Designing for Emotional Intelligence in Customer Service

by Amy Ip

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The School of Design
Carnegie Mellon University

Amy Ip	**David Kaufer, Advisor**

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Contents

1. Introduction

New forms of communication and information technology have been integrated to become part of our daily lives. As consumers have become more demanding, the need for instant accessibility to services at anytime and anywhere is increasing. Companies are trying to meet the market needs by creating "super products" that have combined functions and features; however hundreds of these products have failed because they are too complicated to use. Instead of meeting people's needs and adapting to their everyday life, these products are created to gain more market share and make short-term profits.

Recent research has indicated people respond to the media socially. Since human better responds to the predictable environments, they find technology products are difficult to use because these products do not comply with the rules of the environment and social relationships of everyday life. Scientists have concluded that it is easier for people to communicate with computer products if the products incorporate some human-like behaviors. Some companies have acted on this research by attempting to add such features to their product's interface. Although many of the digital products we use today are tools that have consistent response to user's behavior, they do not have human-like behaviors themselves. A virtual telephone customer agent, where human voices are part of the machine, is one example which shows companies using this strategy to make products more user-friendly. In many cases however, the behaviors of these Interactive Voice Response systems (IVR) are not consistent with the behaviors in human-to-human (HtH) communication, and therefore have caused more confusion to the users.

In HtH communication, emotion is one of the most effective channels that allows people to communicate effectively. Emotional Intelligence (EI) refers to the human ability to recognize the meaning of emotions and their relationships, and to solve problems based on this ability. People who have proficient EI skills will perceive others' emotions easily and use this to facilitate their thoughts, shift their perspective, or even manage their emotions. The traditional service industry relies on the EI skills of their staff to provide quality service to the customers. So, if their computer systems can incorporate emotional intelligence, the systems will also provide better customer service.

Although we learn how to perceive and exchange information with others by observing, talking, listening, reading gestures and body languages starting from the day we were born, this ability is never perfected, because it is a complicated task for people to clearly and efficiently communicate. Since learning how to better communicate with others is a life-long process, the

task of designing computer service systems that allows for natural human interaction is a great challenge. The reward for meeting this challenge seems just as great, so in this essay I have tried to understand how we can design computers to have human behaviors and emotional intelligence to manage the information to help people solve problems.

As an interaction designer, I am interested in applying human communication protocols to design natural interface for products. I approached this problem first by understanding the values and processes of traditional person-to-person customer service, and then applied the findings to design for emotional intelligence in customer service system. In this paper, I describe the challenges in designing customer service systems by borrowing social and communication theories from traditional disciplines.

2. Customer Experience In The New Information Age

2a. Customer service and technology

As new communication channels are being used to conduct business, customer experience has become very different in the past decade. Telephone Interactive Voice Response Systems, ATM machines and websites are some examples of computer systems that are replacing traditional service to provide more convenience for customers. Although these technology products have provided us more options and flexibility in our lives, these systems have also created annoyance and frustration for us.[i1] Many of the customer service systems we use these days are made to gain market share or to reduce operating cost for the companies, however very few of them were designed to provide a better customer experience. Now the market has become more competitive, so companies are starting to realize the level and quality of service has a tremendous impact on long-term market share and profitability. They have placed stronger emphasis on designing for better customer experience[2].

2b. Punished for being a customer

Automated telephone service is one of the most commonly used customer service systems. Although I am familiar with this type of service, a likely scenario when using such a system is that I will get confused, and not be able to remember or understand what the selections were. A lot of times I will have to listen to the menu a few times before I am ready to make my selection, because the options are unclear to me. Sometimes I do not understand how my problem fits the category selection the system describes. Very often, I will get lost in the menu hierarchy and have to hang up and start the selection process over. For many of the telephone customer service telephone systems, if we do not respond within a certain time period, the system will acknowledge that the customer may have encountered problems and transfer the call to a human customer representative. I found this a very useful feature because very often I am not able to find a right match of my needs to the selection options.

When I was working in Hong Kong a few years ago, the retail-banking department of a major bank redefined their service packages. Savings account customers with the lower minimum balance required were not able to talk to a human representative through the customer telephone hotline; their customer service number would only offer automated computer services. I found

[1] Customer loyalty

the new service package disturbing because the bank limited HtH access only to their more major depositors. If the customer could not match a menu option to their needs, they probably had to go visit the branch in person. The inflexibility of their system caused me more stress and inconvenience. This illustrates the importance of designing customer service systems to minimize annoyance and frustration for the customers.

