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Communication Design Quarterly

ACM SIGDOC (Special Interest Group Design of Communication) seeks to be the premier information source for industry, management, and academia in the multidisciplinary field of the design and communication of information. It contains a mix of peer-reviewed articles, columns, experience reports, and brief summaries of interesting research results. Communication Design Quarterly (CDQ) is archived in the ACM Digital Library.

We invite you to contribute in any of the following areas:

- Peer-reviewed articles. Articles that cross discipline boundaries as they focus on the effective and efficient methods of designing and communicating information; disciplines will include technical communication, information design, information architecture, interaction design, and human-computer interaction.
- Experience reports. Experience reports present project- or workplace-focused summaries of important technologies, techniques, or product processes.
- Interesting research results. Short reports on interesting research or usability results that lack the rigor for a full article. For example, pilot studies, graduate student projects, or corporate usability studies where full details can’t be released.

We are also interested in proposals for guest editing special issues. As a guest editor, you would be responsible for providing two peer reviewed articles on a specific topic and, potentially, coordinating with the column editors so their columns can complement the issue’s theme.

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Welcome to Communication Design Quarterly issue 4.1.

In this issue, guest edited by Kirk St.Amant looks at international communication and the design of communication. He's written a nice introduction to the special issue, so I will not address it further.

This issue also marks the end of my time as editor of CDQ. Liza Potts and I agreed to take on this task four years ago as a way to help ramp up interest in SIGDOC and to provide another outlet for the research within our field. Both points, while still works in progress, are moving forward. And it is time for me to move on.

For the next year, Kirk St.Amant will be acting as editor. He has several special topic issues lined up, with each focusing on a range of topics relevant to the design of communication.

Hope you enjoy this issue and thanks for reading Communication Design Quarterly.
Notes from the Chair

Liza Potts

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Our 2016 Conference

It’s that time of year again! Time to ready your proposals for the next conference. Collaborating with our colleagues and friends at George Mason University, this year’s conference is held in Arlington, VA, a nearby suburb of Washington, D.C. In 2015, we hosted 81 attendees, including 34 students. I would love for us to welcome the same number (or even more) to our 2016 conference.

An important theme for 2016 is context. We are interested in hearing about your research in and exploration of this concept. Along with our conference Chair, Dawn Armfield, our conference committee has asked you to consider the following questions:

- How have communication design practices evolved to meet the needs of new contexts/audiences?
- How has UX design evolved to respond to technology used in multiple contexts?
- How does mobile use (checking mobile devices while riding in a car, cooking dinner, walking around town, etc.) affect how we communicate and use information?

Once again, we will be holding a family friendly conference. There are several exciting museums and nearby attractions for you and your family to enjoy.

As a reminder, here is the timeline for the 2016 conference from our website:

- January 11, 2016: Proposal system open for submissions
- February 1, 2016: Research and technical paper, Experience report, Poster, Panel, and Workshop proposals due
- February 29, 2016: Proposal reviews completed
- April 18, 2016: Research and technical papers, Experience reports, Posters, and Panel/extended abstracts due
- June 6, 2016: Full-length reviews completed
- July 11, 2016: “Camera-ready” paper/extended abstract revisions and final posters due

For more information, take a look at our conference website: http://sigdoc.acm.org/conference/2016/

We are also keen to continue to support students at this year’s conference. More information will be coming soon about our Microsoft sponsored programs.

**Heading into 2016**

We will be holding elections in 2016 for a new slate of SIGDOC Executive Committee Officers. I have submitted the names of our volunteer candidates to ACM, and I hope to hear back from them soon. Once their names are official and I am given the ok by ACM, I will let have each candidate introduce themselves to you by way of email.

And with that, I will leave you with one last thought as we head into 2016: We need your help to grow our SIG and share our work. Feel free to tweet, review, or share our SIGDOC articles. We want to make sure our work is read, cited, and recognized. I am so proud of what we have accomplished this past year. Until next time…

Happy New Year!
Introduction to the special issue
Cultural Considerations for Communication Design: Integrating Ideas of Culture, Communication, and Context into User Experience Design

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Culture and the Context of Communication Design

Culture can be difficult to define, yet it is central to almost everything humans do. Culture shapes how individuals view the world – what they consider right and wrong or appropriate and inappropriate – and often provides the lens through which they perceive communication and create messages (Sardi & Flammia, 2011; Varner & Beamer, 2015). As such, culture can be one of the most important aspects communication designers need to consider when developing materials for an audience – any audience. When extended to broader intercultural or international contexts, the need to understand how culture affects expectations and perceptions becomes even more acute. For this reason, the more communication designers know about researching, considering, and addressing cultural communication expectations, the more effectively they can develop materials that meet the information seeking and usage needs of a greater global audience.

But where to begin?

For starters, none of us is born with a culture. Rather, we start our lives as a blank slate, and our culture is something we acquire over time via living as a part of it, observing actions that take place in it, and learning from these observations (Berry, Poortinga,
Breugelmans, Chasiotis, & Sam, 2011). This process of learning our own culture is known as enculturation, and it is based on exposure over time. That is, the more we see a particular behavior that the members of our culture reward, the more likely we are to adopt the perspective that behavior is correct and seek to emulate it. The more often we see the members of our culture being chastised for a given behavior, the more likely we are to view it as negative and to avoid that behavior. This connection between exposure and patterns of emulation or avoidance undergirds everything from how individuals dress to how they move to how they design to how they communicate.

So why is all of this important to communication designers? Because it means we cannot assume what is an acceptable way to communicate (e.g., to draft texts, craft visuals, or design interfaces) in one culture is universal and works with all others. Superficially, this idea—that no cultural universal exists for communication—seems self obvious. At a deeper level, however, it has important implications. And it is these deeper-seated concepts that affects how communication designers need to approach the process of developing informational and instructional materials for audiences from other cultures.

The Complex Dynamics of Culture and Communication

When it comes to creating messages or materials for individuals from other cultures, communication designers need to consider a range of factors. Some of these factors can appear self evident. Others can be more nuanced. In many cases, they are interconnected, and a failure to address one or more of them effectively can affect how the members of a given culture respond to and use a particular item – be it a document or an interface. For these reasons, it is important for communication designers to familiarize themselves with the various elements they need to consider when crafting different informational or instructional items for individuals from another culture.
Language and Rhetoric

To begin, culture and language are often interconnected. This connection, however, involves more than just language itself. Rather, it is often a matter of how the members of a given culture use a language in particular ways to convey information. In essence, just because individuals can say something a given way in a particular language does not mean they should say it that way or that the members of the related culture consider it expected or appropriate to convey ideas in that manner. The notion of rhetoric – or how one structures or presents ideas in given language – is therefore often as important as the vocabulary and syntax of the language itself (see, for example, Campbell, 1998 and St.Amant, 2006).

These rhetorical expectations – or how to say something appropriately, effectively, or credibly (i.e., worthy of attention and consideration) – can affect everything from how to construct a sentence to what kind(s) of information should appear in certain types of documents to if a particular genre for conveying information is used at all (Driskill, 1996; Tebeaux, 1999; Woolever, 2001). What makes these cultural rhetorical expectations particularly challenging is they are a construction of the culture using a given language and not necessarily an aspect of the language itself. This factor means cultural groups that speak the same language can have different expectations of what are considered expected, acceptable, or credible approaches to convey ideas (Driskill, 1996; St.Amant, 1999). Moreover, individuals often use the rhetorical expectations of their native language and culture to assess the credibility and the effectiveness of messages in other language and constructed by the members of different cultures (Ulijn, 1996).

Image Use and Visual Design

Further complicating this situation is the fact that such communication expectations generally transcend language. Different cultures, for example, also often have different expectations relating to visual communication. In some cases, these differences can involve what an item or object should look like in order for it to be recognizable (Atchison, 1994; Kostelnick, 1995;
Gillette, 1999). (What, for example, should a mailbox look like so potential users correctly identify a “send mail” icon?) In other cases, these differences can involve expectations of what constitutes an “appropriate” or a “credible” visual depiction of an object or a person (St. Amant, 2005). These ideas of recognizeability and credibility, moreover, are both related to the notion of exposure over time (Atchison, 1994). That is, the more one sees a particular item and is told, “This item is X.” (e.g., this item is a “mailbox”), the more the individual will expect the related item to appear that way. Variations from these exposure-based norms can, in turn, affect if individuals from other cultures can recognize the items depicted in a visual. Similarly, they can affect if individuals from other cultures consider a particular visual a credible or an appropriate one that merits consideration (or if the overall document or interface in which that visual appears is also a credible one that merits consideration or use).

Closely related is the practice of using visuals to convey abstract ideas. If, for example, one wishes to use an image as a metaphor to represent a particular concept, what should that visual be? (To convey a particular product is associated with education and learning, what should the related product logo depict?) In making this selection, communication designers need to be aware that the same item can represent different qualities or traits (i.e. have different metaphoric connotations) depending on the culture of the related audience (Horton, 1993 & 1994). Similarly, how should visuals be used to convey ideas more indirectly? When, for example, is it appropriate to have an advertising visual depict two competing products in order to imply that one is better than the other? It depends on the culture (and related cultural preferences) of the given audience (Kamath, 2000).

These variations in visual communication expectations, moreover, extend beyond the use of specific images or the design of certain graphics. Rather, they often also apply to the construction of overall visual elements such as interfaces. Consider the design of an organizational website. Where should the menu bar (or bars) be located to facilitate use? How many links should appear in them? And how many images should one include on such sites (and where should these images be located)? Such factors are not
universal. They instead depend upon the expectations of the user and, in many cases, are connected to the culture of the user and what expectations members of that culture have in relation to the overall design of different communication materials (Yunker, 2003; Sun, 2012).

**Usability and the User Experience**

Perspectives on what constitutes a usable design add another layer of complexity to intercultural and international communication contexts. In essence, just because a given technology or communication product or device exists in multiple cultures does not mean that item will be used in the same way(s) – or at all – across cultures (Sun, 2012; Getto & St.Amant, 2014). Many social media, for example, can be accessed and are considered acceptable in a range of nations and cultures, but research indicates these media are not always used as often, in the same ways, or at all depending on the culture of the user (St.Amant, 2015, April). Similarly, other research notes that the idea of creating communication materials for one specific culture and then trying to adapt them for others is not always an effective approach. In fact, the design of an item is generally so closely connected to the norms and expectations of the culture that created it, users in other cultural contexts often need to re-configure the item to use it effectively (see, for example, van Reijswoud & de Jager, 2011). For these reasons, a number of individuals have begun to advocate individuals begin the design and development process with different culture in mind from the start and then create materials in a way that best address varying cultural expectations of and conditions of uses (Langmia, 2011; van Reijswoud & de Jager, 2011; Sun, 2012; Getto & St.Amant, 2014).

These ideas of design and use, moreover, are further complicated by the fact that no culture is a monolith. Rather, there are different groups within a given culture, and each group brings with it different expectations and needs that reflect different attitudes, lifestyles, and situations or settings (Yu, Chan, & Ireland, 2007; Getto & St.Amant, 2014). For these reasons, communication designers studying culture and communication have begun to advocate approaches – such as the use of personas – to better understand the different populations that can exist within a greater
cultural group (see, for example, Getto & St.Amant, 2014). While such a degree of granularity can seem daunting, the rewards for these investments can be quite high. (This situation is particularly the case in relation to online media and interface design as international Internet access continues to expand to more nations and cultures.)

Understanding and addressing such cultural communication factors, however, are only part of the overall puzzle communication designers need to understand in order to engage in effective design for other cultures. The other major factor to address is the context in which the related materials will be used. The central issue here is that different contexts require the communication designer to account for and address different factors in order to create materials a given cultural audience will find usable. While these contexts are often manifold, one way to approach this overall situation is in terms of three meta-categories that examine the settings in which information is shared with different groups.

The Contexts in Which Cross-Cultural Communication Occurs

One of the greatest challenges in addressing aspects of culture and communication has to do with the context in which information will be used or will be exchanged. To address this factor from a communication design perspective, let’s think of three different contexts for interaction. The idea is that by better understanding such contexts, communication designers can make more informed and more effective choices about how to approach a particular situation that involves designing materials for users from other cultures.

Context 1: Cross-Cultural and Intercultural Communication

For the purposes of discussing these contexts, let’s define culture as a world view. That is, culture is a framework the members of a group use to identify what is important to the group and how to assign value based on that common notion of importance. In this way, our culture identifies what the members of our group/our culture communicate about (i.e., what the group values) and how
they communicate it (i.e., what the members of the group consider a credible way to interact in relation to that which is valued).

When groups with two different world views, or different frameworks for considering and valuing the world around them, interact, information moves from one culture to another and thus from one value system—and system for communicating and assessing the conveying ideas—to another. This context for interaction where information moves from one value system/world view/set of expectations for conveying ideas to another could be considered cross-cultural communication (i.e., ideas move across cultures). The process of conveying ideas and information back and forth across cultures – and different systems for conveying and evaluating the presentation of ideas and information – would thus be intercultural communication, for it is a context in which the members of two different cultural groups interact.

The central idea in this situation is the factors affecting communication practices are connected to identifying, understanding, and addressing cultural expectations vs. other items or aspects (e.g., different legal systems) that affect communication practices. This perspective also means that such cross-cultural or intercultural exchanges are not connected to geopolitical boundaries, but can take place within the boarders of the same nation (e.g., Canada has large Anglo-Canadian and French Canadian cultures, both of which exist in the same country and communicate within the contexts of that same nation). Thus, when communication designers study intercultural communication contexts, the focus of their research would be on identifying the different world views of the cultures interacting and then identifying how those differences affect communication patterns and expectations. The idea is by identifying, understanding, and addressing such cultural factors (i.e., differences), one can design more effective – and, ideally, more usable – communication products for users from that cultural group.

**Context 2: International Communication**

In other cases, communicating across cultures involves interacting across different nations. In these cases, communication is not only intercultural (i.e., involving more than one cultural group), it is also
international. This distinction has to do with geopolitics and economics. When different cultures interact in the same nation, they are often doing so under a common political and legal system (e.g., a set of national laws) that governs exchanges. As a result, the communication designer only needs to be familiar with and account for one set of national laws when creating information for these different cultural groups. Moreover, as the legal system under which the parties interact also generally stipulates the nature of a range of behaviors (e.g., how to settle a business dispute, what constitutes legitimate business practices, how to file a grievance or challenge a decision), the communication designer only needs to be familiar with and consider the nuances of this one system when creating materials for the different cultural groups interacting within it.

