TouchBadge

An Internet Connected Lanyard for Conferences

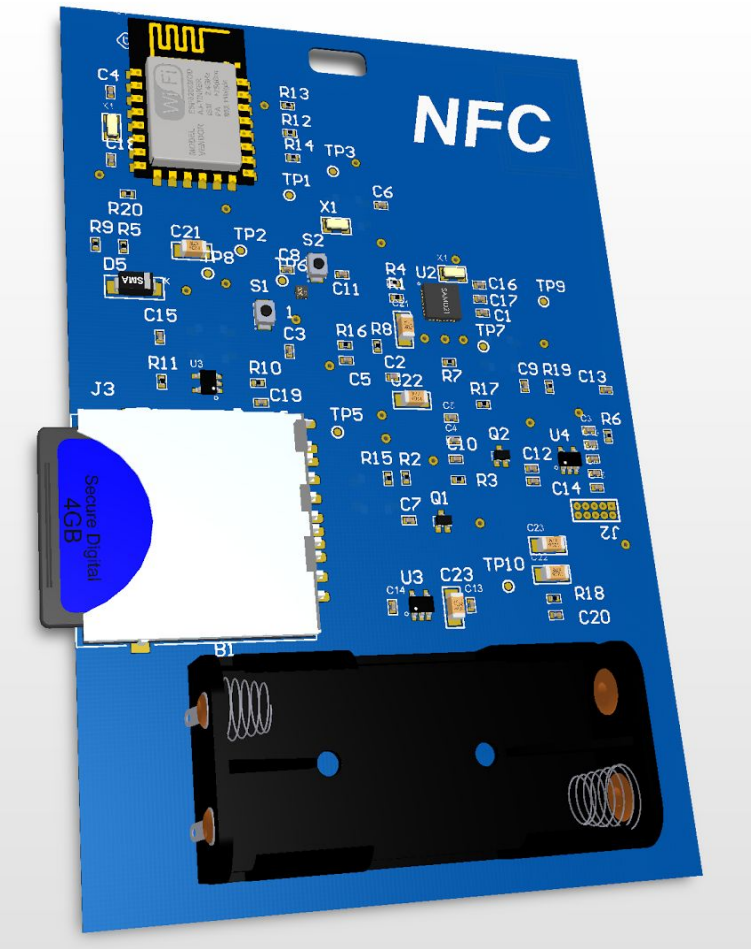

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Table of Contents

Introduction

TouchBadge is a new generation of event badge. Existing event badge technology is based on twentieth century technology like magnetic stripes and barcodes. These technologies require separate readers, take time to process, and make the act of sharing contacts a single direction transaction. Only the event booths are able to collect contact information; person-to-person networking is still done with business cards or manually entering contact information into a smartphone.

What TouchBadge aims to do is reduce the time and complexity of obtaining and sharing contact information through your event badge. It will do this through the use of an electronic badge capable of Near-Field Communications (NFC), Bluetooth, and WiFi. Contact transfer will happen through a bumping gesture in which two badges are touched together. For the first time, attendees will be able to network using the same technology that the presenter booths have. Additionally, TouchBadge will integrate your obtained contacts with your Customer Relationship Management (CRM) platform to allow you to quickly leverage your event experience.

Behind the TouchBadge will be a web app built with both organizers and attendees in mind. For organizers, it includes badge registration, badge troubleshooting, as well event statistics (e.g. popular presenters). It will also allow attendees to enter and update their contact information, see contacts they've obtained at this event and past events, and export contacts to external services like their address book, or CRM platform of choice. Along with the web app, a mobile app for interaction with the badge while on the event floor will also be available.

Summary of Stakeholders' interviews

To obtain insight into requirements for the project we conducted interviews with a group of people. All of the interview subjects are either closely related to the development of the project or would be potential users of the project when attending future events. Our interview subjects were, Daniel deLaveaga (Chief Operating Officer, Breadware, Inc.), Vivek Bhardwaj (Web Developer, OCG Creative), Evan Grill (TouchBadge Team Member), and Eily Irwin (Director, ASUN Inkblot Marketing).

Daniel deLaveaga

Daniel deLaveaga is the Chief Operating Officer for Breadware, Inc., in Reno, NV, the project sponsor and hardware partner. In his role as the project sponsor, his interview responses gave us the bulk of the initial direction for the project. His interview was conducted via email, so his responses are paraphrased.

"Describe the badge system for the most recent conference you attended. What did you like about the experience? What would you like to see improved?"
Daniel described the general lack of automation with today's current technology surrounding event management. The technology used at conferences today is the same technology used ten years ago, creating frustrations from many users. Daniel discussed the main improvement being ease of workflow for consumers using the TouchBadge.

"What impact do you believe the project can have on Events/Conferences?"
Daniel believes that the project can have a large impact on events and conferences. With TouchBadge, the entire workflow of sharing contacts completely changes. Now, users are able to easily share information with each other and at the end of the conference export it to any platform that makes their process easier.

"Describe a hypothetical interaction you'd like to have with a smart badge."
Daniel's interaction that he would most like to see describes the ease of user between sharing contacts. The main priority would be to make the entire process easy, and when contacts are shared the badge flashes an LED or vibrates to notify the user of a successful share.