Another of my recent experiences also illustrates the importance of good customer experience and the possibility of a helpful computer system. A few months ago, I was trying to have my computer repaired. My experience of dealing with the telephone answering systems, different departments and customer representatives was very time consuming and bothersome. This experience was so bad as to make me wish I had bought my computer at a different company that has better customer service. Even though other brands may be more expensive or less popular, those companies are providing more friendly and reliable services and so I would choose them in the future. I have repeated my negative experience with their customer service department to my friends when they ask me about my laptop.

[2] (performing Index)

3. Design, Emotions and Service Satisfaction

As a fellow consumer, I believe all customers deserved to be treated with respect. I also want to receive good quality of service when I go shopping. I feel that I should be rewarded for the money I spent, and not to be punished for being a customer. I enjoy my freedom to browse around when I am at a shop, but I also CCwant to have the attention from the sales representatives when I need assistance. Moreover, if I have any problems related to a product I bought, than I hope the store can help me fix them. When I need to upgrade, I want them to recommend the best solution for me, not the product that can make them the biggest profit.

When I was a child, casual wear was not considered a proper outfit in Asia. I was told that I should dress nicely before I go to a brand name store so that I can receive better service. At my first visit to the United States, I was amazed by the warm welcome of the sales representatives from most of the stores that I visited regardless of what I was wearing. I also much appreciated the stores' liberal return policy for products purchased. I was impressed by the class of service provided by the sales representative and believed customers should always be greeted politely.

As business becomes more competitive, companies are using technology to help expand their businesses. Unfortunately, many of these products are unfriendly to users, and have taken away many valuable qualities traditionally provided by HtH customer service. Companies are facing a common challenge to provide better services that have high economic value to their business; and I believe designing for customers' emotional needs could be a solution.

3a. Emotion and Customer Service

> **"Nobel laureate Herb Simon, writing on the foundations of cognition, emphasized that a general theory of thinking and problem solving must incorporate the influences of emotion.(Simon, 1967)"[3]**

In human cognition, thinking and feeling are partners. Scientific research has shown evidence that the people who are not able to feel or less sensitive to emotions (as known as affects) can impair people's decision-making. Conventional customer service is a problem-solving process that includes the customer representative's emotional intelligence to understand the client's problems, perceive their needs and provide solutions. As emotion plays an essential part in any communication and problem solving, people naturally use it when they interact with computers. Many service products available in the market today allow little flexibility for the

[3] Ibid

customers to express themselves when compared with their interaction with a human representative. Therefore if we want to design customer service systems with natural human interfaces, the systems should have human-like behaviors which include thinking and feeling ability.[4] Although some of the telephone customer service systems have created virtual characters to make the process more like a natural conversation, many of these systems paid little or no attention to how they affect the customer during the conversation. These virtual customer service representatives are able to neither perceive emotions nor express them.

Expressing emotion is a natural way for human beings to express themselves. The information we can perceive from someone's emotion in a conversation is powerful, and can influence someone's decision. Rosalind Picard suggested emotion not only contributes to a richer quality of interaction, but also has a direct impact on people's ability to interact in an intelligent way.[5] Companies are starting to realize the importance of emotional feelings in their customer's spending habits, and have incorporated this when designing products to meet their customer's affective needs. Studies on customer's emotion showed that the negative feelings of the customers have a much stronger impact on their satisfaction level than their positive feelings.[6] This research suggested that customer satisfaction is influenced by two distinct measures: perceived performance, and affective dimension (satisfaction).[7] Therefore the affective dimension of the customer is a separate factor that contributes to the formation of the overall customer's satisfaction.[8] Therefore affective needs of the customers cannot be ignored if we want to design service products with higher customer satisfaction.

[4] Ibid
[5] Ibid
[6] Liljander, Veronica and Strandvik, Ibid.
[7] Liljander, Veronica and Strandvik, Tore. Emotions in service satisfaction. International Journal of Service Industry Management. Vol.8 No.2, 1997, pp148-169. MCB University Press, 0956-4233.
[8] Sanders, Elizabeth B. N.. Virtuosos of the Experience Domain.

4. Emotional Intelligence (EI) in Customer Service System

4a. Emotionally Intelligent Computer

In order to design computers more pleasant to use, researchers are exploring ways to give an emotional aspect to computers. In her book *Affective Computing,* Roslin Picad explained "emotions play an essential role in rational decision making, perception, learning, and a variety of other cognitive functions"(Affective Computing), and she concluded that if we want computers to be genuinely intelligent, to adapt us, and to interact naturally with us, then they will need the ability to recognize and express emotions, and to have what has come to be called "emotional intelligence" ". Although emotional intelligence is very important to the customer service industry, the existing customer service products have ignored the affective dimension of these products and have incorporated very little EI skills in them.

4b. What is Emotional Intelligence?