When communication becomes international, or involves more than one nation state, the legalities one needs to consider becomes more complex. In such cases, what might be permissible or legal behavior in one nation might be actionable or illegal in another (St.Amant, 2008). For example, the laws that govern what information can or must be shared with others, how, where, and when can also vary markedly from nation to nation (Markel, 2006). (Consider how the different national approaches to personal information and data disclosure affect how US companies can interact with individuals in EU member nations.) Similarly, privacy laws that regulate if and when the government can monitor communications (and hold individuals responsible for what they say) can vary from one nation to another – and such factors can affect how individuals in different nations use the same medium to communicate (e.g., uses of social media in the US vs. in the People’s Republic of China) (see St.Amant, 2008, 2015 March, & 2010 April). These different national laws can also affect how much control organizations in one nation might have over their information or materials once those items have been shared with individuals in another nation (Herrington, 2013). (Consider, for example, how different national statutes on copyright have influenced the ways in which organizations in one nation share proprietary information with partners in another country.)
In a similar way, the various political and economic systems within a nation can affect communication—and other—practices in a range of ways. The economic system of a nation, and the related political system that governs the nation, can affect what resources/funds are available and how they are used. Consider, for example, infrastructure. The amount of funds available to a particular national government and how that government decides to allocate those funds can affect how developed, widespread, and reliable different kinds of infrastructure are in a given nation or a particular region of that nation (Tawileh, 2011; van Reijswoud & de Jager, 2011; St.Amant, 2015, March). When two cultures are interacting under one governmental system, aspects such as these can be easier to identify and account for. When they expand to include different nations and political and economic systems, then assumptions about what is “expected” in terms of telecommunications or transportation infrastructure—as well as the mean income of prospective clients or consumers—needs to be re-thought, researched, and accounted for to make sure individuals in other systems can access and use materials (ideally, as intended) (Tawileh, 2011; van Reijswoud & de Jager, 2011; St.Amant, 2015, March). Accordingly, the more nations involved in an international interaction, the more varying national/geopolitical factors need to be identified and accounted for in relation to design and developing materials that can work in different national contexts.

**Context 3: Global Communication**

Within this framework, the idea of *global communication* represents the highest level of complexity. In such cases, an organization is attempting to release a product to or share information with as many markets in as many nations as possible (or feasible). Thus, the complexities of attempting to address not only cultural differences and national differences expands exponentially as communication designers try to develop materials that will work with a wide range of cultural groups distributed across an array of nations. In such cases, the question often becomes what exactly does a global market or a global audience mean? Is an organization truly attempting to share information with all cultures and nations everywhere, or is the idea to connect to only a select group of individuals across a broad range of nations (e.g., the middle
class/individuals who can afford a particular kind of product). And even when the desire is to connect to a narrow group within a greater global context, the number of cultural and national issues that need to be considered creates high levels of complexity that the communication designer must address.

While this range of contexts, when combined with cultural communication factors, can seem daunting, the situation is not impossible. The key to communicating effectively in or designing effectively for these different contexts involves one central factor: knowledge. The more the communication designer knows about the cultures for which he or she is creating materials and the contexts in which those items will be used, the more effectively he or she can develop products that meet user expectations and needs.

**Considerations in Culture and Communication Design**

Addressing these various and complex factors often comes down to two central concepts: information and approaches. Information has to do with what one knows about the culture for which she or he is designing materials and the context in which the related audience will use those materials or engage in interactions involving or relating to them. The more one knows about the cultural expectations and preferences of the related audience, the environment in which the audience will make use of that item, and how, when, and where the item will be used, the better the communication designer can create materials that meet those needs and address the dynamics of the related context. (In essence, knowledge of audience is power to design effectively for it.)

Gaining such knowledge, however, can be difficult, for cultures can change in rapid and unexpected ways over time. As a result, the approaches communication designers use to learn about the expectations and needs of users from different national and cultures and the contexts in which they interact need to be multifaceted and extend beyond a simple literature search for prior work published on cultural communication patterns. Rather, the approaches communication designers use must involve observing the members of a given culture in order to learn about perceptions
and patterns of use. Similarly, communication designers need to consider ways to test different designs with the members of a given cultural audience to assess the usability of those designs and revise and adapt them to better meet audience needs and expectations when possible. Thus, resources that provide models of such approaches for acquiring this information and discuss the uses of different resources that contain certain kids of information can help communication designers better navigate the various contexts in which culture can affect communication and design expectations.

The entries in this special issue represent initial examples of the approaches communication designers can employ and the resources they can use to enhance the information they have on factors of culture, context, and communication.

The Objective of This Issue

The purpose of this special issue is not to provide communication designers with a wide range of strategies and solutions for engaging in effective cross-cultural communication in different contexts. Nor should it be seen as a definitive resource on such topics. (Those objectives would require a series of texts – if not an entire library – to address effectively.) Rather, the objective of this special issue is to provide communication designers with an overview of ideas to consider, approaches to try, and resources to use when developing materials for users from other cultures. To this end, the entries in this issue should be viewed as the start of a discussion related to investigating how individuals think about communication practices in different intercultural, international, and global contexts. The editor of this issue therefore encourages readers to consider how the ideas, information, and approaches examined in these articles might be applied, modified, or built upon to extend our understanding of designing for and engaging with users from other cultures.

As noted, communication technologies often reflect the expectations and practices of the cultures in which they emerged. They can also shift the ways in which individuals interact via such technologies and lead to changes in cultural communication patterns. These ideas are central to the first entry in this issue – Xiaobo Wang and Baotong Gu’s “The Communication Design of
WeChat: Ideological as Well as Technical Aspects of Social Media.” In this article, the authors examine how WeChat – a social media technology developed in the People’s Republic of China (PRC) – both reflects and is changing communication practices in that nation. To do so, Wang and Gu analyze how different features of WeChat allows citizens of the PRC to communicate in ways that circumvent certain governmental restrictions and engage in more open dialogue around sensitive political issues. By analyzing two cases where individuals employed WeChat to criticize and discuss different government actions, Wang and Gu reveal how the technologies cultures use to communicate can challenge conventional aspects of cultural discourse and of political control in national and international contexts. In so doing, the authors also present an approach for studying uses of communication technologies within the contexts of other cultures.

It is one thing to study the technologies created by and used by the members of a different cultural group. It is another to design materials, such as interfaces, for different cultural audiences. In such cases, success involves more than understanding audience expectations related to language and culture. Rather, communication designers also need to account for the various economic, political, and technological factors that can affect if, when, and how the members of another culture use certain materials. The idea of understanding such cultural contexts is the focus of Uttaran Dutta and Swayang Das’ article “The Digital Divide at the Margins: Co-designing Information Solutions to Address the Needs of Indigenous Populations of Rural India.” In the article, the authors present the results of a case study in which a research team developed interfaces for sharing information with individuals living in rural India. Early on in the process, it became apparent that new approaches were needed to better understand the intended users – individuals who had to overcome a range of challenges involving language, literacy, and familiarity with computers. By overviewing the approaches used to gather information on this population, Dutta and Das provide examples of the research communication designers can and should do to learn more about different cultural groups and contexts of use. In so doing, the authors also reveal how integrating users into the
design, testing, and research processes can result in materials that better reflect specific international contexts of technology use.

It is one thing to design materials for the members of a different culture; it is another to collaborate with individuals from other cultures on international design projects. In such cases, both parties need to understand the other’s culture to facilitate communication and collaboration to benefit all involved. Developing such understanding involves studying the ongoing relationship between collaborators and identifying areas in which miscommunication might occur and relationships might break down. Rudy McDaniel and Lanlan Kuang’s article “Cross-cultural Cinematic Communication: Learning from the Information Design Process for a Sino-American Film Competition” examines the complexities of such cross-cultural collaborations. In their entry, McDaniel and Kuang review a case in which a team comprised of individuals in the US and the PRC collaborated to co-host an international film festival spanning two nations. During the planning process, a number of cultural and political factors emerged that could have created problems between the collaborating groups. By examining the steps taken to address such issues and to open channels of communication, McDaniel and Kuang provide an effective example of approaches for learning about cultural dynamics while engaging in collaborations. Through this examination, the authors offer strategies for researching cultural practices and preferences while working with the members of another culture. In this way, McDaniel and Kuang build upon Dutta and Das’ prior entry by expanding how one can partner cross culturally to engage in more effective international design practices.

As discussed, a first step in studying cultural communication practices involves identifying the contextual factors that can affect interactions. These factors can be cultural and linguistic, or they can be legal, political, and economic in nature. In either case, access to effective informational resources on such topics can facilitate effective designs or collaborations across cultures. The idea of resources is central the issue’s final entry: Hilary Sarat-St. Peter’s “Designing with HDR Data: What the Human Development Report Can Tell Us about International Users.” In this concluding article,
Sarat-St. Peter discusses the *Human Development Report (HDR)*, an annual publication of the United Nations Development Program. The report – which is a collection of data on different political, economic, and other factors for specific nations – provides relatively current information on a range of factors that could affect communication and design practices in different nations. As such, the *HDR* can serve as a valuable resource communication designers can consult to learn more about factors affecting individuals in different nations and regions. Using this resource effectively, however, requires an understanding of the data it contains as well as approaches to applying such information in different design contexts. Sarat-St. Peter, in turn, provides suggestions for using *HDR* data to guide communication design practices. She also notes how resources like the *HDR* can be used in classroom contexts to familiarize the next generation of communication designers with approaches for creating materials for other cultural groups.

By themselves, each entry in this issue provides important concepts and insights that can guide a range of activities related to developing materials for and sharing information with individuals from other cultures. When read as a volume, the combined ideas and approaches covered in this issue represent an important introduction to the resources, methods, and strategies communication designers can use to work effectively in different global contexts. In this way, the overall issue can serve as a foundation upon which communication designers can build and expand the ideas and approaches described here to a wider range of practices across different settings. Doing can help further our understanding of culture and communication design. It can also enhance our understanding of design, communication, and usability approaches and practices across a range of contexts associated with culture and communication.

**References**


The Communication Design of WeChat: Ideological as Well as Technical Aspects of Social Media

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ABSTRACT
In this paper, the authors discuss how the technical and ideological design of WeChat, a social media platform, enables the free flow of information within the context of heavy Internet policing and surveillance in the People’s Republic of China. Through a case study of two instances of grassroots and social activism, the authors highlight how three unique features of WeChat—Moments, Friends’ Circle, and Share to—enhance privacy and security issues related to information dissemination. In both cases examined here, the unique design of certain WeChat features enhanced privacy and security in ways that allowed for the free dissemination of information and public involvement through social media. In examining these cases, the authors hope the results of this study will further our understanding of the reciprocal relationship between technology, design, and the social context in which technologies are used.

Categories and Subject Descriptors
H.0 Information Systems: General

General Terms
Documentation, Design, Languages, Legal Aspects

Keywords
WeChat, technology design, activism, grassroots movement, Internet censorship

INTRODUCTION
This paper examines the design of the Chinese social network app WeChat in terms of its role in promoting activism and grassroots social movements in the People’s Republic of China (PRC). The authors focus in particular on WeChat’s “Moments,” “Friends’ Circle,” and “Share to” features to determine how they might affect free speech and democracy under the relatively constrained nature of online communication in the PRC.

To examine these issues, the authors performed a rhetorical review and analysis of certain design aspects of the Chinese application (app) WeChat, an online communications platform that combines the functions of Twitter, Facebook, and instant messaging into one technology. The purpose of this analysis and review is to determine the prospective political implications associated with the design features of a given technology. The over-arching questions this entry seeks to address through such an examination are:

• How has the design of WeChat enabled the app to function as a platform for activism in the public sphere within the PRC?
• How and why has the particular design of WeChat contributed to its exponential growth in popularity in the PRC and in many parts of the world?
• How is WeChat influencing the communication patterns of its users?

The authors selected a case study approach to examine these questions, which revealed that the design of WeChat seems to enable a free flow of information in a restrictive political context.

In reviewing these two cases, the authors focused their review and analysis on three unique features of the technology:

• Moments: A function that allows users to post their status or anything of interest
• Friends’ Circle: A function that allows specific, pre-set audiences of individuals to access the posts of a particular person
Through a review and analysis of these three features, the authors argue that, within the PRC’s situated context of stringent communication censorship, certain communication/media designs can provide affordances conducive to free speech that can facilitate political activism and grassroots movements.

To examine these ideas within the context of this entry, the authors have organized the article into the following four parts:

- A review of relevant literature on communication design and information flow
- An overview of the methodology (case study) and analytical approach/mechanism used to examine these two cases
- A discussion of the results of these analyses
- A summary of the conclusions the authors drew from this study based on the related discussion of the cases

Through this four-part approach, the authors help expand our understanding of how WeChat – and other kinds of communication technologies – can facilitate organized and grassroots action in particular geopolitical contexts.

**LITERATURE REVIEW**

The democratic function of Internet design, particularly social media, involves a plethora of complex issues ranging from free speech to global information flow to communication design. While all such issues are important, our literature review will focus on:

- The ambivalent nature of technology in the context of governmental control over communication
- The ideological design of technology that renders the particular technology a useful medium for free speech within the public sphere

Such a focus, we believe, will establish the foundation for this entry’s later analysis and discussion of WeChat as a forum for political activism and civic engagement.

**The Ambivalence of Technology in the Context of Government Control**

While many individuals generally believe information technologies afford wider and easier information access when situated within particular geopolitical contexts, such technologies present a much more complex scenario than meets the eye. The rhetorical invention and agency inherently embedded in the design of mobile apps and social networks can, in fact, reduce top-down governmental control. Such a concept is being increasingly reflected in and incorporated into the ideological design of many apps. Facebook, WeChat, and many other online technologies help to promote global information flow and cultural globalization through, for example, their language settings.

Much of the diffusion in the globalization of information has to do with the political parameters humans have built around territorial conceptualizations of geopolitical and sociopolitical boundaries. In “The Internet and Global Governance: Principles and Norms for a New Regime,” Mueller, Mathiason, and Klein (2007) address this territory issue and argue the Internet “incorporates an end-to-end design” and that it is “nonterritorial” (p. 244). They point out efforts to make the Internet territorial “would involve enormous transitional costs” (p. 248). This situation is already true in the People’s Republic of China (PRC), a country that spends an astronomical amount of labor (Fong, 2014) and therefore, money, on Internet surveillance. Likewise, in other nations where news media are subject to control for the sake of governmental and national interests (e.g., Singapore), the Internet is never neutral.