"When you envision a smart conference badge, what feature stands out to you as the most crucial?"
Daniel described the "complete experience." With this, the smart badge would be any badge that ties all the missing parts of today's badge technology together. For example, instead of sharing hundreds of business cards, and then spending hours to input these contacts the TouchBadge would make this process as easy as exporting to SalesForce.

"Once you've finished the day/conference, how would you like to see your newly obtained contacts be stored? (e.g. added to phone contacts, available as an importable file for third-party software?)"
Daniel suggested the ideal way would be the ability to export to any popular CRM such as SalesForce.

"What external services would you like to see us integrate with?"
SalesForce.

"Beyond simple contact information (e.g. name, phone number, address) what type of information would you be willing to share, or want to obtain from other conference attendees?"
Anything pertaining to business relations such as business name, position, best way of contact, etc. However, this could be customizable based off what the conference is for.

*"Would you like to see the system update in real-time or would a syncing process at the end of the day/conference be sufficient? *Note that this may be more resource intensive on your mobile device."*

If the project utilizes a mobile app, then it would be far less confusing to the user if the app was updated in real time. Then the app could push to the cloud periodically (e.g. hourly). If the mobile app isn't connected then the badge would have to be connected at the end of the day to sync the contacts.

"Would you like to use your badge as a way to redeem vouchers provided by event managers for items such as coffee, bus fare, or food? If so, what companies would you like us to try to partner with?"

This would be ideal, however the overhead associated with doing this may be out of scope for the team. It would be great to associate with any vendor participating with the conference.

Vivek Bhardwaj

Mr. Bhardwaj is a Web Developer for OCG Creative, in Reno, NV. His interview helped team understand the perspective of an event attendee as Mr. Bhardwaj had recently attended the Adobe MAX conference. Also, he gained valuable information from those he networked with in regards to the viability of the TouchBadge.

"Describe the badge system for the most recent conference you attended. What did you like about the experience? What would you like to see improved?"

At the Adobe Creative Conference, they took my ID, name, and the name of the company I work for, and they scanned it into a system and handed me a badge. On the badge was my contact information. When I went to check into a session, they'd scan my badge for admission, and if a booth wanted my information, they could scan my badge using NFC on their phone. It was very convenient and interesting. I'd like to see app compatibility and not having to go to a check-in booth.

"What impact do you believe the project can have on Events/Conferences?"
It would make things less awkward, because a lot of people at networking events don't seem to want to talk to each other. With the TouchBadge, you could just bump badges with people and then contact them later. It would help introverted people network more easily.

"Describe a hypothetical interaction you'd like to have with a smart badge."
As an example, I would meet with a person, do a short introduction, and then ask them to bump badges together and connect on LinkedIn. We'd tap our TouchBadges together and then could continue our conversation without worrying about the hassle of getting and saving each other's contact information.

"When you envision a smart conference badge, what feature stands out to you as the most crucial?"
I'd like to see a companion app that stores the contacts I receive from another person when we bump badges.

"Once you've finished the day/conference, how would you like to see your newly obtained contacts be stored? (e.g. added to phone contacts, available as an importable file for third-party software?)"
It would be nice to have it in an app so that you can select whoever you'd like to connect with versus those you wouldn't want to connect with through a LinkedIn profile link for example. I'd also like to be able to export basic contact information like e-mails and phone numbers.

"What external services would you like to see us integrate with?"
LinkedIn, Twitter, Instagram, and other popular social media services.

"Beyond simple contact information (e.g. name, phone number, address) what type of information would you be willing to share, or want to obtain from other conference attendees?"
A website and maybe a company's address would be ideal to have stored on the badge. Also, a picture and a short biography much like how it is on any social media site.

*"Would you like to see the system update in real-time or would a syncing process at the end of the day/conference be sufficient? *Note that this may be more resource intensive on your mobile device."*
I'd like to see both methods implemented, with the syncing method as default. I think users should have a button in the settings menu that lets them switch between the two modes. Also, you should integrate with power saving mode on phones to keep battery usage down.

"Would you like to use your badge as a way to redeem vouchers provided by event managers for items such as coffee, bus fare, or food? If so, what companies would you like us to try to partner with?"
Yeah, that sounds like a fantastic idea. You should try to partner with fast-food places like McDonald's, In-N-Out, and cafes like Starbucks or other places. You might want to have the vouchers loaded to user accounts through the app instead, so that they can be scanned. That way, you wouldn't need to build and deploy a separate reader to companies you partner with.

Evan Grill

Evan is a TouchBadge Team Member. He was chosen to interview for the team due his representational passion and knowledge of the course of the project. The team believes in the project and Evan carries these beliefs and wants to highlight what the project can become.

"Describe the badge system for the most recent conference you attended. What did you like about the experience? What would you like to see improved?"

Admittedly it's been some time since I last attended a conference, CES 2006, but my understanding is that the technology hasn't changed much. We had magnetic stripe cards that sat in a holder behind a paper slip with our name and company. At booths, presenters would ask to swipe our cards, which gave them our contact information, but the process was not reciprocal. Information I received from the presenters was in the form of printed material, which I had to carry with me. Interpersonal networking was handled through the exchange of business cards. I'd like to see these processes be unified and democratized into a single product like the TouchBadge.