In the past decade people have started to work towards improving their emotional intelligence, to help their careers and relationships. In my research I have found that the explanation of emotional intelligence has evolved over time, but generally Emotional Intelligence is recognized as the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them. In my paper, I use the definition favored by Mayer, Caruso and Slaovey in their research for the definition of Emotional Intelligence. It is a set of abilities related to the processing of emotional information.[9] Although the theories may vary in different researches, they have concluded that there is a growing consensus to the definition of the intelligence systems. The system consists of four major qualities, which are perceiving, expressing, understanding, and managing emotions.[10] (Fig.1)

1. **Emotional Perception** : Emotions are perceived and Expressed
2. **Emotional Intergration** : Emotions enter the cognitive system as noticed signals and as influences on cognition
3. **Emotional Understanding** : Emotional signals about relationships are understood, along with their interactive and temporalimplications
4. **Emotional Management** : Thoughts promote emotional, intellectual and personal growth

[9] P.93 emotiona hand book
[10] P. 108 emotional handbook

In order to provide higher level of customer service, it is important to perceive the emotions of the customers and be able to process the information to assist the customers. The qualities of EI have become very important in providing good quality of customer service. The ability for emotional perception is defined as the ability to perceive emotions and identify them accurately. It allows people to aware of emotion through conversations, facial expression, body gesture and tone of voice when they interact with another party. A person who can recognize the change of expressions in another person will have a better understanding of his feelings and thoughts than those who cannot. By realizing how other people are feeling, we will be able to make better decision on how we may want to carry on with a conversation. The ability of emotional integration is to use emotion to facilitate thoughts and shift perspectives. Emotions can help the cognitive systems to focus and have priorities. They can also alter people's perspective and help them to have positive point of view. The ability of shifting perspectives can help people to have better understanding of situation and can help solving problem in a more efficient way. [11] If someone has a bad mood, but then because of professional courtesy he knows he should welcome the clients with positive attitude, therefore he greets them with a smile and friendly eye contact. The ability to understand emotion and their meaning allows people to analyze emotions and understand the transitions of feelings. As emotions have very complex organizations, which includes the physiological, emotional-experimental, cognitive and conscious aspect of the mental life, understanding emotions is the process of labeling them. For example, if you realize your teammate became very quiet in a meeting, you can understand he is upset because of his poor performances. Last but not the least, emotional management is the ability to manage emotion, and to manage the emotions of others with regards to their relationships. This ability also help people to consider different alternatives, and to make the best decision form it. Imagine your clients have become very unreasonable and impolite at a meeting. If you realized that your clients were feeling uncomfortable with the progress of the project, you assured them the project is well taken cared of and you have clamed down your clients and have the meeting carried on smoothly. Even though you may be very upset, you controlled your own temper and use a firm tone to express your opinions.

(Diagram to be inserted - more detail explanation of EI definition)

[11] P. 109 Emotional Intelligence Hand book

5. Understanding our customers

5a. How customer representatives serve

In order to better serve customers, it is important to understand the customer's values in their customer experience. Some of the relevant qualities to consider about customer service are how to find out what customers want, and how to assist them without interfering in their private space. Jeffery Gitomer, the author of *Customer Satisfaction is Worthless, Customer Loyalty is Priceless*, a guide helping sales people to improve their business suggested that the only reason the customers come to your business is because they need help. Although their needs may be different and change over time, their goal is to seek for a solution for the problem they have in mind. Customers become upset or get frustrated because they are not able to receive the information or service they desire to solve this problem.

Since big corporations have developed different departments and systems for easier management and higher productivity, their employees are trained to be specialized and familiar with certain aspect of the service they provide. Therefore, when the customer representatives have encountered some unexpected problems from their customers, they may need to redirect the customer's call to other departments for help. The customer representative operates on and within the systems of their corporations; these systems may not provide good communication between different departments. Sometimes when a customer representative would like to offer help to their customer, these systems do not give them the permission they need to act because of internal rules.

Scenario

Max has just accepted his new job offer and decided to move to Pittsburgh. He was interested in buying a new mobile phone, but he didn't get the chance to take care of it yet. One day he was passing by the mobile phone store at the shopping mall and he decided to go and find out more information about the service packages. When he walked into the store, he found more than 30 phones were displayed on the wall, and he was overwhelmed by the different services plan as well. Information about the different service carriers' price plans were posted on the wall near the mobile phones available in the show room. A customer representative soon approached him with a warm welcome and asked if he needed any assistance. He told her that he was interested in getting a new mobile phone and asked her for a recommendation. She started by asking him about how he used his existing phone, then confirmed to see if he was familiar with some of the

new features that may be useful to him. After a few questions, she suggested 3 different models of mobile phones with slightly different capabilities.