While social media is technologically and ideologically poised to break such boundaries, the ambivalent nature of technology renders its design a subtle technological as well as ideological act. As de Sola Pool argued as early as 1975, the integrity of national cultures, despite the interest and inherent bias of all governments, should not prevent the free flow of information, and technologies should create global, low-cost, and efficient communication systems (Nordenstreng & Schiller, 1979, p.152). The reality is that even if the technology-driven information society requires information to flow freely (Shirk, 2011), the Great Fire Wall and online surveillance in the PRC has been a continuous phenomenon that costs the country an excessive amount of money and labor. According to Fong’s (2014) report, the PRC has some 2 million people who work as “public opinion analysts” (i.e., Internet police) – a number that actually surpasses the nation’s 1.5 million active armed service members.

In a similar fashion, Qian and Bandurski (2011) rhetorically analyze how the tightening of media control in the PRC came into being due to the fear that citizens might challenge the government’s leadership in a globalized commercial era. Qian and Bandurski define the present state of the public sphere in the PRC as the “era of transition” (38) due to the tension between professionalization of journalism and governmental control. Qian and Bandurski are, however, optimistic about the capability of the Internet and the power of technology. They argue that any censorship or control will not be able to keep pace with the development of technology, implying the possibility of the potential political reforms in PRC (p. 233). According to this line of thought, the public sphere enabled by the design of technologies such as WeChat will reinforce the power of grassroots movements even if such rhetoric has always been “coded” in the PRC (p. 210). Such a sentiment is echoed by Gibson (2014), who argues online movements and activities will increasingly make political engagement transparent, therefore rendering a dying and dysfunctional state apparatus.

While we agree with these scholars and believe in the democratizing function of technology, we also acknowledge the ambivalent nature of technology. In fact, we would argue, as do others, that technology should always be examined critically and in a situated context (see Fleron, 1977; Feenberg, 1991; Bolter, 2003 and 2013; Doheny-Farina, 2003). At the same time, critical analyses of specific design practice are likely to shed light on how technology design enables its democratizing functions. Relatively little, however, has been done in relation to social media technologies in this regard. By examining a case study of certain design aspects of WeChat, we – the authors – hope to better determine if the effort of gaining democracy and freedom of speech as defined in Western perspectives has been productive in the PRC’s political reforms – particularly online grassroots movements. In examining the situation described here, we, the authors, also hope to reveal how particular technology and communication design (in this case, WeChat) provide opportunities for scholars of communication and rhetoric to engage in new theoretical discussions and analytical tasks of activism and efforts for global understanding.
The Ideology of Communication Design in the Digital Age

Communication design has become one of the primary challenges and opportunities for an international and digital world of today. Getto and St.Amant (2014) hold that effective communication design is central to maximizing the perceived benefits associated with using online media in global contexts (p. 27). Frasca (2004), in turn, relates design and communication in that the designing process involves the invention, construction, and evaluation of communications (p. 3). Information design, to Frasca, embraces two parts:

- How information is organized and how it is visually designed (p.130)
- The fact that mass media presents and shapes culture

According to López et al. (2007), the means of communication and digital technologies are significant to contemporary social movements. Similarly, Milan (2013) emphasizes the critical role that technical experts play in the emancipation of communication from governmental control or “state gatekeepers’ participation” (p.1). He defines technicians as “novel Prometheus” stealing the fire of technological infrastructures (Milan, 2013, p.1). He also argues that grassroots level activism should be put in the spotlight and that technology activism’s features, mobilizing frames, identity building, and action repertoires should be studied (Milan, 2013, p.9).

Other scholars have approached the ideological issues of design from the usability perspective. Adler and Winograd (1992), for example, defined the “usability challenge” in designing new technologies as “how best to take advantage of users’ skills in creating the most effective and productive working environment,” which should be adapting constantly to the changing rhetorical setting (p. 3 & 13.). Lazar (2007) proposes making the computing world more inclusive by developing “universal usability,” which means universal access to both hardware and software (pp. 12 & 596).

These arguments all point to the contextualized and ideological nature of technology design, which is influenced by many complex factors. A case in point is the complex context of the PRC, where, according to the Ministry of Industry and Information Technology’s stance at the World Summit of Information Society (2008), in the globalized information society, even free speech is a situated and contextualized concept. Within such a context, the design of the immensely popular social media application (app) WeChat is particularly worthy of examination. How, for example, has such a communication app, with its overt democratizing capacity, managed to survive the PRC environment of strict censorship?

Consider its size and scope. Smith (2015), for example, reported an active WeChat user population of 549 million in the PRC (Huang even put this figure at 600 million back in 2014) – a number that surpasses the 500 million users of Facebook in the country. (Such statistics are impressive as WeChat is a relatively recent creation that emerged in 2011.) While the predominant design features of WeChat represent the Chinese culture, ideology, and rhetorical traditions, WeChat’s innovation also meets global communication demands. (For example, language options allow people from other parts of the world to enjoy the benefit of the app via features such as the “drifting bottle” function that enables any user to put wishes in a “bottle” and that can be picked up by and garner a response from any random user anywhere on earth.) How WeChat design successfully negotiates between Chinese and foreign ideologies is, therefore, a particularly interesting issue for examination.

The Traditional Chinese Rhetorical Style

All communication design is inherently shaped by the particular rhetorical style of the culture that created it, and the PRC is no exception. Sun (2012) argues that “culture takes a central role in a cross-cultural design process” (p. 5). She also notes that individual users “are not passive users but active designers who shape, redesign, and localize an available technology to fit into their local contexts” (Sun, 2012, p. x).

To better understand the rationale behind the design of WeChat, it is necessary to define what we mean by “the Chinese rhetorical style.” Traditional Chinese rhetorical style defined by scholars like Kaplan (1966) and Hall (1976) as being a high-context/indirect style that relies on implicature based on context, rather than low context/ direct “say everything explicitly” style of presentation. Although such a definition risks being overly stereotypical (and Kaplan himself modified his characterization several times, collectively), the Chinese culture does seem to exhibit a tendency to be less direct or less confrontational (Kaplan, 1966). Such a rhetorical style is deeply rooted in two dominant philosophical traditions of Chinese culture: Confucianism and Taoism. (Despite certain fundamental differences, both subscribe to a more relativistic, non-confrontational, and collectivistic rhetorical approach of self mediated and self controlled speech.) Such a rhetorical style not only is evident in the daily communication among users on WeChat in the PRC, but it also serves to underlie the many aspects of design of this social media.

In the sections that follow, we will use the design of WeChat as the focus of two cases we study in to rhetorically examine WeChat’s design and identify its rhetorical implications, significances, and functions under the context of “situated” free speech of the PRC and that of globalization and international communication.

METHODOLOGICAL DESIGN OF THE STUDY

The over-arching questions this study seeks to address are as follows:

- How has the design of WeChat enabled the app to function as a platform for activism in the public sphere in the PRC?
- How and why has the particular design of WeChat contributed to its exponential growth in popularity in the PRC and in many parts of the world?
- How is WeChat influencing the communication patterns of its users?

To answer these questions, this entry presents a qualitative study that examines two recent, representative cases of activism:

- WeChat-based public reactions to the video journalist Chai Jing produced on air pollution in China
- WeChat-based public reaction to the detention of high-profile feminists in the PRC

The review of the comments WeChat users posted in relation to these two events necessitates a rhetorical discussion of the interface design of WeChat. This is because such an analysis allows us to investigate the shape public voices can take on this social media platform.
To examine the role social media played in the public discussion of these cases, we (the authors) selected WeChat as the social media outlet for our examination for several reasons:

- First, according to Kemp (2015), WeChat is the single most popular social media platform in the PRC, where it has the highest user base and usage in that population.
- Second, this particular media platform is a unique communication tool in that it combines the functions of Twitter, Facebook, and Weibo (a Chinese micro-blogging app) into one platform. It also integrates the communication capacities of blogging, text messaging, voice messaging, phone calls, video calls, information sharing, information storage, socializing, etc.
- Third, the effective design of WeChat, which has accounted for its popularity, has enabled some critical democratizing functions of this social media that render WeChat an effective medium for activism in the PRC public sphere and within the context of rather strict media control by the government there. As Chen and Reese have argued, “the power of the internet will contribute to democracy in China in the long run,” and “the internet [including WeChat] plays a facilitating role rather than being the cause of the sociopolitical changes” (p. 12)

Out of the many features and functions of WeChat, we, the authors, selected the three functions we considered as the most representative features of the app:

- **Moments**, which allows users to post their status or anything of interest
- **Friends’ Circle**, which allows users to access posts made only by the user and the user’s friends
- **Share to**, which allows users to share any posts of interest with another individual or group.

We decided to focus on these three features because they

- Are the most known and most frequently used features of the app
- Play significant roles in negotiating between the local and global rhetorical contexts
- Represent the most unique and leading features (privacy protocol, exclusive information sharing communities, etc.) of WeChat that have been adopted by other apps and platforms such as Facebook, Twitter, QQ (Chinese messenger), Renren (Chinese Facebook), Weibo (Chinese Twitter), etc.

In our later presentation of the analysis of our results, we will further explain how these three features play a critical role in information sharing and information flow.

**WECHAT: DESIGN IDEOLOGY IN ACTION**

In this section, we present two cases of WeChat use for the purpose of activism in the public sphere in the PRC. We will examine the rhetorical use of this public media outlet by WeChat users in advancing their activist goals in the PRC. To rationalize such uses of WeChat, we will also rhetorically analyze how the particular design of WeChat has enabled such use of this media platform.

**Features of WeChat**

WeChat embodies a culture that has long valued the rhetoric of silence and self-controlled or self-mediated speech that meets the social and cultural norms. On the one hand, the Chinese cultural tradition of “speech is silver, but silence is gold” correlates to the practice of inner circle sharing. This means that a particular WeChat user customizes in the “Share to” feature so that only certain users can view the content of the user’s post. On the other hand, Chinese society also has to meet the contemporary challenge of globalization. Therefore, various WeChat features and functions of friends searching are designed to enable users’ maximum communication needs through features such as “people nearby,” “drifting bottle” (a feature that allows the user to pick up a message by an unknown, random user), etc. Even Facebook, which has been famous for its global communication design and free flow of information, changed its setting in 2014 (coincidentally after Snowden case) so that users can choose their target audiences when posting any information, rendering the concept of free speech a relative and selective one. This change can be seen as representing a global trend of counter-surveillance practice in information design.

The PRC’s Internet surveillance and media control policy has bewildered many people over the years (see, for example, Obama, 2014). However, with state apparatuses and multi-stakeholders involved, technology and information are clearly not neutral, but part of the battlefield that Powers and Jablonski (2015) call “cyber war” to win power in the global arena. What then does it mean for information to flow freely in today’s world? What does it mean for our ability to judge all sides of any argument? Do governments trust their people to be responsible online citizens, or netizens? The information age certainly has given us more questions to answer. In the case of WeChat’s design, how are these questions answered? What clues can we get from the design of this app? What can we learn from the perspective of communication design in WeChat under the context of the internationalization of communication? Answering these questions involves an understanding of how the app works.

WeChat, a software that has web-based voice message, video, picture, and word communication functions, was launched by the Chinese company Tencent on January 21, 2011. According to Huang (2014), it now has over 600 million users. This app allows users in over 100 counties to register an account via phone number (WeChat, 2015). Users can also register for a WeChat account using their QQ (an earlier-generation communication app by the same company that produced WeChat), Facebook, Twitter, or LinkedIn account or any email address. WeChat also accommodates multiple platforms and can be downloaded on Android, iPhone, Blackberry, Windows Phone, Symbian phones, and Apple Watch. Web-based and OS X WeChat versions are also downloadable with the scan of a QR Code from one’s mobile phone (WeChat, 2015). And although Facebook is blocked in the PRC, WeChat allows users to register with Facebook, LinkedIn, and other accounts, which ensures more globalized access, an example of the democratization function of technology at play.

Interestingly, WeChat’s logo design incorporates an international element in that it employs the more universal visual language. The logo features two bubble-like symbols signifying human communication, and the design varies a little depending on the platform. WeChat also avoids using Chinese characters in most of its designs except in some versions the Chinese characters literally “WeChat” is shown (see Figure 1).
WeChat’s promotional rhetoric is “the new way to connect.” The innovative design of WeChat’s interface, moreover, enhances the notion of international connections to the outside world and helps to overcome communication barriers caused by different media platforms. Other aspects of WeChat’s design also show seemingly random but intentionally democratic features conducive to open communication flow. WeChat, for example, enables international information flow by features such as friends radar, Scan QR Code, People Nearby, etc. Additionally, features such as “Moments” and “Hold-to-Talk” have been adopted by other apps, such as Weibo (the Chinese counterpart of Twitter), Facebook, to name but a few. In many ways, it’s no small feat that an app from the PRC, where communication is largely controlled and censored by the government, has become such a popular phenomenon worldwide. The careful, ideologically democratic design is certainly one major reason for this success.

**WeChat’s Moments, Friends’ Circle, and Share to Features**

While many of the aforementioned features in WeChat are conducive to the democratization function of the social media app, we selected the three features—“Moments,” “Friends’ Circle,” and “Share to”—for a very important reason: they ensure the privacy and security of information sharing. In the heavily policed Internet environment of the PRC, any Internet post runs the risk of being censored by the Internet police or being used for ulterior motives by people one does not know or trust. Therefore, the fact that WeChat allows users to limited access to the information they post to only handpicked friends makes it of particular importance to users there.

Unlike many blogging or micro blogging apps, where any information an individual post is generally open access for anyone to see, WeChat gives the user control over who can access information shared through it. In so doing, WeChat empowers the user with the right to decide who will have access to posts. This security assurance paves the way for free information sharing among the user’s Friends’ Circle. The user’s friends can then decide to share this information within their own Friends’ Circles. One advantage of this privacy measure is that it is very hard to trace the origin of a post and identify the original poster. This feature gives the user an enhanced sense of security and enables the user to post information more freely.