"What impact do you believe the project can have on Events/Conferences?"
By putting contact sharing in the hands of attendees and presenters in a unified platform, conferences can become better networking environments.

"Describe a hypothetical interaction you'd like to have with a smart badge."
I imagine myself meeting both presenters and fellow attendees and being able to swap contact information without having to pull things out of my pockets or having to carry literature around in a tote bag.

"When you envision a smart conference badge, what feature stands out to you as the most crucial?"
For me, easily being able to access the data stored on the badge, either in real-time or at the end of the day is crucial. I'd like to be able to push my contacts to an external resource easily either through a single downloadable file, or a simple "Export" button.

"Once you've finished the day/conference, how would you like to see your newly obtained contacts be stored? (e.g. added to phone contacts, available as an importable file for third-party software?)"
I don't think putting contacts directly into my phone contacts is a good idea. I don't really know the people I meet at a conference, I don't really like the idea of seeing their name next to my

wife and parents in my address book. Making the contacts downloadable or exportable directly would be ideal. Additionally a view with names, company, and a series of clickable links for social media might be a good view too.

"What external services would you like to see us integrate with?"
I think the most important services will be CRM platforms. SalesForce is a major player, but no single platform is dominant, so supporting a few would probably be good.

"Beyond simple contact information (e.g. name, phone number, address) what type of information would you be willing to share, or want to obtain from other conference attendees?"
I would be willing to share a link my LinkedIn profile as well as links to my GitHub and other professional resources.

*"Would you like to see the system update in real-time or would a syncing process at the end of the day/conference be sufficient? *Note that this may be more resource intensive on your mobile device."*
That would depend on where the project goes. If a mobile app is developed, then it would make sense for it to update in near real-time. The user could be allowed to do a end-of-day sync process instead if they choose. That would limit use of battery for both the badge and the device.

"Would you like to use your badge as a way to redeem vouchers provided by event managers for items such as coffee, bus fare, or food? If so, what companies would you like us to try to partner with?"
This was an idea that was brought to us by Daniel at Breadware. It would be an amazing extension of the product, but is much more difficult to develop as it will require establishing relationships with potential vendors before bringing the product to event organizers.

Eily Irwin

Eily Irwin is the Director for InkBlot Marketing for the Associated Students of the University of Nevada (ASUN), in Reno, NV. She recently attended the Adobe MAX conference in Las Vegas,

NV, has given Team 11 valuable insight into the mind of a consumer. She is passionate about marketing and information systems and is knowledgeable about constructing a customer base. For these reasons she was ideal to interview for the project.

"Describe the badge system for the most recent conference you attended. What did you like about the experience? What would you like to see improved?"

Badges at the Adobe MAX Conference had a bar code on the back. Conference parties such as sponsors and staff would be able to scan badges to take count of people in attendees, those that received certain prizes, etc. The Conference had an app that held information related to sessions, agenda, speakers, etc. and had a networking function that allowed users to see a list of those in attendance and search by name or company name. The app was cluttered and not introduced well to the attendees, so the networking function was barely used. While information related to registration was stored, it seems that only the name, company name and position related to that company was stored in the app for others to see. Attendees could message other attendees, but other than this functionality, it seems the only real way to network is to look up names on Facebook and LinkedIn.

"What impact do you believe the project can have on Events/Conferences?"
I think the impact would mainly be seen at conferences that are large and more focused on networking. This system would allow people to more easily transfer information and trust that the information would be available later on for reference. Small and large amounts of information alike could be exported, so this would be great for sponsors of the conference in getting new consumer marketing data just as it's beneficial for professionals connecting with other professionals.

"Describe a hypothetical interaction you'd like to have with a smart badge."
Sponsors and attendees to conferences would be able to use the smart badge in order to transfer information from one party to the other with badges. If I'm having a conversation with another conference attendee and would like to give them my information, I could just tap my badge with theirs.

"When you envision a smart conference badge, what feature stands out to you as the most crucial?"

A crucial aspect of the smart badge would be built-in sound to let the user know when information has been transferred, most likely paired with an app notification on the phone.

"Once you've finished the day/conference, how would you like to see your newly obtained contacts be stored? (e.g. added to phone contacts, available as an importable file for third-party software?)"

I would like to see the information stored as a list within the app that could be exported into contacts easily (but not automatically) and be available as an importable file.

"What external services would you like to see us integrate with?"

Outlook, Salesforce, Gmail, LinkedIn.

"Beyond simple contact information (e.g. name, phone number, address) what type of information would you be willing to share, or want to obtain from other conference attendees?"

I would definitely like to see company information and social media information such as LinkedIn, Twitter, Instagram, Facebook and personal website shared with the app. All of this information would probably be attained at conference registration, but this might be accompanied with a disclaimer that the information would be shared through the smart badge system, or the app would allow users to deactivate certain fields that would otherwise be shared.

*"Would you like to see the system update in real-time or would a syncing process at the end of the day/conference be sufficient? *Note that this may be more resource intensive on your mobile device."*

Ideally, I would like to see the system update in real-time to let me know that the information had successfully been transferred.