Although all the mobile phones she suggested were of good quality, the prices were a little bit higher than his budget. She saw the hesitation in his face, so she assured him that the phone was at a very reasonable price. Then she suggested a couple lower-end phones with similar style and features. In order to reassure him that the phones were reasonably priced, she started to introduce him to the high-tech features which weren't useful to him. Since she was a little bit aggressive in selling the product, he didn't feel comfortable and so thanked her and said he'd like to browse. After taking some time browsing on his own, he finally picked the phone he liked and went home. A few days later, he noticed the camera in his phone was not working properly, and he decided to go back to the store for an exchange. A salesman at the store directed him to the repair department and the staff there tested a few things with his camera. They apologized for the inconvenience they had caused him and arranged for an exchange immediately. Even though he was upset about the time he spent to go back to the store, he was satisfied with the service he received.

5b. Qualities in Customer Service

Jeffery Gitomer has defined eight common qualities that are found in successful customer service interaction areas are, they are: attitude, values, communication, reliability, tangibility, assurance and empathy:[12] In the cellular phone shopping scenario, the customer satisfaction is determined by the value and quality of the phone, as well as the customer's shopping experience and preferences.

1. Attitude: Customers enjoy being greeted by customer representatives who have a happy, eager, willing–to-help attitude when receiving their service. When the customer was first approached by the sales representative, she greeted him pleasantly and offered to see if he needed any assistance.

2. Values : Customers enjoy knowing that their money is well spent, and they have found a good value in the goods they buy. When the customer service representative came over to provide the recommendation service, she assisted the customer to find the phone that met his needs and

[12] Cutomer

emphasized the cellular phones were set at a good price. Some customers may enjoy a bargaining process, and then might share the successful purchase story with their friends.

3. Communication : After the customer asked for a recommendation from the sales representative, she asked him about how he may use the phone before she introduced him to different product categories. When the sales representative realized the customer found the price a little higher than his planned budget, she recommended other models with lower prices. Customers want to receive the appropriate amount of information about the service or product they are buying. Since too much information could confuse the customers, by knowing their concerns the sales representative decides what information should be revealed at the appropriate time.

4. Reliability: The service should be consistent; the service representatives should act professionally and the company should strive for an error-free record when delivering service. They should always be there when the customers need them, and they should achieve what they claim to deliver. Although companies provide warranties for products, the terms and conditions may be confusing to the customer.

5 & 6. Tangibility & Assurance: The service should deliver what the company advertising promises. Customers should be able to trust the information and advice given and feel confident about the service they are getting. Ideally, the products should have no defects and perform perfectly as described; however, the product may have problems due to accidents, temperature change or human mistakes. In the design process, the company should work to avoid those problems and fix them immediately when they occur. Quality of product and performance should meet the customer's expectations. However, when a product needs to be repaired, minimizing the inconvenience caused to the customers should be a top priority for the company. In the scenario, the repair center of the company exchanged the product for the customer at the purchase location without delay. This is a value-added service to the customer. When the cellular phone was not functioning properly, the customer was upset because the product was not performing as expected, and in situations like this EI skills become particularly important.

7. Empathy: Customers like the service provider to understand their problems and inconvenience, and can provide services to meet their needs. When the cutomer went into the shop, he didn't have to wait for too long or had to go through any complicated procedures to have his phone repaired. For some companies, customer may have to wait in line for more than 30 minutes to get assistance for their repair service, and it has caused a lot inconvenience and annoyance to the customers.

8. Exceptional Service: Customers believe they deserve quality service because they are spending their money. However, in order to please the customers, we have to provide a service that not only meet their needs, but to exceed their expectations and the quality of service they have previously experienced.

6. Communication: Human vs. Machine

Research has been conducted for years on how people respond to computers, and how computer products can be better designed to meet users' needs. In the book, *The Media Equation* by Clifford Nass and Byron Reeves concluded from their research that people respond socially and naturally to media as if they were human beings, even though they realize it is not reasonable to do so. They have also found that humans have "a strong positive bias toward social relationships and predictable environments, [and therefore] the more a media technology is consistent with social and physical rules the more enjoyable the technology will be to use."[ii] [13] Since humans perceive all objects are real objects, it is difficult for us to differentiate media from the real world. Nass and Reeves also challenged the theory of "suspension of disbelief" (the theory used to explain why people will react to movies even though they realize it does not happen in real life), that humans are willing to believe what digital content as real life experience, may actually be a process of "suspension of belief". They suggested that people may naturally belief what they see and hear with the digital content. Although computer technology has become part of our lives, people are unable to change their perception as rapidly to meet these developments. It is automatic for humans to accept what seems to be real as therefore being part of reality, even though at times it is inappropriate.[iii] Even though humans are aware the new media does not exist physically, yet we are unable to overcome our natural response.