WeChat’s main interface contains four central items:

- **WeChat:** Where users engage in private chats with a friend or a group that one has joined
- **Contacts:** A feature that stores all of the user’s contacts, much like the contacts listing on a mobile phone

As shown in Figure 2, the image on the left shows the “Moments” feature as part of the “Discover” function, which also contains the following features:

- **Scan QR Code**, which allows the user to add a friend by scanning that friend’s QR code for her/his WeChat account
- **Shake**, which allows the user to shake his or her phone and find any WeChat user shaking the phone at the same time (this enables the user to quickly find people the user might not know)
- **People Nearby**, which allows the user to find people who are in relatively close proximity
- **Drift Bottle**, which allows the user to either throw a bottle with a private note into the “sea,” to be picked up by any random WeChat user or to pick up a bottle with a private note from a stranger once an individual picks up a bottle, that person has the option of contacting the person who threw it/sent the original message or just throw the bottle back into the sea
- **Games**, which a user can play privately or with friends

“Share to” is an important feature within “Moments” function, for the “Share to” feature permits the user to select the particular people he or she wants to allow to access a given post. As shown in Figure 3, once a user is in the posting interface, that person may click on the “Share to” feature to choose whether to share this particular post with all other WeChat friends (“All”), or selected friends (“Share to”), or the exclusion of certain friends (“Don’t Share”). Again, placing the control of access in the hands of the user provides a guaranteed assurance for security and privacy.

**Figure 2: WeChat’s Moment Feature**

- **Discover:** An option that contain several features, including “Moments” – a feature that allows the user to socialize with other people, make friends, and share information
- **Me:** A feature that contains several other features including “Settings” that stores all the user’s account information

**Figure 3: WeChat’s Moments and Share to Features**

In 2014, Facebook adopted a similar feature that allowed users to share photos and other information only with those they wanted to. In the “Share to” section, a WeChat user can create different groups of audiences at his/her own choice. While there is often no necessity to share with a group, creating these groups results in
the creation of temporal discourse communities, which gives one a sense of collective belonging. Such a design is in accordance with the traditional notions of collectivism in the Chinese culture, where people often seek being part of a community and where community norms are upheld over personal preferences. And even though China is becoming increasingly individualistic, “the fact remains that China today is more collectivistic than individualistic” (Gallo, 2011, p. 118). In addition, creating a community and sharing particular information with the community gives the user a sense of identifying with a collective entity as if the information, once shared, becomes accepted knowledge of the group.

Another cultural factor at work in this case is power distance, which defines the relationship between two people based on each person's place within a given social hierarchy of power. The greater the difference in power status between individuals, the more distance between them (Hall, 1976). In terms of communication behavior, this factor often means people from lower hierarchy level should be respectful of and obey those from the higher levels of the hierarchy. For instance, students should obey and respect professors rather than challenge them; children should do the same to the parents; citizens to the government; etc.

The concept of high power distance is often important in and highly observed in a high-context culture like the Chinese culture (see Hall, 1976). In the case of WeChat design, this approach to audience selection and group creation allows the user to form power distance with particular audience/people she or he doesn’t want to share information with. The decision to hide posts from particular audiences, for example, can be seen as an action that creates power distance situations and may be attributed to different scenarios: employees hiding posts from bosses, students from teachers, and/or children from parents.

Within high-context Chinese culture where power distance is a very important cultural factor, the functionality of this “Share to” feature affords the users the flexibility in determining their mode of information sharing. It is interesting to note, however, that in April 2014, Facebook also changed its post settings so that now the two apps (WeChat and Facebook) are very similar in terms of system functionality for information sharing. As Wagner (2014) reported, Facebook decided to test privacy settings so the users can decide who will have access to their posts. The earlier setting design came with only two options for audience: “public” or “friends.” Later, it was expanded to specific set audience groups that the user can define and create (see Figure 4).

WeChat’s “Moments” feature, which is comparable to Facebook’s “status/posts” feature, is probably the most important and unique design by WeChat in terms of information sharing and grouping features. “Moments” allows the user to post pictures with descriptions or commentaries. The user can also post purely textual “Moments.” A short click on the camera icon on top right of the screen will give users the option of choosing an existing photo from a WeChat photo album or taking a new photo with the camera function (see image on the right in Figure 2). Holding the camera icon will bring up the text box for users to post texts as they wish without posting a picture and or image.

Because the content users posts to the Internet immediately becomes public and is subject to censorship, posting any sensitive information is a risky act in the PRC. Recognizing this common concern, WeChat designed the “Moments” feature in such a way that what an individual posts is visible only to those who that user has previously friended. Moreover, the comments friends add on the user’s original post are visible only to those persons the user has friended. This “Moments” feature is one of the powerful communication functions that enable WeChat users to communicate freely, albeit in a private circle, under the PRC’s context of heavy policing of the Internet. For example, one can post a moment of “sensitive” political criticism only to his or her Friends’ Circle, which means a customized audience setting that only enables mutual friends to view each other’s likes and comments about any post.

This design on WeChat can be seen as rhetorical invention that fosters a range of communication, both activist and nonactivist. Users can repost any information they want to share or discuss with public or a set audience in their friends’ circles. If the information is somehow sensitive or political, the user generally shares that information with only certain audiences. The “Moments” feature also allows users to post up to nine pictures with a caption that does not really have a character limit, which is a rather high information load. (For example, individuals can post nine images with visuals and/or words together with a caption that describes what is happening in different images, and there is no word limit for these posts.) Such a feature renders free speech, and thus the democratic function of the Internet/information technology, possible, albeit to a rather limited extent and in a very situated context. Nevertheless, technology designs such as WeChat’s “Moments” feature facilitate conversations that lead to grassroots movements, which help to improve China’s environmental conditions, press freedom, communication freedom, and other important human rights.
The effectiveness of both the “Share to” and the “Moments” features depends on the third important feature of WeChat: “Friends’ Circle.” The privacy and security of the user’s information sharing directly relates to how the user defines her or his “Friends’ Circle” in the app. With full autonomy in defining the audience groups in one’s “Friends’ Circle,” the user has full control over exactly who has access to the information for every post. Furthermore, the user has the power to define the profile settings for each of her or his friends in terms of whether to block a particular friend his “Moments” or to block this friend’s “Moments.” With these aspects in mind, it is obvious that WeChat’s “Moments,” “Friends’ Circle,” and “Share to” features are conducive to free speech and democracy in the PRC, and they help to provide a transnational platform of activism and grassroots movement in a nation that has been yearning for basic civil and human rights.

Rhetorical Functions of Communication Design

The rise of WeChat as a social media and communication platform in the PRC is history making in terms of free speech and information sharing. WeChat’s features provide users with an outlet to voice opinions and share information with a targeted audience set by the users themselves. The in-group design, which allows users to set their own parameters for the audience circle, represents a step ahead of other apps and is revolutionary in solving the privacy and security issue of online posting in heavily monitored environments. The information flow between the sharer and the audience is done on a one-on-one basis.

These system features manifest a strict hierarchy between the government and its citizens, the relationship of which is often analogous to that of parents and children in the Chinese culture. This hierarchy is often expressed as respect, loyalty, obedience, and other national ethics that should be performed by each citizen. Those who do not obey these national traditions are considered to be immoral and will be condemned by the public. Such a design rationale also speaks to the unfortunate reality of government surveillance on information flow.

The “Friends’ Circle” function, together with WeChat’s “Hold-to-Talk” feature, “Drift Bottle” feature, and other features, reflects a deliberate and ideologically driven democratic design for better affordances for PRC citizens’ free speech right. Interestingly, the world’s largest social network, Facebook, has revised its privacy setting frequently in order to meet the demand of users. As two apps on the polar opposite ends of the cultural spectrum, WeChat was designed to protect users’ private communications among common friends, even though it has various out-group functions that enables users to access information and make friends with people all around the world. Facebook, in contrast, seems to be designed to be an open platform at its outset, and over time, had to change its functions frequently to ensure better privacy.

Bolter and Gromala (2003) claim we have to “master techniques to render digital media transparent to the user, but we must also render the media visible and reflective of the user” (p. 6). The design of WeChat is an example of successful interface design in the digital era due to privacy concerns caused by surveillance. WeChat’s design not only echoes the idea of Getto and St.Amant (2014) on the maximum benefits users can get via the app, but it also manifests how media can shape culture in Frascara’s (2004) view (p. 185). Additionally, WeChat is playing the indispensable role in contemporary social movements’ emancipation of communication from governmental control that López et al. (2007) and Milan (2013) have argued respectively. The study presented here examines two cases that represent a response to Milan’s call for research on grassroots level activism and social movements mediated by technology.

TWO CASES OF ACTIVISM AND GRASSROOTS MOVEMENT

To illustrate how activism and grassroots movements in the PRC can occur among users of WeChat, we will provide an overview of two recent cases where the general public in the PRC took advantage of the democratizing features of WeChat to effect criticism of unjust institutional behaviors, of the unfair trial of female activists, of environmental pollution, and of lack of free speech. These two cases—a video report on air pollution in the PRC by a well known journalist and a report on the detention of five feminist activists—are selected for studying these ideas for several reasons:

• Both are high-profile cases that have captured the attention of a large percentage of netizens in the PRC.

• Both cases have prompted a great deal of responses on WeChat and on the Internet in general, which provides ample raw data for our study’s purposes.

• Both cases involve sensitive political topics in the PRC.

• Because both cases involve highly sensitive political issues, Internet commentaries by WeChat users require a heightened sense about the potential political consequences and careful attention to the rhetorical strategies used to discuss these situations.

• Both cases are good examples to showcase how WeChat’s ideological and technological designs are at work in protecting its users’ privacy and security when users exercise their right of free speech. Although these cases are from a relatively public group, they require users to join the group before they can become part of the Friends’ Circle.

Thus, information gleaned from a review and analysis of these two cases can provide researchers with insights relating to similar kinds of social media use in the future.

CASE 1: UNDER THE DOME

The first case examined in this entry involves a critical commentary in the guise of a video news report entitled “Under the Dome.” This video tackles the issue of the ever increasing smog problem that is plaguing most of the major cities in the PRC. The video was first broadcast via the Internet in February 2015 and was banned after several days. In the video, the journalist Chai Jing (the producer of and narrator in the video) presents a series of statistics and facts to dissect the grave issue of smog as a way to call public’s attention to the issue. A more important but subtle purpose of the video was to criticize the government for its inability and lack of action to solve this problem.

Responses to the video varied: some supported Chai and hailed her as a champion for environmental protection. Others accused her of harboring ulterior motives (e.g., Some posts claimed that Western allies were trying to overthrow the central government by supporting Chai financially and politically). While the production and the broadcast of the video had nothing to do with WeChat, its
dissemination and its subsequent discussion by the general public was closely linked to this technology.

The democratizing function of WeChat’s design allowed the general public to engage in critical discussions within a relatively safe online environment. A few particular items are worth noting in relation to these discussions. First, despite the varied responses to the video—some supportive, some critical, and some neutral, but nearly all critical of the government—one thing is certain: the unique media outlet of WeChat made it possible for an unprecedented number of netizens to engage in such discussions.

In pre-WeChat era, although the Internet was readily available and micro-blog systems such as Weibo (the Chinese version of Twitter) were able to reach a large audience, this reach was nothing comparable to what WeChat offers to users. WeChat is designed with such appealing convenient features—such as “Friends Nearby”—that an overwhelming majority of cell phone users in the PRC are using the app. Additionally, WeChat’s privacy and security settings are designed in such a way that users feel a sense of security when voicing their opinions in a private circle. Such a scenario would be unimaginable even a few years ago (i.e., before WeChat). Figure 5 and Figure 6 illustrate one particular netizen’s defense of Chai Jing’s perspective.

Equally worthy of note is the communication style netizens of the PRC used in discussing this case. To begin, there was a great deal of discussions of the video, and these interactions can be classified into three categories:

- Those supportive of Chai Jing
- Those critical of Chai Jing
- Those who were neutral with regard to Chai Jing

Interestingly, all three kinds of discussions were critical of the inaction by the government in relation to environmental issues. For example, one user by the account name “Pretending to Be in New York City,” published a post titling “Those who blame Chai, I want to ask you only one question,” arguing against those who criticized Chai Jing (see Figures 5 and 6). This person’s discussions mainly focused on the issues of how and why political corruption in the PRC caused pollution, how to solve the pollution problem, whether Chai was supported by the U.S. government to launch a deliberate attack on the government of the PRC caused pollution, how to solve the pollution problem, whether Chai Jing (see Figures 5 and 6). This person’s discussions mainly focused on the issues of how and why political corruption in the PRC caused pollution, how to solve the pollution problem, whether Chai was supported by the U.S. government to launch a deliberate attack on the government of the PRC, whether she made this video with the ulterior motive to seek fame, etc.

In posting such comments, “Pretending to Be in New York City” (“Pretending”) first apologizes to his audience noting he is sorry for the disturbance because recently everyone’s screen is bombarded by discussions of this video or Chai Jing, so much so that it is annoying to even look at such posts. He says, “I am sorry you might feel tedious about the issue all over your screen, I still want to say something about Chai. Actually, this is about those comments, verbal abuses, unfriendly and wild guesses since yesterday.”

“Pretending” then acknowledges that some people have criticized Chai for stirring ill will between the government and its people while others claim that Chai is trying to help the government to sustain a stable society. He argues that such different opinion groups suggest that, in China, people are being too blind, too harsh, too cold, and most importantly, and too ignorant—so much so that people have lost their kindness and reason to extreme opinions.

“Pretending” also acknowledges that netizens are attacking Chai for various reasons: her daughter’s US citizenship, her communication strategies, her lack of scientific reasoning and proof in her investigation of the smog issue, etc. “Pretending” goes on to say that some people are even criticizing her because they are simply jealous of her and that jealousy made themselves abnormal beings in such an abnormal country full of abnormal people.

“Pretending” also hails Chai as normal and asks this question of those who criticize her: “Do you want the smog issue to be solved or not?” He further states that if Chai’s critics do not want to go out in Beijing, Shanghai, Nanjing, and Hangzhou to breathe in highly polluted air every day, then why the details and technical issues in the video should matter. “Pretending” points out that this video calls for people to continue their efforts against pollution but that the criticism has been so much so that key points in that antipollution video have been lost on its viewers. He bluntly criticizes those who do not care about living conditions, about news, or about hot topics in their daily routines but instead jump out all of a sudden to criticize a video made for fighting against pollution. He asks, ever so bluntly, “Are you all crazy?”

“Pretending” also calls for unbiased critical thinking to abandon political stances and to take actions as citizens in the PRC have a common stake in environmental protection.

