Smart tags to increase social interactions at airports

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Abstract  
Airport hosts one of the most diverse segments of travelling population but it is still considered to be one of the least socially interactive place to be. Though it holds great potential of being a friendlier place but social anxiety amongst people refrains them from interacting with eachother. This paper tries to "break the ice" by bringing in the use of color coded smart tags in place of simple handbag tags which try to depict similar interests in people travelling and motivates them to interact with eachother over simple incentives.

Author Keywords  
Social Interaction, Social Connectivity, Social Isolation, Smart Tags, Color coded Tags, Airports, Tangible medium

ACM Classification Keywords  
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous; See http://acm.org/about/class/1998 for the full list of ACM classifiers. This section is required.

Introduction  
People often feel socially anxious at such places and this social anxiety prevents them from interacting with other passengers whom they might like, and it often
results in people spending time alone at airports and feel socially isolated. This paper aims to understand the root causes of this social isolation and hopes to solve this problem from ground up by first analysis each passengers journey at airports, qualitatively understand their experience, mapping their interest, motivations and behaviors. Before trying to increase interactions, we first try understand what a successful interaction is and then adopt the mental model of marketing to sub divide the problem and further define the attributes of our solution. These attributes then describe the features of our solutions by mapping them with possible use and misuse cases.

Understanding the problem
This paper aims to “Increase human interaction and social connectivity among socially isolated people”. In order to solve the problem we first wanted to understand the problem. We divide the problem into two sub problem:

I. Increasing Human Interaction and Social Connectivity

II. Among Socially Isolated People

Social isolation is it’s most brief form is “The experience of being socially separated from others”. Social Isolation can be explicit, when a person is physically separated from others, or it can be implicit, when a person perceives being emotionally removed from the community.

While in modern times, because of advanced technologies, explicit social isolation is not as big of a problem as it was earlier. Implicit social isolation however, is still one of the more fundamental problems of our times. With the rise of several social networks we do have our digital lives more interconnected than ever, but we lack real inter-personal interactions.

We comprehensively understand major forms of social isolation and realize that the salient common factor that contributes to social isolation at its root is social anxiety.

Social anxiety[2] is as defined by the Social anxiety association is “the fear of social situations that involve interaction with other people. You could say social anxiety is the fear and anxiety of being negatively judged and evaluated by other people “.

The following are the major attributes of a socially anxious person:

- Fear of social situations
- Fear of being watched
- Fear of being humiliated
- Lack of social skills
- Fear of being negatively judged and evaluated

User Selection
After carefully considering multiple user groups we narrowed down our focus groups to “Single passengers travelling via Airplane.”. There were primarily two major contributing factors that motivated us to select Airports.
**A: Social Anxiety is a problem here.**

Most of the common attributes of a socially anxious person can be observed at airports:

- Being introduced to other people
- Being the center of attention
- Being watched or observed while doing something
- Having to say something in a formal public situation
- Meeting people in authority
- Feeling insecure and out of place
- Embarrassing easily
- Meeting other peoples’ eyes
- Swallowing, writing, talking, making phone calls

**inter-passenger interactions.**

Airports hosts thousands of people from diverse backgrounds in a confined space, yet there is extremely low level of interactions among the passengers:

- Diverse people
- Confined space
- Low level of interactions

**Method**

We began first my mapping passengers interaction points by creating a “Passenger Journey Map”, it allowed us to converge the airport environment to
User Personas
These are some of the commuters travelling alone at Airports which we need to consider when formulating solution.

Student
Age: 15 -25 yrs
Priority: Educational workshops etc.
Behaviour: Informal, Casual Fun

Tourists
Age: Widely Varied
Priority: Exploration
Behaviour: Informal, Casual Fun

Business man
Age: 25-45 yrs
Priority: Business oriented goals
Behaviour: Sophisticated Professional Formal

Figure 2: User Personas

potential points possibilities of improving interactions.

We chose the "waiting lounge“ to be the best area for possible increase in inter-passenger interactions.

We chose the waiting lounge because of two factors:

- Confined environment: Researches have shown that confined environment can act as a catalyst for interactions.
- Free time: Most of the single passengers spend their time by listening to music or watching movies etc. This time could be utilized for increasing interpersonal interactions.

User Research
We conducted a qualitative user research to understand if social anxiety is in fact a matter of concern at the airports. We constricted our research to college students who generally travel alone.