As the voice recognition and natural language processing technology has become more developed, the automated systems now have incorporated natural language processing technology, (allow people to interact with with system as if they are speaking to another person) in their user interface design to enhance usability. Even though these computers are able to speak with a human voice, very few of them have incorporated human behaviors in their communication protocol to enhance service to their customers. These systems usually have a very similar information architecture to website or information kiosk systems, they provide choices to the user by category of services according to the organizational structure of the company. Although their selection interface is fairly simple and users are able to learn how to operate the system quickly, for my opinion these systems annoy most customers because they do not respond like humans nor behave coherently in the physical world as suggested by *The Media Equation*. When the automated telephone systems responds to a customer's call , the customer responds to the system's human voice naturally and expects the system to communicate with him like a real person. Unfortunately, the behavior and languages used in these systems often

[13] Nass and Reeves

violates the communication rules and social manners in human interaction, and they do not react as people do.

6a. Reaching Common Grounds

Understanding human communication helps us to identify why many products are difficult to use. The communication theory developed by Herbert H. Clark and Susan E. Brennan, *Grounds in Communication*, helps to explain why we have such difficulties when talking to an automated customer systems. In order to have a successful conversation, Clark and Brennan believed a common ground has to be reached in the conversation by the participating parties. The messages that establish this common ground can be conveyed through verbal or non-verbal channels, and both parties need to coordinate in the content to make them work together successfully. And to ensure they are coordinating on process, "they need to update their common ground moment by moment." Clark and Brennan name this process "groundings". The evidence that indicates groundings are present follows three rules:

1. **Acknowledgement:** The participating party will use continuers or gestures during the course of communication. This is also referred to as back-channel responses, e.g., uh, huh, yeah, really, gosh.

2. **Relevant Next Turn:** The reaction or response from the responding party should be conditionally relevant as an answer. In some situations, if the utterance is appropriate as a response, then it shows the respondent understands the conversation.

3. **Continued Attention:** The receiver continues to attend in the expected way,e.g, eye gaze.

Clark and Brennan have also suggested that the way people communicate will be affected by the constraints of different media.(Table 2). For example, in a face-to-face encounter, conversation groundings can be reached by using continuers, gestures or other body languagein the conversation. However, as the medium changes, the cost and restraint of the medium will affect the groundings available. In a telephone conversation, gestures and body languages will not be able to represent acknowledgement in the conversation, and the evidence for continued attention can only be proven when the other party is responding within an expected time frame.

Table 2 : Cost and Constraints of different media channels in Groundings

Constraints in communications	
Co presence	A and B share the same physical environment
Visibility	A and B are visible to each other
Audibility	A and B communicate by speaking
Co temporality	B receives at roughly the same time as A produces
Simultaneity	A and B can send and receive at once and simultaneously
Sequentiality	A's and B's turns cannot get out of sequence
Reviewability	B can review A's message
Revisability	A can revise messages for B

To apply this framework to a customer service situation, in a successful conversation between the client and customer representative, common ground has to be reached. The groundings between the service representative and the customers are reached by various channels including verbal communication, reading body languages, facial expression and understanding the tone of their speech. Through the grounding process, emotional information will be exchanged.

In the cellular phone example, if the customer was stumbling and had delays in his reply which violated the rule of *relevant next turn* , the sales representative would realize the customer may not understand what she means or have different opinions than her recommendations. By realizing the customer may feel resistant to buying the more expensive phones, she then recommended to him some other less expensive alternatives, even though the customer may not have overtly said it. Sometimes if the sales representative appears to be too enthusiastic in introducing their product, the client may feel confined in the conversation and would like to have some room for himself. By doing so, the client may start avoiding eye contact with the sales and instead look around to indicate he is not paying *continuous attention* to the conversation. In situations like this, in order to make the customers feel more comfortable, she left him alone until he needed further assistance.

6b. Social manners and Etiquette

Imagine you walk into a bank, where a customer representative comes to greet you politely. Before you get the chance to say anything, she starts introducing you to the services provided at different departments, and then asks you which department you would like to visit.

Though you may be confused because the information you want to enquire about may relate to several different departments, without allowing you much time to think about it, she forced you to choose only one department. Even though you may be wondering whether the choice you make is correct, she also does not let you verify your selection. Either the option of the information she provides you matches your interest at a particular department or you are asked to leave. The absurdity of such an HtH interaction is apparent. If this ever did exist in a real life, I am sure the customer would not tolerate the quality of the service and would not come back for the next visit. Yet, this is the scenario of a customer using an automated telephone system.