Such a straightforward communication style may not be in accord with the traditional perception of the often circular and respectful style of communication adopted by the Chinese culture. According to Kaplan (1966), Chinese rhetoric and communication style, due to its cultural thinking pattern, is not one that tends to express ideas directly. It is often indirect and even circular when compared with Anglo-American straightforward directness. As a result, the Western audience of Chinese rhetoric and communication must often exert extra effort to interpret the information provided by the speaker or writer. However, “Pretending” has provided an opposite style in his direct and straightforward communication with his audience. As we, the authors, have observed in many online posts, this trend toward the Westernized direct style is increasingly common in the communication by individuals in the PRC today, especially in the online environment.

The open communication setting afforded by media platforms such as WeChat has, to some extent, effected a more straightforward communication style. Part of the reason for such a blunt style may be attributed to the user’s sense of security afforded by WeChat’s design. Had the communication medium been a public online forum, “Pretending’s” rhetorical style might have been more subtle and

Figure 5: A Netizen Comes in Defense of Chai
Figure 6: A Chinese Netizen Comes in Defense of Chai

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deliberate. In addition, PRC citizens’ increasing awareness of civil rights and human rights may also have contributed to the change of the rhetorical style.

CASE 2: THE DETAINMENT AND RELEASE OF FIVE FEMINIST ACTIVISTS IN THE PRC

WeChat’s role as a facilitator of democratic design and civic engagement is also well illustrated in the recent case involving five feminist activists in the PRC (see Figure 7).

This post narrates how the five feminist activists in the PRC were released after being detained for 37 days because they have publicly protested against institutional practices (e.g., hiring practices) that favor men over women. The author of the post praised the unprecedented courage of the five activists and concluded that this event proves the power of media and public engagement in promoting transnational feminist movement: “the overseas media outlets; international organizations and public figures (including politicians and human rights activists); and the reports, support for the activists, and protest against the government by the general public all greatly facilitated the development of the incident toward a positive outcome...” (translation ours). The author holds that the government of the PRC is not an iron government because today’s decision is the result of inefficient management between and among different institutions; the future of Chinese feminist movements and women’s rights is for all classes and grass roots to help the government to improve laws and regulations in order to protect women’s rights; and the author emphasized the silence of United Nations in this event compared with all sorts of international support from other organizations.

At the end of the post, there is a QR code for all those interested to follow this account. Above the code, are many links on how international efforts are made to help release these five activists. These include links to the names of the five activists, letters from their family members, letter by over 24,000 lawyers to the Ministry of Public Security, a copy of the note of support Hilary Clinton’s posted on Twitter, and so on. The actual release of the feminist activists from joint effort and the means through which this grassroots movement succeeded could be seen as an indication of WeChat’s rhetorical impact on social improvement and people’s democratic engagement in the PRC.

Several aspects about the content and the rhetorical style of the post in this case are worthy of note here:

• The content of the report/commentary involves extensive detail surrounding a highly sensitive political incident. The relatively long post (i.e., a post containing many lines of text and several characters) includes details about who the five feminist activists are, what they did, what led to their arrest and detention, and what the accusations were—all information that the government would rather hide.

• The report contains numerous comments on the incident, and many of them are direct criticism of how the government handled the case. For example, the author states, in a very straightforward manner, that the arrest was “groundless” and that the accusations were wrong.

• The post contains a rather informative discussion of the status of the feminist activist movement in the PRC, and this is the kind of information that the government of the PRC would probably rather not see in public forums.

• The post contains links to sensitive and often politically censored websites that promote activism and free speech. For example, the last part of the article includes links with the
The rhetorical style of the post, much like what we saw in such censorship very susceptible to government censorship and risk being deleted by in online public forums such as blogs would easily make it government of the PRC would typically do everything to associated with Western discourse. 

In addition, WeChat’s protection of user’s privacy makes it with a simple click of the app’s “Forward” button. post can forward it to her or his “Moments” or “Friends’ Circle” makes it easier to disseminate such posts as anyone reading the public. On the other hand, WeChat’s communication technology may set it so that her or his “Moments” are not viewable by the top-down control. On the one hand, the publication’s forum, or using group names also enables group privacy that restricts by scanning QR code (to be explained in the next paragraph) and/or using group names also enables group privacy that restricts top-down control. On the one hand, the publication’s forum, (WeChat’s “Moments,”) is not always a public forum as the user may set it so that her or his “Moments” are not viewable by the public. On the other hand, WeChat’s communication technology makes it easier to disseminate such posts as anyone reading the post can forward it to her or his “Moments” or “Friends’ Circle” with a simple click of the app’s “Forward” button.

In addition, WeChat’s protection of user’s privacy makes it rather difficult to track down the original poster of an item. This particular case, however, is slightly more complicated. The author of the posted examined here published a QR code, the unique code that identifies her/his WeChat account, at the end of the article. Does the author believe that (s)he is completely shielded by WeChat from revealing her/his identity? Probably not. Of many possible reasons, a probable one might be that, ever since the emergence of WeChat, there have been so many posts of similar nature and rhetoric that WeChat users are accustomed to such reports. Gradually, users developed a sense of security that such reports and the related rhetoric they use are acceptable and users’ right of free speech would be protected until they see or hear a case like that of the feminist activists. Although this may be a false sense of security, there is no denying that WeChat has played an important role in fostering such a perception, however illusive that might be.

DISCUSSION
Interestingly, the collective force of public rhetoric and grassroots social movements, partially enabled by the design of WeChat, resulted in two rather different scenarios for the two cases we discussed earlier. In the case of the video report on the smog situation in the PRC, its dissemination became so pervasive that public rhetoric seemed to be getting out of control, so much so that the government eventually decided to ban the video. Nevertheless, because WeChat was the main channel for this dissemination, it reached a wide audience before the government was able to take any action. Had the dissemination channel for this video been a more public forum such as Weibo (the Chinese version of Twitter) it is unlikely this video would have reached such a large audience.

The second case, the feminist activist case, had a more positive outcome. The combination of public rhetoric and the social grassroots movement led, in part, to the eventual release of the five feminist activists after 37 days of detention. Such a scenario would have been unimaginable even a few years prior to these events.

That the two cases had very different results is certainly thought provoking. Part of the reason, we believe, has to do with the relative cost for the government to stop such posts from getting out of hand. In the smog case, although banning the video report would cause further public outrage, the negative cost of doing so is far less than taking actual measures to solve the smog issue. In the feminist activist case, releasing the activists to appease the public represents far less political cost than continuing to detain them and causing further public outrage. In both cases, the role of WeChat to enable widespread public discussions and further social grassroots causes is undeniable.

These cases, we believe, have rather significant implications for future technology design for a number of reasons. To begin, both practitioners and researchers of technology design should carefully rethink the potentials of technology, the ambivalent nature of technology, and the role of ideology in the design of technology. The complex situational context of technology use dictates that technology design should carefully incorporate ideological considerations. Such considerations include:

- The users a technology serves
- The social and political context in which the technology will be used
- The restrictions and constraints users will encounter
- How technology design could best enable users to navigate complex social and political contexts

In the case of WeChat, its design has obviously incorporated such careful considerations to negotiate the delicate issues of privacy and security and means of information dissemination under China’s complex social and political context.

Additionally, technology designers and scholars should carefully reconsider the boundary between public and private spaces in social media platforms. Such spaces will be defined differently within different social and political contexts. This boundary is deliberately blurred in WeChat’s design of the public and private spaces within the app. What might be intended as a private space could easily be turned into public space and vice versa. For example, the “Moments” interface could be construed and used as either a private space or a public space depending on the nature.
of information sharing features selected by the user. This flexible design is a clever response to the PRC’s political context where such spaces always tend to be (intentionally or unintentionally) ill defined.

Next, good, careful technical design can circumvent filtering mechanisms. For example, the “Friends’ Circle,” “Moments,” and “Share to” features of WeChat are aptly designed so that they turn what is public dissemination of information into a private act. While sharing information with friends within WeChat seems a very private maneuver, in reality, it fulfills the functions of public information transfer yet circumvents government’s filtering mechanisms, thus avoiding the largest pitfall in privacy and security of earlier generations of social media.

Also, with the plethora of social media available today, the design of a particular social media outlet should always incorporate considerations of connectivity to other platforms. For example, WeChat’s “Moments” and “Share to” features provide easy options to connect with other social media platforms such as Weibo and Facebook. Users have the option to decide in any given case whether to publish the information on more public forums such as Weibo.

Within such contexts, good technology design should enable users to maintain control over their own data/information. Within the Chinese context of heavy Internet policing and surveillance, this is an especially important feature valued by users. WeChat provides users with an easy means to transfer, store, edit, delete, or republish their posts based on their own assessment of the potential risks and gains within their particular communication contexts. This active control by users has, in a large part, contributed to better privacy and security of information sharing.

Finally, technology designers should be constantly looking for ways to improve their design to enable better and safe use by the public. This approach entails careful consideration of user feedback and continuous incorporation of users’ concerns. Although designed for very similar purposes as WeChat, QQ (WeChat’s predecessor) did not pay as much attention to privacy and security concerns of users. Therefore, it did not achieve the kind of popularity that WeChat.

It should be noted that negotiations between private and public spaces, between the government and the public, between sensitive and acceptable speech, etc. are likely to continue in the PRC and in other parts of the world. To design effective technology, all stakeholders within the communication context—designers, researchers, activists, and users—should work together to negotiate the complicated territory of social media. While positive results are never a guarantee, careful technical and ideological considerations in the design process will steer us in the right direction toward context-sensitive, user-centered design.

**CONCLUSION**

On the 2015 Chinese Lunar New Year’s Eve, the CEO of Facebook, Mark Zuckerberg posted a video on his wall, delivering New Year’s greetings and his wish for the citizens of the PRC to be able to enjoy access to Facebook. Meanwhile, WeChat is making history in its own way under special national contexts. The communication design of WeChat reflects the political and economic conditions of the contemporary world. The indispensable role technology and communication design plays in global communication is manifested in WeChat’s features. However, inherent and traditional sociopolitical and cultural factors are clearly still at play within local and global communication contexts as is shown by these two apps.

Situated free speech/democracy remains more or less the same at this stage of history, whereas evidences of convergence are gaining ground thanks to the help of universal and global usability design of such apps. People in different parts of the world are reaping the benefits of information and multicultural literacies and free information flow via the help of apps like WeChat. As a result, humans are inching their way toward a more globalized communication environment of convergence owing to the democratic aspects of technological design. However, it is all too naive and early to assume that local geopolitical contexts will soon release its hold on the situated aspects of free speech and communication.

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The Digital Divide at the Margins: Co-designing Information Solutions to Address the Needs of Indigenous Populations of Rural India

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ABSTRACT
This paper presents the results of a case study focusing on information and communication design in indigenous villages of rural India. The villages examined for this study were geographically remote and socio-economically underdeveloped, and their populations represented individuals who possessed low levels of literacy, limited language proficiency in English and mainstream Indic languages (e.g., Hindi and Bengali), and limited familiarity with computer us and computing practices. The authors sought to examine this context by conducting ethnographic field research involving a variety of methods. Through these approaches, the authors found a range of cultural and contextual factors are instrumental in shaping and co-creating communication design solutions for underserved international audiences. (Such factors include such as long-term research engagements, in-situ design development, and embracing dialogic and reflexive praxis when designing for local audiences.)

Categories and Subject Descriptors
H.0 Information Systems: General

General Terms
Documentation, Design, Languages

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International communication, Intercultural design, Visual design, Prototyping, Culture and usability, Localization

INTRODUCTION
Increasingly, communication design scholars are arguing in favor of community-centered design practices that address local needs for information in culturally meaningful ways (Dearden, 2008; Mazé & Redström, 2007). Ideally, such approaches should bridge digital divides and bring about social justice in ways that create more even and ready access to information, foster social economic development, and empower the underserved. Thus, such approaches have the potential to legitimize cultural voices long marginalized by a range of factors (Merritt & Stolterman, 2012). Unfortunately, attempts to address such factors through communication design practices have been relatively unsuccessful (Smyth, Kumar, Medhi, & Toyama, 2010) in large part due to a top-down approach to design (Anthopoulos, Stozos, & Tsoukalas, 2007; Richards, 2005).

The challenge for communication designers involves identifying approaches that can assist with the creation of materials that effectively meet the needs of different international audiences. The first step in addressing this situation is research that focuses on identifying the conditions under which different populations access, use, and exchange information. Only through such user-focused approaches can communication designers begin to understand the needs of users in other nations, regions, and cultures. Such focused understanding can, in turn, serve as a foundation for crafting materials that better meet the communication needs and expectations of different audiences around the globe. This entry represents one such attempt to engage in research that seeks to better understand the specific needs, expectations, and contexts that can affect communication design practices in global contexts.

This entry presents the design processes related to and the initial results of a case study focused on examining the factors affecting the communication practices and expectations of individuals living in the villages of Purulia, an economically underdeveloped district in rural eastern India. To examine this context, the authors used a variety of methods (a process noted by Mazé & Redström, 2007) in order to gain a more complete understanding of how communication design decisions made in and communication design strategies used in such contexts reflected local conditions. Through identifying
and understanding aspects affecting such processes, the authors devised approaches communication designers could use to create informational and instructional materials and design interfaces that effectively meet the conditions under which local individuals use such items.

**LITERATURE REVIEW**

The context examined by this case study is a complex one that requires individuals to understand how a number of factors can affect design processes in certain international settings. Specifically, communication designers need to understand how the processes of information and communication design (ICD) needs to be adapted for developing countries. The central idea is to better understand approaches that involve

- **Localocentric design processes**: These are community-centric inclusive design processes that acknowledge and address local contexts, voices, and issues.
- **Reflexive communication design processes**: Such processes involve systematically attending to the practices of problem solving and co-creation, and they require communication designers to introspectively examine how meaning is produced within particular socio-cultural and political contexts.

Both practices can help researchers understand the factors and forces affecting access to and uses of information in different contexts. As a result, they can help communication designers develop informational materials that effectively address a range of local contexts in various international settings.

**Information and Communication Design in Developing Countries**

Research has noted the digital divide shapes and exacerbates inequality in ways that affect access to technologies, materials/resources, education, and systems of power (Blake & Quiros Garzon, 2010; Byrne & Sahay, 2007). In the last few decades, different individuals and organizations have undertaken a range of design projects that attempt to address such inequities in developing countries. These projects encompass a number of areas and objectives including attempts to improve healthcare, initiatives to provide access to education, and collaborations designed to address environmental sustainability (Sirigimidi, 2009). Many of these projects sought to bridge information gaps and reduce socioeconomic injustices in underserved regions of the world. They also sought to address areas where access to materials and information often flowed in a way that was

- **Modernist**: Focusing on the advancement of technologies and enhanced production-processes to ensure economic development
- **Top-down**: Decided by and dictated by dominant stakeholders (McIver, 2003)

Unfortunately, international attempts to address such factors in information and communication design remain largely limited in efficacy with roughly 85% of such projects being unsuccessful (Smyth, Kumar, Medhi, & Toyama, 2010).