"Would you like to use your badge as a way to redeem vouchers provided by event managers for items such as coffee, bus fare, or food? If so, what companies would you like us to try to partner with?"

I think the app could automatically create in-app vouchers to places like Starbucks if the apps were integrated, or create credits / free items in a participating company's app.

Requirements Specification

Functional Requirements

The following is an comprehensive list of functional requirements for TouchBadge; it is a basic guide that the team will use to judge their success in the project. It acts as a start to the project, but also provides goals if the team has enough time to pursue them.

Functional Requirement ID	Functional Requirement Level (1 - 3, 1 being high priority)	Functional Requirement Description
FR00	1	The user shall be able to create an account on the system [Website]
FR01	1	The user shall be able to log into the system with user created credentials [Website]
FR02	1	The user shall be able to view past events that he/she attended [Website]
FR03	1	The user shall be able to view all shared contacts and information regarding those contacts [Website]
FR04	1	The user shall be able to share his/her contact with another user by "bumping" the two badges together [Hardware]

FR05	1	The management portion of the website shall give admins the ability to link badges to accounts [Website]
FR06	1	The management portion of the website shall give admins the ability to delete badges to linked accounts [Website]
FR07	1	The management portion of the website shall give admins the ability to create new events / event attendees [Website]
FR08	1	The user shall be able to add contacts on LinkedIn through the interface [App, Website]
FR09	2	The user shall be able to log into the system with linked account credentials (LinkedIn) [Website]
FR10	2	The user shall be able to connect to the badge with a mobile application [App]
FR11	2	The user shall be able to push contact information to the badge [App]
FR12	2	The user shall be able to export their contacts to a CRM of their choice [Website]
FR13	2	The user shall be able to share contacts through email, sms, etc [Website, App]
FR14	3	The mobile application will support event mapping to provide a better idea of where booths are [App]

FR15	3	The badge shall have the ability to hold voucher information, i.e pay for starbucks once [Hardware]

Non-functional Requirements

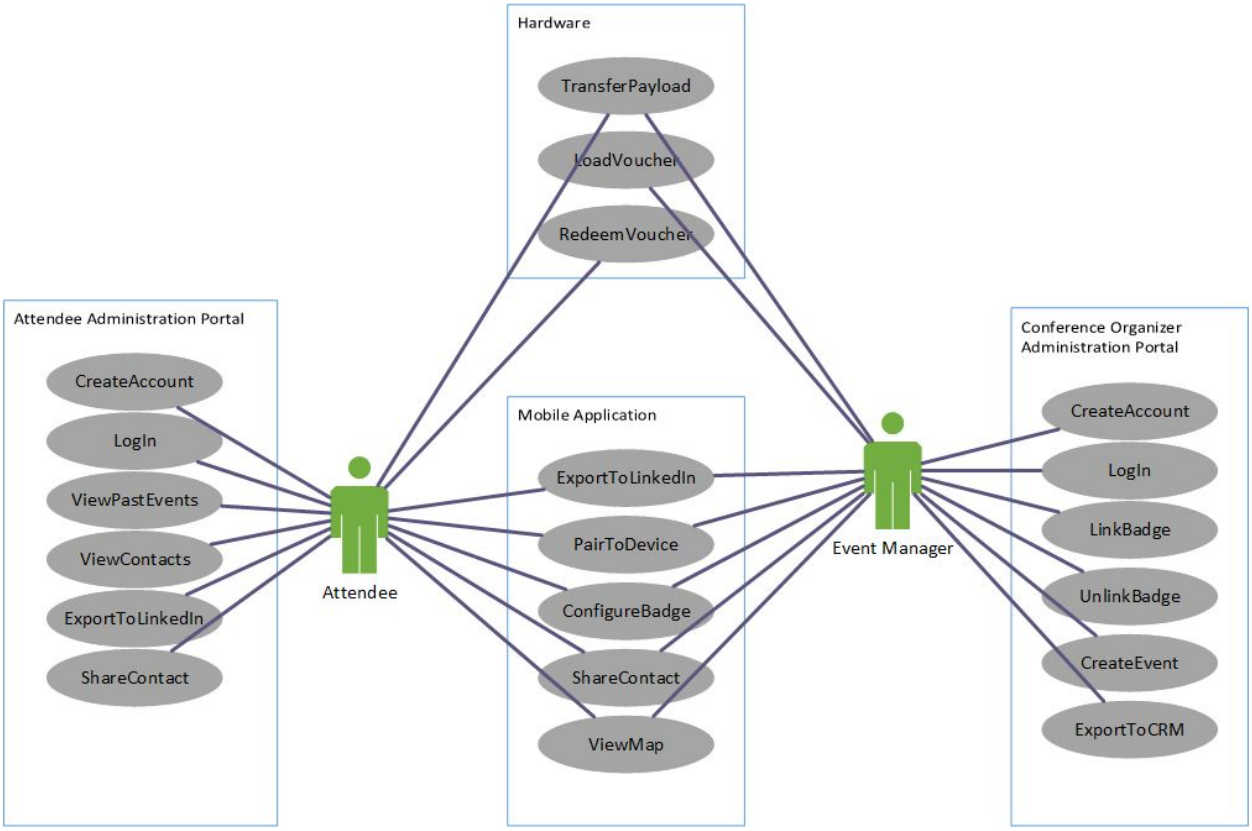
The following is a comprehensive list of non-functional requirements for TouchBadge; it is a basic guide that the team will use to judge their success in the project. It acts as a start to the project, but also provides goals if the team has enough time to pursue them.