Designing a polite system should not be considered just a nicety. According to Reeves and Nass, they believe designing polite media is a matter of social survival. Since people treat media as real life, when the media violates the social norms, such as being impolite, the users will view the violation as an offensive act. If people respond to mediated and real-life conversation similarly, then the design of the technical and social sophistication of computer systems should both be judged with equal weight.[14] As polite behavior is an interactive process like any other social behavior, if the machines are polite to people, then in return the people will be more polite to the machines, and may have higher tolerance if their service doesn't meet their needs.. As Nass and Reeves explained, "Everyone expects reciprocity, and everyone will be disappointed if it's absent."(p.29). As people naturally assign meanings to the reactions of these systems, they will consider technical difficulties they encounter as an impolite social act. When the customer service systems violate the social norms, the customers will find it offensive and socially incompetent.[15] They may also consider the system is not paying attention to them, or is being sarcastic or intentionally unpleasant.

As manners and rules of etiquette may vary in different culture and community, Nass and Reeves recommend designers consider all the politeness rules as references. When we are designing customer service systems for multinational services, the cultural factors should be considered to avoid misunderstanding and confusion. It is important to understand the social norms of the particular culture you are designing for, which includes the areas of negotiating personal space, the appropriate time to wait before responding, and how to address the person in an appropriate manner.[16] However, Nass and Reeves believe everyone values social etiquette and tries to be polite across cultures; and people get upset when those rules are violated. They have also suggested that the simple rules like, greeting people with "hello" and "good-bye,"

[14] The Media Equation
[15] P.29 The Media Equation
[16] P.36 The Media Equation

looking at the other party when speaking, and matching modality in responses should be followed when designing systems. Grice's Maxims politeness rule has been recommended to be used as the guideline for designing polite computer systems. H. Paul Grice "viewed conversation as an exercise in which people try to be helpful", and also believed all polite interactions should follow the four basic principles: quality, quantity, relevance, and clarity.(P.29 The Media Equation)

i. **Quality:** Speakers should say things that are true.

ii. **Quantity:** Each speaker in an interaction should contribute only what the conversation demands, not too much or too little.

iii. **Relevance:** What people say should clearly relate to the purpose of the conversation.

iv. **Clarity:** Contributions to an interaction should not be obscure.

Moreover, customers' different personalities also affect the way they value and react to social etiquette. When human customer representatives provide assistance to the customer, they apply their emotional intelligence skills to adjust their response in an appropriate manner during groundings. The representative will perceive the customer's emotions, understand their needs, analyze and manage the knowledge he has acquired, and react or express himself by following the social etiquette rules. Unfortunately, the current technology-based systems we use lack these abilities to facilitate better human computer interaction.

7. Qualities in automated customer service systems

7a. Commons Problems found in Automated Customer Service Systems

Problem 1: Information is not revealed at the appropriate time

Most of the customer service calls in the US are now answered by automated answering systems. Many of automated customer systems however do not communicate like humans, and have caused confusion to the users. When the customers make a call to the service center, it will be answered by a recorded message asking the caller to choose the type of service they desire. When the customers encounter complicated problems where none of the options meet their needs, they will have to make their selection with their best guess; however, often these options cannot provide the assistance they need. Since most customers are not familiar with the selection menu, they will have to use the trial-and-error method to seek for the information they need, and the process is time-consuming and annoying.

Some of the information hotlines are completely automated, and in these cases the caller will have to look for other alternatives to solve their problem if they do not find the answer by the recordings. Many of the customer service hotline centers do provide options for the caller to choose talking to a human representative for assistance; however, a lot of these companies are trying to minimize the number of calls answered by human customer representative to reduce their operating costs. The menus are designed in a hierarchical order where the callers need to go through several levels in the selection menu before they can talk to a human representative.

If the customer's problem is associated with multiple department of the organization, the customers may have to contact different departments to solve the problems. In this casae, they will have to repeatedly tell their problems to different departments. The quality of service is low because the company is not able to provide the service that meets their customer needs and the customers feels neglected. It has increased their workload and trouble if the customers has to repeatedly describe their problem. Companies should have a better system to share customer information between their internal departments. According to the etiquette rule in human communication, many systems had violated the principle of relevance and clarity in their interaction with their customers. The customers have bought the product from company, and so the company should provide the necessary coordination. This coordination between different departments would alleviate frustration in the customers' situations.

Problem 2: Limited Response and Feedback from the system

Many new media products are difficult to use because they do not comply with the rules in the physical world. When the users interact with the product that does not provide appropriate feedback, groundings will not be reached and the users will be confused. According to the *Groundings in Communication* theory, when the conversation is taking place in different media channels, the constraints will affect how groundings are reached. When the human customer representative provides assistance to the customers through telephone, the audibility constraint will have a much higher impact in the quality of the service. When the human customer representative is replaced by a computer system in telephone answer service, common grounds are harder to reach.