Such failures often result from design approaches/interventions that fail to address the contextual realities in which individuals access and use information (David, Sabiescu, & Cantoni, 2013). Problematic factors in these settings include low levels of literacy, language barriers, limited understanding of or experience with computing technologies, limited access to resources, and non-supportive governmental policies (Dyson, 2004; Janni, 2005).

To overcome such barriers, scholars in a number of areas are increasingly advocating that communication designers embrace multidisciplinary/transdisciplinary research approaches and then integrate the results of such research into design practices (Mazé & Redström, 2007). Such a move could provide communication designers with approaches that can help them better understand both local information needs and information seeking behaviors. Communication designers could use their enhanced understanding of such factors to develop materials that better address the needs, expectations, and conditions different international users associate with the communication process in different settings (Janni, 2005).

**Internationalization and Intercultural Aspects**

Today, the internationalization of information and communication design is central to understanding social inequalities and injustices in global contexts. Such a perspective marks a shift from earlier approaches that often favored universal design practices dedicated to creating generic and culturally neutral materials for wider global audiences (Young, 2008). Contemporary scholars (e.g., Sun, 2012) have challenged this approach advocating increased importance on understanding local contexts and local cultures. The objective is to create design solutions that effectively address the expectations of specific cultures versus creating a generic approach for communicating with multiple cultures via the same product.

For a more localized approach to be successful, communication designers need to expand their understanding of different local cultures – and the contexts in which those cultures use information. Communication designers should therefore focus on interacting with the local population to determine local information needs. They also need to learn how the social, political, and historical aspects of a local culture can affect the ways in which individuals communicate and use technologies to interact (Young, 2008).

Identifying, understanding, and addressing local cultural factors often require communication designers to use different theoretical frameworks to guide design processes (Bennett, 1986; Gautam & Blessing, 2009; Marcus, 2003). Such a critical intercultural approach studies how underserved populations negotiate with conditions of marginalization by engaging with and studying contextual issues. This approach requires communication designers to study structural (e.g., resource-scarcity, technological inaccessibility, etc.) and communicative (e.g., illiteracy and lack of language proficiency) barriers and contextual meaning making process (e.g., how meanings of visuals are socially constructed and shared by community members). It also allows communication designers to create spaces of discussion and collective decision-making to bring about social equity (Dutta, 2011). In doing so, this co-creative research calls for integrating various intercultural practices (Sorrells, 2012) into communication design processes. Such practices include the following:

- **Inquiry**: Learning other approaches and perspectives by engaging with other cultures
- **Dialogue**: Listening to different perspectives and approaches to creatively interact with community members
- **Action**: Contributing to the creation of a just and equitable society and challenging power imbalances in a society
• Reflection: Being vigilant about actions while learning from introspection/reflecting on our decisions

The interpretivist framework of intercultural communication also calls ethnographic field-research that helps communication designers understand contexts and create thicker descriptions (Martin & Nakayama, 2013). Such research involves doing participant observations, interviewing different individuals, and engaging key populations in co-design activities. The benefits of such research include opening avenues that foster both collective decision-making and group problem solving activities.

In relation to the approach described here, certain scholars have argued that reflexive engagement with local people is necessary. (Such an approach involves introspectively examining one’s own cultural baggage, assumptions, and preoccupations to systematically attend to knowledge co-creation process.) This is because such engagement helps one better understand how a given community perceives and participates in the communication process in different contexts. Accordingly, such an “insider’s perspective” is crucial to designing materials that meet audience expectations associated with such contexts. For this reason, as Toyama (2010) notes, interaction with and participation in the community for which one is creating informational solutions is essential to designing materials that meet the needs of that community—a point echoed by Gigler (2004). Historically, most of the conventional models of knowledge production systematically delegitimized and labeled locally situated knowledge system as inferior and pseudoscientific. Consequently, many of the earlier approaches to design embraced the modernist approach and overlooked indigenous knowledge, wisdom, and communicative practices when designing materials for audiences from other cultures (Harding, 1998). By challenging this modernist approach, critical scholars such as Olphert and Damodaran, (2007) and Braund and Schwittay (2006) argue in favor of inclusion of local knowledge and cultural practices in information and communication design processes. They further note that a respect for traditional knowledge system would allow marginalized voices to play a larger and more active role in the communication design process and create spaces for knowledge sharing, co-creation, and co-creation (Kapuire, Winschiers-Theophilus, Chivuno-Kurio, Bidwell, & Blake, 2010). These interactions between mainstream technology and indigenous wisdom are instrumental in building avenues for creating newer communication design approaches (Eglash, 1999).

**Communication Design Approaches**

Critics of the modernist approaches to design (e.g., Nieuwma, 2004; Schuler & Namioka, 1993) emphasize that communication designers use a processes of participation, co-creative actions (both one-to-one and collective settings), and decision-makings to facilitate meaningful social change that involves both the designers and the intended audience (Kapuire, Winschiers-Theophilus, Chivuno-Kurio, Bidwell, & Blake, 2010). These individuals argue Eurocentric assumptions and externally driven communication design strategies embraced a trickle-down approach (Puri & Sahay, 2007). This approach, moreover, is one that disempowers local communities and created dependency on external resources (Braud & Schwittay, 2006). Others criticize raise similar concerns and note aspects such as, “a designer must acknowledge that user influence design and technology, as much as technology/design influence users their cultures and societies” (Camara, Abdelmou-Nocera, Luckin, & Waema, 2008, p. 3). Thus, creating effective communication materials for audiences in other cultures requires a design approach that addresses local needs. It must also be an approach that incorporates indigenous/local knowledge and recognizes the agendas of local users. Within this context, Sen’s (1999) theory of capability and freedom can provide communication designers with a mechanism for effectively identifying, understanding, and addressing local cultural factors.

Sen’s (1999) theory of capability and freedom emphasizes the aspects of empowerment in decision-making. Essentially, effective design for other cultures involves aspects such as

- Responsible participation
- Collective action
- Enhanced access to resources
- Unobtrusive and open communicative abilities
- Informed decision-making (Blake & Quiros Garzon, 2010; Puri & Sahay, 2007)

Recently, information and communication design initiatives have embraced these ideas by improving information access and building problem-solving capacity (locally) in relation to different international projects. They have also begun to include local people in the decision-making process while simultaneously strengthening local cultural identity by focusing on local contexts and situated issues.

In addressing these aspects, co-design has emerged as a central approach for guiding design practices (Gigler, 2004). In co-design, users are not passive recipients of design outcomes (Bieling, Joost, & Müller, 2010); rather they are co-designers/partners in the design process (Steen, Kuijt-Evers, & Kloek, 2007). Inclusiveness is an important aspect of this co-design approach. The idea is that only through including representatives of the intended, local audience in the design process can communication designers meaningfully addressing conditions of marginalization and produce materials that meet the needs and expectations of local users (David, Sabiescu, & Cantoni, 2013).

**Social embeddedness** is another key to effectively designing communication materials for audiences from different cultures. In relation to design, social embeddedness emphasizes the importance of local context and culture in the design process. It also emphasizes local participation and partnerships during the designing process in order to create products that effectively meet the needs of local users (David, Sabiescu, & Cantoni, 2013). By embracing local knowledge systems, social embeddedness, in combination with co-design, allows design solutions to emerge organically and in ways that effectively meet local needs.

**Contexts for Studying Approaches to Localizing Communication Design**

The combination of these approaches provides communication designers with powerful mechanisms for studying the needs, expectations, perceptions, and constraints of local users. As such, the mix of these approaches can be particularly important in relation to emerging economies where local conditions and related communication expectations can vary widely from region to region. Such an approach is particularly meaningful in the context of remote villages and resource scarce underserved contexts such as in eastern India. Thus, to investigate how such ideas could guide...
design practices in developing nations, the authors undertook a case study to explore the applications of such ideas and to develop methods for engaging in more effective communication design practices related to users in developing nations.

METHODS
The project reported on here involved a multidisciplinary communication design research project that began in 2011 in Purulia, a district in the eastern Indian state of West Bengal. To explore how local factors affected communication design practices in this context, the authors decided to use a case study to examine this situation. The case study method was selected in order to gain a better understanding of the applicability and the effectiveness of reflexive co-designing processes in producing contextually meaningful communication design solution to bridge digital divides. The objective of this case study was to explore the following research question:

RQ: How do cultural and contextual factors define and shape communication design processes when communication designers work with local populations to co-generate informational products for local audiences?

To address this question, a research team (one in which the authors participated) used multiple methods for collecting data. These methods included:

- Ethnographic field-research, which consisted of semi-structured interviews with 128 participants that took place over two years (2012-2014)
- Co-design praxis, which involved collective problem-solving events based on interacting with individuals in a variety of focus-group-like design activities

The project was initiated after receiving necessary approval from the institutional review board (IRB) of the first author’s institution (Arizona State University, USA). The research was conducted among indigenous people of eastern India, particularly in the villages of Santuri block of Purulia district of West Bengal, India.

Data collection for this project took place between May 2011 and August 2014.

To examine this case, the authors used a phased process for collecting relevant data and for co-creating information solutions. The process worked as follows:

- Phase one involved in-depth interviews and focus groups with 53 persons located in local villages. These interviews and focus groups took place during a period of more than 11 hours in 2011
- Phase two involved co-designing activities that included collective drawing and group discussion sections. These activities took place during 2012–2014 and involved 75 participants from five villages.

The data resulting from these two phases addressed the aforestated research question by facilitating an understanding of cultural and contextual factors in co-creating and shaping communication design process.

Ethnographic Field-Research and Semi-Structured Interviews
Ethnographic field-research and semi-structured interviews are useful for gathering qualitative field-data, for they embrace the principles of immersive participant-observation and engaged research-conversation. Central to this process is establishing effective and meaningful local contacts who can serve as the subjects for interviews. For the case reported here, the authors began conducting qualitative research in the Santuri region in 2011. Through regular interaction with local individuals, the authors made contacts and built rapport with a number of the community insiders who would later participate in different interview and focus group activities related to this project.

During the initial stages of the overall project, authors recruited participants through snowball sampling that involved contacting key informants and subsequently potential interviewees. Once interview participants were identified (53 persons total for phase one), the authors conducted seven focus groups (ten participants per focus group on an average) and face–to–face interviews with three persons in two villages. (For these focus groups and individual interviews, the authors asked local villagers to provide the community’s perspectives on cultural practices and preferences associated with certain design projects.)

Altogether, the authors conducted 14 focus groups and four in-depth interviews with key informants (128 people total). The authors also conducted in-depth interviews and focus groups in venues where participants felt comfortable (e.g., residences). On average, nine villagers (both male and female) participated in focus group interviews. Questions the authors asked during these interview and focus group sessions included:

- What are your information needs?
- Can you share your experiences in handling mobiles and computing devices?
- What are the languages you can read and please tell us about your proficiency?

The authors then audio recorded the in-depth interviews and focus group sessions, which ranged from 25 to 75 minutes in length and were conducted by the authors and in the Bengali language. The authors translated the interview transcriptions into English, and another academician conversant in Bengali and English checked the accuracy of the translations (Lincoln & Guba, 1985). For these processes, the authors obtained informed consent from all participants before initiating interviews and focus groups. Additionally, the interview tapes were destroyed after transcription was completed, and in keeping with IRB guidelines, pseudonyms for the participants were used when the data were analyzed, such that responses could not be traced back to individual participants.

Co-Design Sessions
As a part of the process, the authors used paper and digital prototypes of proposed interfaces in focus group settings to examine local expectations and preferences associated with design. Paper prototypes were made by using initial black-and-white printouts of screenshots of a digital interface, and the authors used these initial prototypes to gather initial feedback from indigenous users (i.e., members of the intended audience for the interface). The authors used this paper prototype to introduce initial design concepts to groups of participants. In this context, the authors
asked 39 participants to examine the contents, visuals, and navigational aspects of these initial prototypes. The authors used audio-recordings to collect both user feedback and suggestions for improving the design. The authors used the community feedback recorded during the collective drawing and the paper-prototype phases to design revised digital versions of the prototype that were then shared with members of the local community in order to collect further suggestion on the revised design.

Based on participants’ suggestions, the authors revised this working digital/online version of the prototype to better address the needs and expectations of local users (i.e., the intended audience). After this round of revisions, the authors used seven-inch tablet computers to share revised digital designs with subjects in order to test the revised prototype and see how participants used the electronic interface to achieve certain tasks (e.g., retrieving real-time weather information). During these interactions, the authors used audio recording devices to collect feedback from 36 participants involved with this review process.

**Co-Design: Drawing and Designing Session**

Co-design encourages and engages end-users in co-creating culturally meaningful and contextual design solution(s). The co-design processes involve collective drawings, collective visualizations, and iterative problem solving activities. Based on the in-depth interviews and focus groups conducted in 2011, an initial version of the prototype of digital interface was developed in spring 2012. In the summer of 2012, the prototype was shown to 31 subjects (many had participated in phase one interview sessions in 2011) who the authors asked to review visual aspects of the interface. During this review process, participants noted visuals elements that were not culturally meaningful (e.g., did not reflect local conditions and practices) and provided suggestions for improving the interface.

During this process, visual elicitation methods helped bridge gaps between designers and users (Harper, 2002), to generate multiple meanings (Clark-Ibáñez, 2004), and to reveal social and collective values (Johnson & Griffith, 1998). This method involved making connections and building relationships with local contexts and emerging discourses (Mason & Davies, 2009) and enhanced the quality of communication by both reducing “fatigue and repetition of conventional interviews” (Collier, 1957, p. 858). It also involved evoking memories – thereby promoting discussions and comparisons (Johnson & Griffith, 1998). Accordingly, a drawing and designing session was organized in two indigenous villages where 24 community members participated in the process of drawing icons and design elements for digital interfaces.

For this stage of the research process, the authors asked six groups from two villages (consisting of four younger persons per group, totaling 24 indigenous people total) to use crayons and paper to draw interface menus that met local expectations. Participants then drew their visual representations of what they thought these interfaces should look like. At the end of these drawing sessions, participants collectively examined and discussed the images they had produced and selected what they considered to be the most appropriate visual representation(s) to depict the final version of the interface menus to use with their community. (The session was audio-recorded for doing verbatim transcriptions and data analysis later.) During follow-up interview sessions, participants described and discussed their preferences and thoughts on this process in response to semi-structures interview questions that were recorded and transcribed.