Non-functional Requirement ID	**Non-functional Requirement Level (1 - 3, 1 being high priority)**	**Non-functional Requirement Description**
NFR00	1	The TouchBadge shall be implemented through ASP.NET framework using Bootstrap [Website]
NFR01	1	The TouchBadge shall be implemented using Xamarin with C# [App]
NFR02	1	The backend of the TouchBadge system shall be implemented using MySQL [Website, App]
NFR03	1	The TouchBadge interface shall be compatible with Chrome, Firefox, and Edge [Website]
NFR04	1	The TouchBadge interface shall work with mobile browsers (iOS, Android) [Website]
NFR05	1	The TouchBadge interface shall be designed to minimize the user learning curve [Website, App]

NFR06	1	The TouchBadge website management portion shall be learnable by an administrator in under 1 hour [Website]
NFR07	1	The TouchBadge website user portion shall be learnable by a user in under 1 hour [Website]
NFR08	1	The TouchBadge shall be able to share contacts with another badge in under 1 second [Hardware]
NFR09	1	The TouchBadge shall not exceed the size of 4 in x 2.75 in [Hardware]
NFR10	2	The TouchBadge shall be aesthetically pleasing [Hardware]
NFR11	2	The TouchBadge mobile application shall be learnable by a user in under 1 hour [App]
NFR12	2	Creating a new event as an event manager must be accomplished in under 5 minutes [Website]
NFR13	2	All pages must display and be loaded (with good internet quality) in under 2 seconds [Website]
NFR14	2	All screens must display and be loaded (with good internet quality) in under 2 seconds [App]
NFR15	3	The TouchBadge system shall show the status of the vouchers given to each attendee [Website, App]

Use Case Modeling

Use Case Diagram



Use Case Descriptions

To describe how the system as a whole shall be used, Team 11 created four different personas. These personas shall give context to the relationship in how the program might be used on each platform. These personas are the following:

Frank

Description:

Frank is an event attendee. He is passionate about technology and is excited to use new tech. He attends conferences several times a year. The persona typically uses a smartphone in conjunction with a work provided laptop. He likes growing his professional network but mainly attends conferences for other reasons.

Likes:

Frank likes working with technology but is typically too busy to try find a way to make things

work if they're not easily understandable. For this reason, Frank likes:

- Programs that have a rich feature set, regardless the learning curve
- UI's that offer the easiest access to the features

Dislikes:
Frank dislikes working with technology when the benefit is not worth his time figuring things out. For this reason, Frank dislikes:

- Programs that don't allow customizability to exactly what he wants
- Programs that don't have a responsive web design so he can't use his smartphone

Jennifer

Description:
Jennifer is an event manager. She works for a large corporation and typically works on creating and organizing large events for thousands of people to attend. She is interested in finding new ways to make this process easier and to generalize her workflow.

Likes:
Jennifer likes technology that is customizable to her needs. For this reason, Jennifer likes:

- Easy to use technology
- Technology that is fully customizable

Dislikes:
Jennifer has had many bad experiences with other companies that provide far too much overhead for the event staff and the user's themselves. Jennifer dislikes:

- Steep learning curves for users
- Convoluted UI's

Omar

Description:
Omar is a event staff member for Jennifer's company. Omar is experienced with technology and traditional event workflows (event registration, badge distribution, etc.). He is interested in seeing badge technology make his job easier.

Likes:
Omar likes to work with technology and enjoys assisting conference attendees with regards to conference attendance and badges. Omar likes:

- Customer friendly interfaces
- Predictable interactions with technology
- Simple troubleshooting workflows

Dislikes:
Omar dislikes interactions with customers that cause them to get frustrated, especially when the issues are out of his control. Omar dislikes:

- Unreliable technology
- Systems without client-facing troubleshooting options.

Roni

Description:
Roni is an event attendee. She seldom uses technology and typically stays away from computers. She is nervous about the idea of using a “smart” badge for conferences

Likes:
Roni likes:

- Easy to learn software
- Being able to use her phone and stay off her computer

Dislikes:
Roni dislikes:

- Confusing interfaces
- Having to use multiple platforms to share contacts

Use Case ID	Name	Use Case Description	Used By
UC00	**CreateAccount**	The user will be able to create an account on TouchBadge servers to store their shared contacts.	Frank, Jennifer, Omar, Roni
UC01	**LogIn**	The user will be able to log in to TouchBadge servers using their credentials.	Frank, Jennifer, Omar, Roni
UC02	**LogInWithLinkedIn**	The user will be able to log in to TouchBadge servers using their LinkedIn account credentials.	Frank, Jennifer, Omar, Roni
UC03	**ViewPastEvents**	Attendees will be able to view events they’ve attended in the past and the contacts associated with them.	Frank, Roni