Imagine today is Joe's payday, and the accounting department promised they will deposit the paycheck into his account. Since this week has a long weekend, Joe would like to check with the bank and see if the money has been transferred. Joe dialed the 24-hour customer service number. It was answered by a recording of a female voice:

> **Welcome to Bank of America!**
> **To access your account or balances, account activities, transfer, re-order checks or other services, press 1.**
> **To open a new account or apply for a loan, press 2**
> **For ATM or banking centre location, press 4**
> **To pay by phone, press 5**
> **For online banking services, press 6**
> **For account verification, press 9**
> **To speak with a representative, press * or remain on the line.**
> **If you are not using a touch tone phone, please hold.**

Since Joe would like to check his account balance, he pressed [1] on the telephone.

> **To access your account for balances, account activities, transfer, re-order checks or other services, press 1**
> **To transfer funds between accounts, press 2**
> **To stop payment, press 3**
> **To reorder checks, press 4**
> **To order a copy of the statement or checks, press 5**
> **To return to the main menu, press #**
> **To access your account activities, transfer, re-order check or other services, press 1 (enter 1)**
> **For account balance or activities activities, press 1**

Joe pressed [1] again.

> **Please enter your 10 digit checking or saving account number……..**

In this telephone conversation, the human customer representative is replaced by a computer system that provides a telephone answer service with a human voice which does not talk like a human. The *relevant next turn* in the conversation provided by the telephone is established when the system provides the appropriate selection menu or the intended option. The system plays a recording when a hierarchical menu is being read rather use human conversation. When customers interact with the automated customer service systems, they need to learn to use the user interface of the system, adjust to communicate with the machines in their unique language. The *acknowledgement* in this conversation from the system is merely accomplished by the tone of the telephone when the key is pressed. Even if Joe became confused during the conversation, he is not able to pause the conversation and ask for further information before he proceeds. When there is a long delay for the input, which is an *irrelevant next turn*, many systems would remind the user to select an option or repeat the menu. If the user does not respond soon enough, the call will be either transferred to a human customer representative or hung up by the telephone system. If the customers are confused and are not able to identify a match between the options and their needs, they will become more upset if the phone conversation is cut off and they could not find a solution to their problem.

Problem 3: Matching Modality of Manners

As we have mentioned earlier, customers like to be greeted by positive and polite attitudes. Unfortunately, many of the automated systems we see in the market do not follow the polite rules and they do not replace human communication. Thus, they have caused the customers to feel uncomfortable or feel frustrated and angry. In human dialogue, grounding is an interactive process and the common ground is changing instantaneously. In many of the virtual customer systems, while they may ask questions like a human and show verbal acknowledgement to notify the caller's answer is received; the grounding process is not taken place till much later. For example, if I were calling my bank to transfer money from one account to another, I might have the following scenario happen to me. I input all the information including the bank account numbers, and when the transaction should be taking place, the system might tell me that the system is down and ask me to call again when I thought I was about to complete the process. If instead I was a customer at the branch, the minute I started telling the customer representative about my purpose of transferring money, she would notify me about their system problem and I would come back later.

Problem 4: Inflexible

When human representatives provide customer service, they will attempt to understand the clients' needs and preferences, and propose the best solution for them. However, automated customer service will not be able to provide customized solutions to their needs. The services are usually organized in categories, and the caller will have to use the selection interface to eliminate and select the desired service. If the caller is not familiar with the menu system, or looking at the instruction menu on paper, the caller will have to rely on the audio instructions to navigate through the system. Unlike a graphical user interface (e.g., check boxes), it does not allow the caller to customize their input or make multiple selections. Since humans have limited short term memory, if the audio menu has detailed descriptions explaining the service, users may not be able to remember all the options they have and have to listen to the menu multiple times. Furthermore, sometimes customers like to express themselves and prefer to talk to a real person about their problems. They will like the sales representative to give them the assurance that the product will help them solve their problem, and give them peace of mind.

Problem 6: Lack of assistance

When customers approach the customer representative, they came looking for a solution. When the customers are told to go look for solutions somewhere else because they cannot do anything it is likely their reaction will be annoyance. A similar scenario is commonly seen in software applications. Sometimes when you are trying to look up a solution in the Help menu, they will redirect you to go a different section of the menu or display "Information is not found in the HELP section." The customer will become angry because they are not able to find the solution after spending time and effort searching for it.

7.b Challenges in Virtual Customer Representative in delivering customer satisfaction

Scenario: Imagine your friend Mimi sent you an email asking you to pick her up from the airport. You know she is flying back from Edmonton, Canada and she will be arriving the airport around 4:30 p.m. She said she will meet you at the airport passenger pick-up area, and if she can't find you, she will give you a call on your mobile phone. You were running late to the airport, and you forgot to take the email printout with you. You are still at the airport around

5:30pm, but you could not find her. At this moment, you wish you could just walk inside the building to check out the arrival information on the monitor, but you will have to park your car at the garage and she may come out during that time. You knew she flew on either ABC or XYZ airline, but you forgot which one, so you decided to call the ABC airline to see if you can find out any information about their arriving flights.