- We asked them the following questions:
  - What clothes do you prefer wearing while going to airports?
  - How often do you eat at airport while waiting for the gates to open?(Boarding time)
  - Do u prefer sitting alone or someone’s company while eating?
  - How do u find people at airports?
  - Were u ever interested in a person at airport?
  - Reason of interest?
  - Did u talk to that person?

Inference
- Formal Clothing

The visualization clearly shows that though there are some people who prefer wearing casual clothes, most of them proffered wearing formal or semi-formal clothes.

Researches have shown that, the way a person dresses is closely related to his personality and being conscious of the way one dresses is often related to social anxiety.

- Spending Time
A fair share of the people belonging to the above category found themselves sitting alone at airports, this indicates that social anxiety might result in social isolation.

- Interest
A majority of the people belonging to the above two categories do find interesting people at airports and do want to interact but often do not. This shows that there is indeed a possibility of increasing interactions among single passengers at the airports.

Figure 3: Data Visualization
**Understanding Successful interactions[1]**

In order to improve interactions, we first wanted to understand the fundamental of a successful interaction.

We describe a successful interaction by 4 pivotal steps:

- **Self Disclosure**: Opening up to others
- **Unity**: Feeling of Belongingness
- **Commitment**: Maintaining the interactions
- **Expressionism**: Expressing emotions and beliefs

We studied each of these features comprehensively and while we were brainstorming on the possible solutions we can adopt to promote these features in each passengers interactions with other passengers, we realized that the way we were envisioning inter-passengers interaction is similar to the way marketers envision the consumer-product interaction via the Moment of truth, Mental model of marketing.

**Mental Model of Marketing [3][4]**

Marketers explain the 4 models of customer decision making through moments of truth.

- **Stimulus**: Awareness of the product, generally through advertisements.
- **Information gathering**: 
  - Research
  - Check alternatives
  - Check places to buy
- **Shelf**: Point of sale
  - First physical contact with the product
- **Experience**: 
  - Opinions about the product

From this mental model adopted by marketers to understand consumer decision making, we derive a system model to understand the way passengers would interact with each other.

We consider two passengers

<table>
<thead>
<tr>
<th>Passenger</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
and observe from the perspective of passenger A.

![Diagram of Passenger-Passenger Model](image)

**Solution Attributes**
The Passenger-Passenger model derived before helps us to further identify 4 pivotal attributes of our solution, and how they could increase interactions.

![Diagram of Solution Attributes](image)

### Attributes of our solution:

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assist A in finding B</td>
<td></td>
</tr>
<tr>
<td>Should provide necessary information about B</td>
<td></td>
</tr>
<tr>
<td>Assist A to meet B</td>
<td></td>
</tr>
<tr>
<td>Assist A to interact with B</td>
<td></td>
</tr>
</tbody>
</table>

### Subjective Approach
Social anxiety is a very complex phenomenon, specifically because it deals with the root cause of one’s conscious existence. Therefore it’s fundamental have a subjective to solve the inner needs of the user in such cases instead of being objective.

![Diagram of Subjective Approach](image)
Discussion
We constructed our solution by mapping down phases of our system design model:

I. A finds existence of B
II. A learns about B
III. A finally confronts/meets B
IV. A interacts with B

We further consider the Use and Misuse Cases and take into consideration the following points:

- Don’t hamper privacy
- Take into account weak social skills
- Try to subconsciously allow interaction instead of forced interactions.
- Produce an urge for people to talk to each other.
- Focus on User Goals and not tasks, i.e. focus on the kind of conversations they actually want to have and not just any conversation.
- Make the experience of interacting, more immersive.
- Have an unobtrusive and transparent system.

After setting these parameters & variables we brainstormed about possible solutions. We came up the idea of socioTags. Each passenger is given a colored smart security tag mapped to his interests and profile. This allows each passenger to visibly locate another passenger of similar interests.

Conclusion
Some of the key findings of our solution:
1. Social anxiety implicitly leads to social isolation.
2. In an environment like that of an airport the emergence of social anxiety restricts people to interact with other people.
3. There can be several challenges involved in carrying out a successful person-to-person interaction like self-disclosure, commitment, unity, expressionism etc.
4. Interactions are driven by mutual benefits and similar interests.
5. In order to overcome the problem of social anxiety pulled by benefits and interests, people need to identify existence of each other, gather information, confront each other and interact which is helped by external agents.

References