UC04	**LinkBadge**	Event managers will be able to link conference badges to user accounts.	Jennifer
UC05	**UnlinkBadge**	Event managers will be able to remove a conference badge from a user's account.	Jennifer
UC06	**CreateEvent**	Event managers will be able to create events that attendees can be added to.	Jennifer
UC07	**ShareContact**	The user will be able to share their networked contacts through a third party service such as e-mail or sms.	Frank, Roni
UC08	**ViewMap**	The user will be able to view a map of a conference which will include the locations of booths and events.	Frank, Omar, Roni
UC09	**PairToDevice**	The user will be able to pair their TouchBadge to their mobile phone using Bluetooth communication protocols.	Frank, Roni
UC10	**TransferPayload**	Users will be able to touch their badges together in order to share contact information between the two.	Frank, Roni
UC11	**ExportToLinkedIn**	The user will be able to export stored contact information to add to their LinkedIn network.	Frank, Roni
UC13	**ViewContacts**	The user will be able to view their shared contact information on the mobile app and website.	Frank, Roni

UC14	**ConfigureBadge**	The user will be able to configure their badge from the mobile app.	Omar
UC15	**LoadVoucher**	Event managers will be able to load vouchers to an attendee's account.	Jennifer
UC16	**RedeemVoucher**	Attendees will be able to redeem loaded vouchers for free or discounted items as determined by an event manager.	Frank, Roni
UC17	**ExportToCRM**	Event managers will be able to export attendee information to a CRM.	Frank

Detailed Use Cases

Use Case: TransferPayload	
Use Case ID:	UC01
Actor:	Attendee, Event Manager
Precondition(s):	Two TouchBadges held by actors have been bumped together.
Flow of Events:	1. The TouchBadges will hold an election to determine a master / slave relationship. 2. The slave TouchBadge will begin listening for data. 3. The master TouchBadge will transmit its stored contact data. 4. The slave TouchBadge will validate the data. 5. The master TouchBadge will begin listening for data. 6. The slave TouchBadge will transmit its stored contact data. 7. The master TouchBadge will validate the data. 8. Both TouchBadges will provide physical feedback to the actors.
Postcondition(s)	Each TouchBadge has stored in its own memory the contact information stored on the other badge.

Use Case: ConfigureBadge	
Use Case ID:	UC09
Actor:	Attendee, Event Manager
Precondition(s):	The actor has paired their mobile device to a TouchBadge using Bluetooth.
Flow of Events:	1. The actor taps the “configure” page on the mobile app. 2. The actor inputs their name into the app. 3. The actor inputs their phone number into the app. 4. The actor inputs their e-mail address into the app. 5. The actor taps the configure button on the app. 6. The app sends the user contact data to the paired badge over Bluetooth. 7. The TouchBadge validates the data.
Postcondition(s)	The actor’s paired TouchBadge has stored the actor’s configured data.

Requirements Traceability Matrix

		Use Cases																
		UC 00	UC 01	UC 02	UC 03	UC 04	UC 05	UC 06	UC 07	UC 08	UC 09	UC 10	UC 11	UC 12	UC 13	UC 14	UC 15	UC 16
Functional Requirements	FR 00	■																
	FR 01		■															
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Initial Snapshots

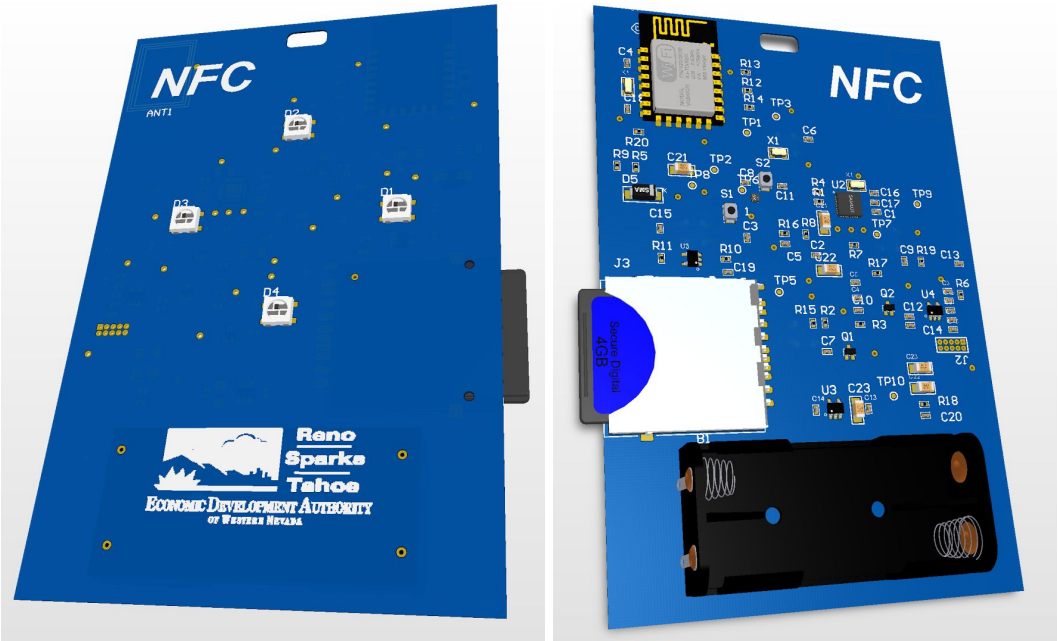

Figure 1: Preliminary mock-ups of badge hardware provided by sponsor. Product front (left) and rear (right) are shown.