Female Voice: This is the ABC Airline automated system. To get you up to date on departure and arrival info, I am going to ask you a few questions. By the way, if you already used the system you can say the answer before I finish the question, I don't mind interruption. First, what is the flight number? It is ok to say "I don't know." Ok, let's find out which flight you want? What is the departure city?
You: Edmonton
Female Voice: Next tell me the arrival city?
You: Pittsburgh
Female Voice: Thanks! Is that for departure or arrival info?
You: Arrival
Female Voice: And finally around what time does it arrive?
You: 9:30
Female Voice: Is that in the morning or afternoon?
You: Afternoon
Female Voice: Sorry, is that in the morning or afternoon?
You: Afternoon
Female Voice: Let me make sure I got that right. From Edmonton, Canada to Lisbon, Portugal arriving at about 4:30 pm on Saturday October 26
You: No
Female Voice: My apologies, which part should I change: The departure city, the arrival city, the date, the time or everything
You: Arrival city
Female Voice: I am sorry, which part should I change?
You: Arrival City
Female Voice: What is the arrival city?
You: Pittsburgh
Female Voice: Let me make sure I got that right. From Edmonton, Canada to Zurich, Switzerland arriving at about 4:30 pm on Saturday October 26. Did I get that right?

After struggling in using the system for a few minutes, you decided to hang up and look for another solution. You became frustrated because the system didn't receive your answer correctly for several times, and you have to keep repeating yourself. You are annoyed because there is no other way you can input the information through any other channel. You are confused because you wouldn't know if any flight is flying from Miami by this airline, or if the computer just didn't recognize your words. You are also frustrated because you know there is a monitor inside the airport to give you the information you want, and you are not able to get to it because you are in the car. And most importantly, you are worried because you wonder what may have happened to your friend.

Although the customers would like to be greeted by customer representatives with a happy and eager attitude, the manner of the virtual customer representative should be matching the modality of the customer in the conversation to be considered as a polite response. The current systems exist in the market are not able to perceive customer's emotion, nor have the ability to understand the emotions and to respond accordingly. When the caller was not able to retrieve the information and felt frustrated, the virtual customer representative did not adjust and express the attitude that responds to the modality of the customer appropriately. Since the quality of the communication is low, the customers will get upset because their needs are not met; and may consider the service they receive does not match the value of what they have paid. They would consider the services to be unreliable, and provide them no assurance. Furthermore, they would feel the company has a lack of empathy to their customers which affects the image of the company. When they do not think the services are meeting their expectations, very often they will switch to another company.

8. Conclusion

In human communication, emotion is one of the most effective channels that allow people to communicate effectively. People who have better emotional intelligence skills are able to understand others better, and facilitate better communication and collaboration with colleagues, friends, and family. Current automated customers systems are difficult to use because they have very low emotional intelligence skills, and it is not natural for people to interact with them even though they may look or speak like a human.

There is no current mechanism for the customers to express themselves with emotion to the customer service systems. The systems have no ability to recognize emotions of their customer through non-verbal cues like facial expression and body gesture. This does not mean the customer's experience cannot be improved because of technical limitations. Based on the theory of the Media Equation by Nass and Reeves, we do not have to create a lifelike robot to make people respond to computers like humans. Since subtle cues that imply humans' emotion or behavior will be able to make humans respond to computers like another human naturally, the quality of service can be improved if the system can recognize the human behavior patterns that represent emotions.

In some more current advanced systems, however, by recognizing the keystroke pattern of the caller, they are able to make assumptions as to which customers may require immediate attention. Some telephone companies are starting to use automated operator assistance service to replace human operators. In their study, if the callers are not familiar with the new technology and feel lost with the instructions and get nervous, they will hang up and call again. In order to minimize the inconvenience and frustration in using an automated operating systems, if the caller hangs up during the session, their next call will be given priority to be answered by a human representative. I think this is the first step in perceiving client's emotion regarding customer service systems. It is natural for people to provide assistance to those who need the most help.

In this paper, I have attempted to summarize the challenges for designing customer service systems by using a social and communication perspective. Different disciplines are used to help understand why it is very difficult for customers to use systems with customer service products that have violated the communication rules in human to human communication. I hope the theories and suggestion in this paper will bring attention to the design of systems that operate with emotional intelligence, which will help us solve some of the problems we face everyday.

[i]

[ii] media equation

[iii] Media equation(p.12)