**Co-Design: Iterative Prototype Designing Based on Community Feedback**

Co-design sessions (David, Sabiescu, & Cantoni, 2013) were organized in the indigenous village premises, where 39 villagers participated in four focus group sessions. The authors provided villagers with both a paper and a digital prototype of a proposed interface for review and comment. Participants then evaluated the user-friendliness of these prototypes based on criteria such as ease of navigation and independently navigated the interface using computer tablets to test the effectiveness of the prototypes. During these interactions, authors worked with participants to collectively build a culturally appropriate graphic user interface (GUI) refined via active engagement of community insiders as they shared their verbal/visual feedback on interface design outputs.

**Interview Data Analysis**

The authors used grounded theory as the method of analysis for analyzing data collected in semi-structured interviewing and co-designing phases of this overall project (Charmaz, 2000; Glaser & Strauss, 1967; Strauss & Corbin, 1990). (The authors selected this method of analysis for they felt it would allow them to create mechanisms for engaging in future, related data collection and analysis on parallel projects in the future.) The constant comparison technique in grounded theory was used for

- Analyzing the emerged indigenous articulations from the margins in both interviewing and co-designing phases
- Making theoretical inferences (Strauss & Corbin, 1990)

This technique involves comparing emerging data with existing data to identify and understand social phenomena such as the relevance of culture and contexts in co-design processes. The authors also used open coding, axial coding, and selective coding to develop an understanding of the local discourses and feedback. (The open coding process is used to identify and categorize phenomenon found in the data while axial coding is used to relate open codes to each other. Selective coding, in turn, is instrumental in determining core categories based on axial codes.) The authors initiated the data analysis with open coding to identify distinct concepts that could be sorted and labeled; actual discourses from the transcripts were pulled together to identify and build themes. The authors then examined the data sentence by sentence, which helped in the development of concepts, and they grouped discrete concepts related to similar phenomena under conceptual categories. The authors followed this open coding approach with axial coding in which they identified relationships within and among the categories identified via open coding. Finally, the authors accomplished theoretical integration through the selective coding method (Denzin & Lincoln, 2003; Strauss & Corbin, 1990).

Once the codes were developed, the authors brought these codes back to community members to explore whether the codes made sense to them; codes were accordingly revisited based on the feedback from local community members. During this process, one researcher (not an author of this entry) conversant with English and Bengali (and its dialects) participated as an inter-rater to test the coding system and to crosscheck the results of the coding processes. This individual independently coded two sets of focus group data and found the codes substantially consistent with the codes identified by the authors. The authors then resolved differences by discussions and mutual agreements among the authors and the inter-rater.
RESULTS
In 2011, the authors conducted initial ethnographic field research on communication expectation and preferences involving indigenous persons living in the villages of Purulia, West Bengal, India. During in-group/village-level discussion sessions, participants noted local issues affecting communication design practices (and successes) in those areas. For instance, Debu, a middle-aged man, emphasized the importance of connecting communication design practices to receiving timely information about market-rates and the impact such information could have on the local economy. According to Debu,

“We are farmers; we sell our agricultural produce to earn a living. If we get information about current rates of various vegetables in nearby markets, then we can compare and decide which market place is profitable for us. Then we could go there to sell our agricultural produce. Thereby we can improve our domestic economy.”

His statement and those from other participants collected during that same time, mirrored sentiments noted by other scholars working on similar kinds of projects. For example, Marker, McNamara and Wallace (2002) noted:

The poor are not just a deprived of basic resources. The lack of access of information that is vital to their lives and livelihoods: information about market prices for the groups that produce, about health, about the structure and services of public institutions, and about their rights. The lack of political visibility and voice in the institutions and power relations that shape their lives. (p.3)

Such local utterances on information-poverty of the indigenous villagers led the authors to devise an idea for co-creating an information and communication design. When the authors shared their proposal for creating an ICT solution for addressing their contextual issues including low rates of literacy, limited proficiency in English, and familiarity with using mobile phones to access online materials. Based on this idea, they developed an image-based, touch-screen-enabled visual interface they delivered to participants via tablets in order to do a prototype review.

Collective Drawing
The authors showed participants an initial digital prototype for navigating various pages and sub-pages of a proposed site, and participants shared their perspectives on these materials via focus group sessions where they suggested modifications to the interface’s design. Several participants considered the images used in the prototype not culturally meaningful (i.e., they did not communicate the exact/desired meanings) and suggested modifying the visuals to make them more meaningful to the local indigenous communities. In commenting on an icon designed to represent indigenous culture, Bidhu, one of the villagers, explained the following:

Interviewer: These visual representations are about tribal culture.

Bidhu: They are not like us. Visual images need improvement

Interviewer: OK, they are not like you. Can you please draw your own images, so that you all can relate.

Bidhu: Yes, sure.

Based on the feedback Bidhu and others provided, the authors organized collective sketching sessions and focus groups in different indigenous villages. For these sessions, the authors asked participants to draw culturally meaningful visual representations for the user-interface proposed by the authors.

During these sessions, older members of the community preferred to share their advice via oral comments, while younger members drew actual images. After the drawing session, participants discussed and collectively chose what the group considered to be the most appropriate visual representations of icons and interface elements. These images became the foundation for subsequent prototypes tested at later phases of the overall case/research process.

During one of these group selection processes, Nihar and Dinu, two older members of the santhal community explained their choices as follows:

Interviewer: Each team of the younger members was given twelve pages, and they had drawn two pictures for each topic. We had total seventy-two pictures, twelve pictures for each topic. You also participated in the process of creating images, and you have guided juniors to draw the picture. Now, please select two or three pictures, which you liked the most.

Nihar: Can we choose two or three pictures?

Interviewer: Two or three, whatever you can choose.

Dinu: For this category, we like only two pictures.
Through these sessions, participants challenged the authors' preconceived assumptions in representing indigenous people and their lives by questioning and critiquing the visuals used in the very first prototype. The participants also collectively devised images they felt depicted their lives and negotiations in a culturally meaningful way. For example, the image of “local income options” produced during one session reflected the local cultural and contextual factor of income options such as local trades.

**Contextual Barriers and Issues**

During initial prototype testing, the authors posed questions about language proficiency and familiarity with computers and online media to participants, and several young persons (i.e., persons roughly age 27 and younger) and students participated in these sessions. Though many villagers participated, Kajol, one of the young indigenous villagers, responded on behalf of the group as follows:

**Interviewer**: So, you have never used a computer, right?

**Kajol**: No, no.

**Interviewer**: And, you have never used a touch screen?

**Kajol**: No.

**Interviewer**: You have not even used the Internet?

**Kajol**: No.

**Interviewer**: Do you know the English language?

**Kajol**: Very little, English is like…comparable to not knowing.

Responses like these indicated that contextual barriers (e.g., linguistic and computational factors) were affecting local communication practices. Such information provided key insights about both users and the context of use.

While working in the economically marginalized areas, the authors learned about structural constraints affecting local communication practices. One such constraint was a lack of access to telecommunication services – a factor that made it difficult for individuals in certain locations to access the Internet. This factor had important implications for prototype testing to determine local communication practices and expectations. This situation came out on one occasion when Haru and Mihir, two villagers, were conversing with one of the authors:

**Interviewer**: Here the Internet-speed is little slow.

**Haru**: Is it not connecting at all (with Internet)?

**Interviewer**: Umm, it is very slow. Let me try it again. You can see it is running too

**slowly.**

**Mihir**: Yes, it is very slow. If we can get faster speed, then it will be good.

As the discussion here notes, a lack of access to basic services/infrastructures poses challenges to the design process. In response, the authors used backups (e.g., printouts of visual interface) when conducting later phases of field-research that involved reviewing the design of online interfaces.

Another aspect affecting communication design practices was the skepticism of participants toward academic research conducted by external agencies. Historically, the underserved people studied by the authors experienced various atrocities under the façade of benevolent discourses; dominant stakeholders abused and oppressed the marginalized people (Sen, 1999). As a result, indigenous people became skeptical of externally driven interventions. Pilu, a resident of a nearby village, posed key questions to the authors when he noticed them conducting a village-level discussion:

**Pilu**: Sir, one minute. This for what purpose, can you explain?

**Interviewer**: Sure. I am a researcher, coming from a foreign university...

**Pilu**: Okay, okay. And then…

**Interviewer**: For Indian villages we are trying to design a computer-interface.

**Pilu**: Any advantage of that? I am trying to say, is it going to create any source of income?

**Villagers**: (Discussion in local language, villagers explained him the purpose of the study)

**Pilu**: Okay, you please proceed.

Though the authors never faced similar questions from other participants, they did find building rapport and trust with local community members is crucial to the success of any communication design project.

**Navigational Aspects of Prototype**

Community-centered research was a focal point of this project, for such approaches can be key to effective communication design processes involving groups with low literacy rates and that have limited proficiency in a given language. This community-centered approach allowed the authors to incorporate participant perspectives into the design process and produce culturally appropriate visual elements, which are meaningful to the community members. For the research project reported on here, both literate and illiterate participants evaluated initial interface designs created by the authors. During interaction sessions to assess participant perceptions of prototype designs, individuals noted that the use of supporting texts could enhance the meaningfulness or understanding of visuals. Nabin, one indigenous villager, expressed his thoughts as follows:

**Nabin**: I mean, written words and the pictures if both are present, then it will be easier to understand. You can add some description in local language along with the pictures

**Interviewer**: Ok. So you want to say, pictures and words, if they stay together, then it would be better.

**Nabin**: Hmm.

**Interviewer**: I mean those who are illiterate, they can see the pictures and those who are literate, they can read the words, and if pictures and words stay together.
Through such interactions, participants helped the authors develop interface designs that contained visual and textual information that were culturally meaningful to participants.

A lack of proficiency in a common language of communication, especially English, proved to be another barrier participants had to negotiate in order to participate meaningfully in the design process. To address such factors, the authors made it a point to discuss language factors during different stages of the design and development processes, as exemplified by the following exchange with Prasun, Dipak, and Sujit, the members of one local focus group:

Interviewer: Do you want me to write the names and descriptions of the visuals in English?

Prasun, Dipak, Sujit: No, no, no.

Interviewer: What do you think, can you use this computer easily, or do you need some prior knowledge, or do you have to study about the computer-operation before using it?

Prasun: The language of the computer is not in our (local) language, so you have to conversant about it.

Sujit: We have to learn the function like we did in case of mobile phones. If the language of the interface is Bengali (the regional language), it would be better. But, still we have to learn its function.

Dipak: If we practice it regularly, then we will not face any problem with the computer.

For this project, community members preferred Bengali, a regional language, over English.

In addition to linguistic factors, a limited understanding of and proficiency with computing technologies also affected the design process as many participants had little prior experience using a computer (or computer-like devices). Therefore, during the design and development processes noted here, these individuals tended to emphasize practice and experiential learning as a method for participating in such activities in meaningful ways.

**Community Insiders as Partners**

For the co-design process described here, the authors reflexively engaged with participants (i.e., regularly questioned the authors’ preconceptions and assumptions) to make the interface design process community-driven in nature. For instance, the authors learned local approaches to designing cultural artifacts by using locally available resources from a participant’s mother who was an accomplished artisan. The authors used her understanding to develop communication expectations. It also legitimized local cultural appropriateness of the design by identifying and addressing local communication expectations. In a similar fashion, the authors incorporated various local visual elements in the later versions of the user-interface currently used by participants in the regions studied. Such an effort ensured cultural appropriateness of the design by identifying and addressing local communication expectations. It also legitimized local cultural identity and indigenous agency by guiding participants to become effectively involved in such design processes.

Interviewer: We came to Montu’s house yesterday, right? Montu’s mother with the palash leaves was making plates and cups. I was amazed, at my school no one can make them so quickly. We could not make anything from leaves. I was astonished to see that. So what did I do... I will show you the pictures; I have taken some pictures of his mother’s handmade products. After seeing this, Montu and I thought, if we create visual elements with the help of this, then you all might recognize. See this picture, when Montu’s mother was preparing with leaves, I took this picture. Now, seeing this picture it came to our minds that if somehow, we can make something useful out of it. Montu, can you please explain to them in your own language.

Montu: “Palash” leaves. [Montu was also showing them the interface].

Interviewer: Yes, with “Palash” leaves. Now you see this. What did you see here? Have you seen cultural representation here?

Many participants: [all together] Hmm.

Interviewer: Now see, what this circle (used in previous prototypes) has turned into a unique shape. This was circular earlier. What are your comments?

Paran: Okay, I mean. It becomes something else. It has become a design.

In a similar fashion, the authors incorporated various local visual elements in the later versions of the user-interface currently used by participants in the regions studied. Such an effort ensured cultural appropriateness of the design by identifying and addressing local communication expectations. It also legitimized local cultural identity and indigenous agency by guiding participants to become effectively involved in such design processes.

Including of one of the community insiders, Montu, as a member in the design team was an important aspect of this co-design approach. Montu participated in all phases of prototype designing and testing processes, and he shared his opinions of different designs along with other participants. During the prototype testing sessions, for example, Montu contributed in the following manner:

Interviewer: You will press there. How will you press; Montu will show you.

Montu: This one.

Interviewer: Yes. Now do what Montu did, Montu just put his finger on it. See, names of some newspapers have appeared. Those who can read, please tell me.

Paran (a local participant): Anandabazar Patrika, Bartaman (names of regional Bengali newspapers).

Through embracing an inclusive approach to information and communication design such as the one Montu participated in, communication designers can engage in processes that better reflect local conditions, needs, and expectations of use.

**Co-Designing Visual Elements**

Listening to the users/participants and learning from them were two important aspects of this co-designing process. Throughout co-design activities, the authors regularly listened to the suggestions and thoughts participants shared. During such activities, participants...
evaluated various design alternatives while also helping the authors finalize design elements. For instance, while designing “Amar Koha” (“my story,” in English), an intra-community conversation feature of the interface, two individuals – Pijus and Naresh – participated in the co-design process. They did so in the following way:

Interviewer: Now you have to tell me what color would be appropriate?

Pijus: T-shirt would be saffron, and hair would be black.

Interviewer: The hair is black. Ok… this is a girl and this is a boy, is that understandable?

Naresh: Yes. The two of them are chatting.

Interviewer: Do you want two girls, or two boys, or one girl and one boy, what would be most appropriate? I mean, is this ok or do I need to change or modify?