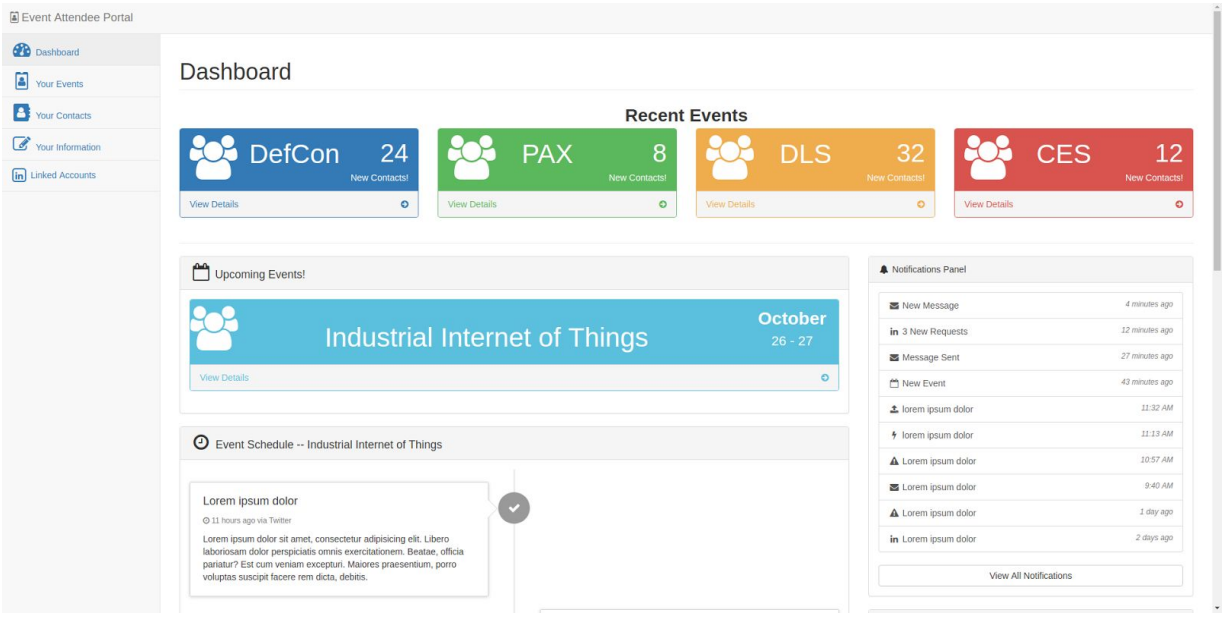

Figure 2: Design concept for Attendee Administration Portal displaying the user's dashboard, where they can find a variety of useful information such as recent events they've attended, notifications, as well as upcoming events and their corresponding schedules.

Figure 2: Mock-up for the home page of the mobile application. This is designed to show the user their TouchBadge's information as well as the next event they are scheduled to attend.

