/mobile-apps/what-you-need-to-know-about-using-bluetooth-beacons.html

This article deals with the advantages and disadvantages of using Bluetooth beacons. Since Beacons use BLE radio to detect other nearby BLE devices, iPhone, Smart phone, and in many higher-end Android users can access to information without specialized scanners because recent mobiles includes BLE technology. However, the weakness of using beacon is management issue. Recently, common management protocol doesn't exist, so vendors can only release their own beacon APIs. Moreover, vendors try to establish market share, they tend to avoid building support system for competitors. Throughout our project, we focus on a management method that being able to deal with multiplatform.

Danova, T. (2014, October 23). BEACONS: What They Are, How They Work, And Why Apple's iBeacon Technology Is Ahead Of The Pack. Retrieved February 11, 2015, from http://www.businessinsider.com/beacons-and-ibeacons-create-a-new-market-2013-12

This article summarizes the state of beacons as of October 2014. Namely, it focuses on Apple's iBeacon as the leader within that technology. We already have a leg up on our project, seeing as the article reports: "Consumers seem receptive to beacons as a way to enhance their in-store shopping experience". They would likely have the same attitude at restaurants. However, Apple's weakness is not having manufactured a physical beacon of their own, and instead having built the functionality into all of its iOS devices. Moreover, iOS users have to enable location services. We seek to make our implementation platform-agnostic, as well as less demanding permission-wise.

Smith, M. (2014, March 28). The concept restaurant of the future: IBeacons, motion detection and smartglass service (video). Retrieved February 11, 2015, from http://www.engadget.com/2014/03/28/restaurant-of-the-future/

This article is an example of how the beacon can be used in a restaurant which includes 2 way communication between the restaurant and the customer. The existence of this system in use demonstrates proof of concept. The weakness of how this app was used in the restaurant was the amount of customization that went into fitting it in with their futuristic theme. The way the app was described in the article included limitations such as being exclusive to the Apple IOS and included a specific theme built into the framework that would not allow it to be widely used. Our concept would include a more minimalistic, efficient, customizable framework that could be applied to multiple businesses at a lower development cost.