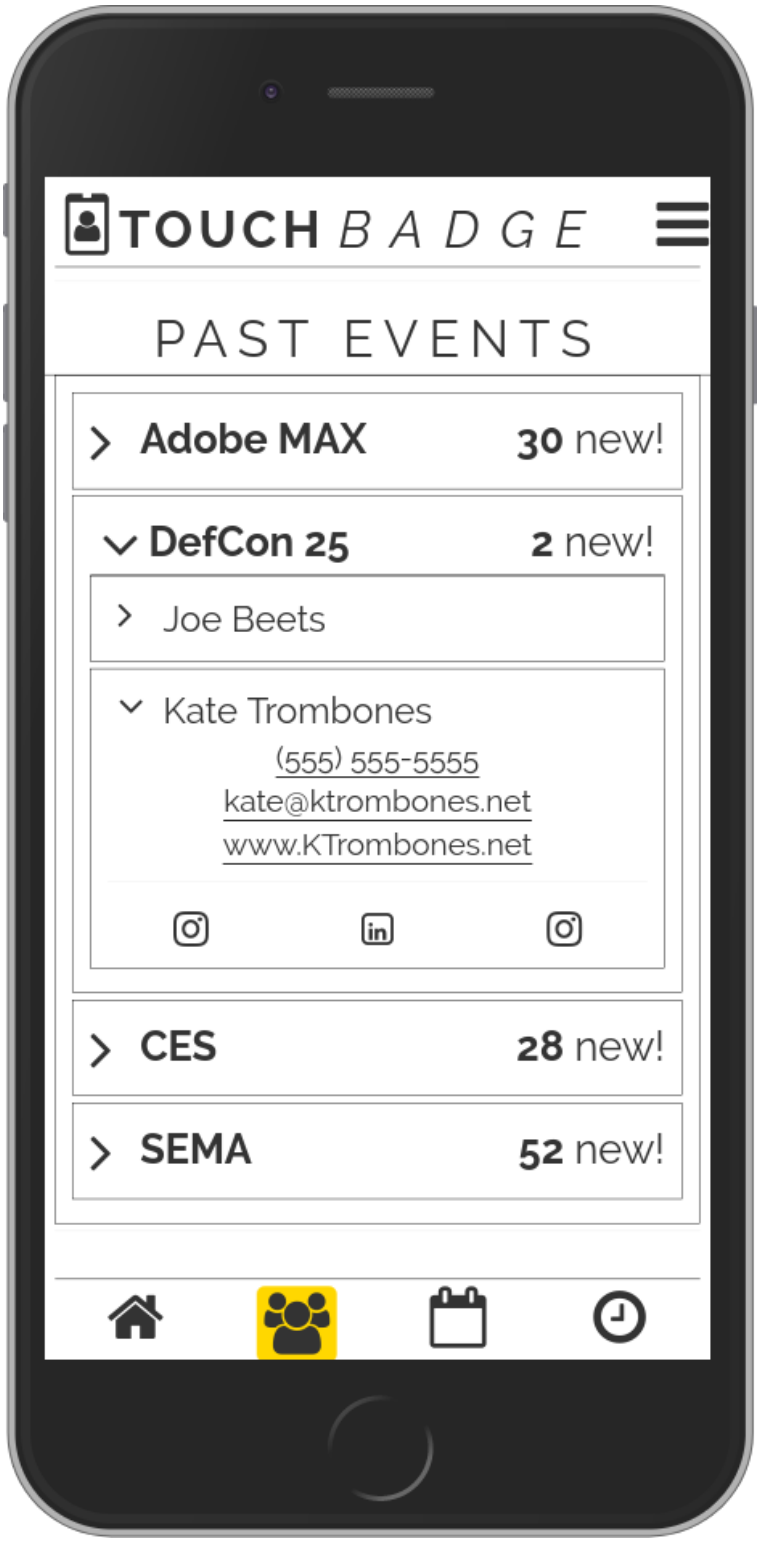

Figure 3: Mock-up of the contacts tab for the mobile application, which groups a user's networked contacts by the event at which they were shared. By tapping on an event, a menu of contacts is shown, and each contact can be tapped to show their information.

Figure 5: The device configuration page of the mobile application will be available through the menu button. Here, a user will be able to pair their mobile phone to a TouchBadge, input their information manually or import it from LinkedIn, and configure their badge.

Glossary

Attendee Administration Portal (AAP)
The attendee-facing website that allows users to register, enter personal contact information, retrieve/export contacts shared with them, etc. Provides some troubleshooting options for their badge (initial registration, resynchronization).

Badge
The lanyard device carried by each event attendee. Contains hardware necessary for interbadge communication, configuration, and export of data.

Bluetooth
A standard for high-bandwidth wireless connectivity. Typical communications range is up to 10 meters.

Bump
The process for interbadge communication. When two badges come into close proximity (1 cm) they transfer to each other the contact information for their wearer. The badges in turn will signal to the user that this interaction has occurred.

Conference Organizer Administration Portal (COAP)
The organizer-facing website that allows the event organizer to create and modify event details, see registered attendees, obtain demographic statistics on attendees, etc. Provides interface for event staff to register badges prior to the event or change out badges in the event of failure.

Conference
See “Event.”

Contact
Personal information about an event attendee including name, address, phone number, email address, etc. Passed to another attendee or presenter through a bump interaction.

Customer Relationship Management (CRM) System
System designed to intake current and potential customer information and track relationships to improve sales. Leading implementations are SalesForce.com, SAP AG, Oracle, and Microsoft Dynamics. (Columbus)

Event
Occasion in which badge technology is used. Includes conventions, conferences, trade shows, etc. Used synonymously with “conference” in this document.

Lanyard
Neck-worn accessory that includes the strap and badge in combination.

Near-Field Communications (NFC)
A standard for short-range communication between devices. Allows for powered two-way communication or low-power single direction communication.

TouchBadge
The title for the complete smart badge solution. Includes badges, websites, and app.

Voucher
An offer provided by the event organizer in collaboration with a third-party that is accessible through the badge. Examples include free or discounted food/drink or transportation.

References

Columbus, Louis. "2015 Gartner CRM Market Share Analysis Shows Salesforce In The Lead, Growing Faster Than Market." Forbes. Forbes Magazine, 28 May 2016. Web. 30 Oct. 2017.

Contributions of Team Members

Evan Grill

Over the course of the project specification, Evan worked on the following items:

- Introduction - **1 hour**
- Glossary - **1.5 hours**
- References - **.5 hour**
- Summary of Stakeholders Interviews - **1 hour**
- Editing and Revision - **1 hour**

Jon Weatherspoon

Over the course of the project specification, Jon worked on the following items:

- Summary of Stakeholders' Interviews - **1.5 hours.**
- Requirements Traceability Matrix - **1 hour.**
- Initial Snapshots - **3 hours.**
- Use Case Modeling - **5 hours.**

Cody Worsnop

Over the course of the project specification, Cody worked on the following items:

- Coverpage **- 0.5 hours.**
- Table of Contents **- 0.5 hours.**
- Requirements Specification **- 2 hours.**
- Summary of Stakeholders' Interviews **- 3 hours.**