Naresh: I like this.

Such processes revealed how feedback from and the active engagement of the participants/community members in design processes is essential to creating effective communication materials for local audiences.

As community-outsiders, it was often difficult for the authors to decide which design elements to include in a given interface. To address this limitation, the authors regularly used methods such as focus groups and interviews to collect in-depth design feedback from users/participants. In one situation, Haru, a villager, was teaching the authors about various aspects of designing/detailing a local cultural artifact for integration into the design of a particular interface:

Interviewer: Tell me more about the color of “Madoli” (a musical instrument)

Haru: The color should be red.

Interviewer: The whole thing will be red, right?

Haru: No, the whole area will be red instead of this central area; use yellow here.

Interviewer: Ok, the same will be applied to the other side, right?

Haru: Our “Madoli” has two sides, one side is black and one side is colored.

Interviewer: Black is ok, and as you said, this side will be colored.

Such inputs from local users enriched and guided the design process in a manner that allowed the authors to engage in meaningful and successful practices associated with co-creating culturally appropriate interfaces. Thus, by working with and learning from the participants/local users in an engaged and reflexive manner, the authors were able to co-design prototypes and interfaces that better met the information seeking and information use needs of a given local population.

**DISCUSSION**

This paper summarizes a case study that examined communication design practices related to meeting the design expectations of individuals in a particular local context. In the study reported here, cultural values, belief systems, aesthetics, computational abilities, and local information practices represented initial factors in designing a culturally meaningful information and communication solution. Moreover, local wisdom and knowledge system are other guiding forces for culturally meaningful design praxis (Kapuire, Winschiers-Theophilus, Chivuno-Kurio, Bidwell, & Blake 2010). Specifically, the authors examined methods for learning and addressing the local design preferences of indigenous persons living in villages in Purulia, India.

The information collected during the process of working with local individuals on designs revealed several communicative barriers and structural constraints that affect not only the individuals examined in this study, but also many individuals living in developing nations. Such factors include low levels of literacy, lack of language proficiency, limited knowledge of computing technologies, and poor telecommunications services. These contextual factors influenced the communication design process. They also revealed that engaging in effective design practices in such contexts requires one to work closely with local audiences to address these factors in ways that meet local needs. As such, this case can provide communication designers with ideas and approaches for engaging in meaningful and effective design practices when creating materials for international audiences in different locations. The information in this section provides and overview of approaches communication designers can use to apply such concepts in different international contexts.

**Information and Communication Design Approaches**

To address the aforementioned barriers and constraints, communication designers often face when creating materials for audiences in developing nations, the authors embraced a multidisciplinary design approach (Mazé & Redström, 2007). This approach involved ethnographic fieldwork (including in-depth interviewing and focus group interactions) and co-designing activities. The objective of this approach was to work with local audiences to co-create culturally meaningful information and communication design solutions/products. The first step in this process involved conducting research (including field-study) on a long-term basis. The idea was to build trust with members of the intended local audience and to create a foundation for engaging members of this audience in interactions that could be used to examine and enhance design choices. Accordingly, this ongoing research was initiated in 2011, and multiple visits to indigenous villages and engaged dialogues with the community insiders helped the authors build needed trust and credibility as well as to reduce skepticism about the purpose and intention of the project. For such projects, gaining the confidence and the trust of community members is imperative for building and maintaining a collaborative and participative environment. In essence, creating such an environment is the key driving-force for a co-design approach, particularly in marginalized communities/contexts.

To build such confidence and trust when working with different communities around the globe, communication designers might do the following:

- Make long-term contact with local communities. By doing so, communication designers can gain a better understanding of the context affecting local communication practices (e.g., structural and communication barriers experienced by local communities).
• Pay close attention to trust building processes. Through such efforts, communication designers can reduce the skepticism of local people and build an environment conducive to participation and co-creation.

• Engage respectfully with community members in collaborative co-creative processes. In so doing, communication designers can involve local voices and agencies to collectively explore, create, and refine problem-solving avenues/activities.

While this listing is far from comprehensive, it does note those key steps that communication designers should undertake in all instances of trying to build trust with communities from other cultures.

Visual Design Processes
The design process described in this case study also espouses visual methodologies to address the issue of low literacy (Toyama, 2010). As a part of this process, the authors created an initial design prototype by using purely visual elements. The authors presumed that, in low-literacy contexts, the majority of the participants might not be able to read textual information.

By reflexively attending to the community feedback provided during these processes, the authors engaged participants in local-level design drawing sessions. In these sessions, individuals created culturally meaningful visual representations and developed agreed-upon descriptions of the visuals in Bengali, a regional language.

For this project, a regional language was used in the interface primarily for two reasons:

• Many villagers learned the Bengali language in their schools.

• Most of the local community members were unable to read English (as compared to Bengali).

Thus, the authors selected community-generated and collectively selected visuals for creating a computer interface that better met the needs for this group of local users. Additionally, to address the relatively low level of proficiency many participants had with computers, the navigational structure developed from interactions with local participants was relatively simple and included few buttons used as navigation aids on the final interface. The authors also provided participants with oral step-by-step guidance during initial use of the interface in order to reduce participants’ inhibitions. In this way, the design process addressed the local language and illiteracy issues through a co-creative process that allowed the researchers to identify and effectively design for such factors.

When undertaking similar projects that involve co-creating information solution for/designing materials for international contexts, communication designers might adopt the following approaches:

• Use community-generated and collectively selected visuals. By using such visuals, communication designers can effectively co-create culturally appropriate and contextually meaningful visual design elements that better address local expectations and preferences.

• Incorporate local language and symbols into the co-design processes. By doing so, communication designers will ensure that the design elements are more understandable and thereby can attract and include more local voices.

• Iterate and co-create navigational structures with active involvement of local participants. This approach allows communication designers to effectively reduce the inhibitions of illiterate (and semi-literate) participants and encourage the use of a communication product.

• Incorporate local cultural perspectives and aesthetic perceptions in design processes. Doing so allows communication designers to situate local knowledge at the center of design activities and foster the local-global knowledge exchange and mutual learning processes.

By using such approaches to include local populations into the design process, communication designers can develop materials that better meet local communication expectations, preferences, and needs in relation to design.

Locally Situated Contextual Design
Another aspect of this design process was in-situ work. Such work involved the designers staying in an isolated geographical region, experientially learning from the local spaces, and creating design solutions based upon what they observed. Such an approach allowed the designers/authors and the community insiders/participants to frequently and closely communicate with each other, share design thoughts and feedback, and mutually resolve conflicts. This approach, in turn, allowed for more meaningful co-creation practices that led to the development of an interface that met both cultural communication expectations and local conditions of use.

The use of in situ design also resulted in important learning moments for the authors, as they had to understand a number of the conditions affecting communication in the local context (e.g., limited access to resources). Infrequent telecommunication and Internet services, an inconsistent electricity supply, and the limited availability of motorized vehicles (for visiting nearby cities) were all challenges faced by the authors during the designing process. By experiencing such situational constraints directly, the authors began to better understand and design for such constraints when creating prototype interfaces for local users. Accordingly, these experiences prompted the authors/designers to espouse low-tech options and locally available resources (e.g., collective drawing sessions were organized where papers and crayons were used). This design process, thus, sought to bridge the design reality gaps (David, Sabiescu, & Cantoni, 2013) for effectively addressing the situated needs of the underserved by understanding and meeting those needs.

Communication designers who plan to undertake similar projects for international audiences might consider the following strategies:

• Conduct in-situ design activities that allow the designer to learn more about local contexts and constraints faced by local populations. During this process, the designer should consult with local individuals when in order to design informational materials in ways that better address such local constraints and are thus more usable in local contexts.

• Design research processes based on the local infrastructures and available resources. Doing so allows communication designers to make the process more responsive to local resource constraints and more effectively collect better local data. Doing so can not only lead to more effective data collection, but can also provide insights on issues (e.g., infrastructure limitations) that need to be considered during the later design process.
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Community Insiders as Co-Designers

The inclusion of a local community member in the core design team of this project was another key aspect of this co-design process. This individual’s involvement in co-designing activities enhanced the design process in multiple ways. During the field research, especially in interaction and feedback sessions, this local community member acted as a bridge between community insiders and the designers. His presence and participation in user-interface presentations and demonstrations was catalytic for creating dialogic moments. Also, during the interface development phase, he (sometimes along with other participants/community members) watched and provided feedback on each and every step. Such in-depth reviewing of design elements and strategies qualitatively enriched the design outcome as well as made it culturally relevant.

Overall, this participant’s presence influenced the co-design process as he helped break down the communicative barriers between community insiders/participants and outsiders/authors. During the design dialogue and interactions, designers listened to the community feedback and actively learned from the cultural perspectives and the aesthetic perceptions. Accordingly, subsequent versions of design elements were generated by the authors and in response to such information. In these ways, this insider’s participation allowed other community members to become co-designers in each phase of this information and communication design process.

Communication designers who wish to engage in similar projects for co-creating informational materials and designs for international audiences might consider espousing this approach in the following ways:

• Include community members in the core-design team for a project. By making such decision, communication designers can invite local voices, inputs, feedback, and reviews on regular basis to make the design process responsive to local perspectives.

• Seek and incorporate local feedback in each and every step of communication design. By doing so, communication designers can ensure that community members are respectfully involved in the process and making informed design decisions.

• Let local community members cum co-designers to lead community dialogue and feedback sessions. Through such acts, communication designers can learn from multiply emerging discourses as well as can build an encouraging collaborative design environment to co-create avenues for contextually appropriate design solutions.

This kind of approach emphasizes the relevance of indigenous knowledge in co-creating need-based information solutions and situated community insiders at the centre of reflexive co-design processes.

CONCLUSION

To explore processes of co-creating a locally situated, responsive information and communication design solution, the authors identified certain contextual constraints related to a particular international design case. These constrains brought with them complexities related to co-designing information solutions/products. To overcome such barriers when working in global contexts, communication designers should consider co-designing as a mechanism for addressing local conditions by making local users part of the design process. In so doing, communication designers should focus on five communication design areas or aspects:

1. Participating in long-term engagement for building mutually trust and participative environment in a given local context.

2. Co-creating dialogic spaces where the designer and members of the intended audience can discuss prospective barriers affecting communication practices in a given location.
3. Conducting in-situ transdisciplinary design research to bridge the difference between what designers think is needed and what local populations need and can use.

4. Developing an understanding of local cultural practices and knowledge systems by interacting with and listening to local users during the design process.

5. Including local people in the design process as co-learners, co-designers, partners, and leaders.

When half of the global citizens are living with less than $2.50 per capita per day (World Bank Development Indicator, 2008), and when the gaps between have and have-nots are increasing (Sorrells, 2012), a contextually grounded in culturally appropriate reflexive co-design approach as described in this case study can create avenues for bringing about meaningful social change via effective design practices that better meet local conditions and expectations.

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Cross-Cultural Cinematic Communication: Learning from the Information Design Process for a Sino-American Film Competition

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ABSTRACT
This article examines the 2014 Sino-American University Student Digital Micro Film Competition, a collaboration developed and administered between the University of Central Florida in the United States and Shanghai University in the People’s Republic of China (PRC). By using qualitative text analysis and visual content analysis to review key materials and events from this case, the researchers studied information design and cross-cultural communication practices of various aspects of the partnership. The resulting analysis reveals unique information design challenges associated with cultural differences in communication practices, visual design, and administrative style. The summary of the case and the results of the related research presented here also provide readers with information design strategies that can facilitate design practices—and the associated coordination of event planning—across different cultural groups.

Categories and Subject Descriptors
H.0 Information Systems: General

General Terms
Documentation, Design, Languages

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Visual design, Project management, Cross-cultural collaboration, Digital film, Event planning

INTRODUCTION
As visual media in which narrative is central, films can function as engaging and useful texts for learning about other cultures. Similarly, studying the filmmaking process and its associated administrative activities contributes to an understanding of how different cultures approach the process of managing complex projects and authoring creative works. In this entry, we explore how the design and implementation of a collaborative, international film project revealed cultural differences relating to both project management and design between participants from the People’s Republic of China (PRC) and the United States (US). Such differences are currently understudied, particularly in regards to collaborative film initiatives, and we do not yet have a comprehensive understanding of the cultural issues involved with organizing such events. This lack of knowledge is problematic for making progress in large-scale global collaborations in which diverse participants must work together toward a common goal and must often do so with limited resources.

The purpose of this manuscript is to add to our knowledge in this area by analyzing the documentation and discourse surrounding a particular Sino-American partnership that took place in 2014 and associated planning activities occurring from the fall of 2012 to the summer of 2013. In examining this case, we first provide a review of key literature that discusses differences in Chinese and American cultural communication patterns. Next, we note our own data to show how it builds upon such prior work. In so doing, we present the results of a qualitative content analysis and a visual design analysis of materials associated with the Competition/case. We then conclude the manuscript with a summary of particular design tactics that proved effective in overcoming cultural communication differences related to design. We believe such an examination of this event/case can help communication designers better understand the unique challenges of developing materials for and coordinating complex projects that span geographic and cultural boundaries.

Situating the Project
In 2014, a new international student micro-film competition initiative launched. The initiative joined the University of Central
Florida in Orlando, Florida (US) with colleagues and officials from the PRC. (The participating PRC organizations included the Shanghai Media Group, the Shanghai Intentional Film Festival, and Shanghai University.) The project had been more than two years in the making and began with a 2012 ribbon-cutting ceremony to formally announce the collaboration between partners from the US and the PRC.

The Competition focused on a number of goals, with primary audiences composed of university students and the general publics in both countries. These goals included

- Encouraging and facilitating cultural and educational exchanges between university students in the two nations.
- Raising awareness of the conservation, preservation, and presentation of folk and ethnic culture among university students and the general public in both nations.
- Providing an opportunity for individuals in both nations to compare and contrast varying approaches to the process of making short films.
- Creating relationships to sustain future collaborative and communicative opportunities for university students and media researchers in both countries.

Given these extensive and diverse goals, organizing and implementing the Competition presented numerous intercultural communication opportunities and challenges.

To begin, it was necessary to develop the technical, political, and administrative infrastructures to allow students from each culture to develop short digital films that communicated key aspects of their culture to audiences in the other country. Winning student films, or those that best embodied the themes of the Competition and showed the greatest technical craftsmanship and narrative ability, were to be showcased in each country during special events. These student films spoke to embedded cultural values within each community. They also presented opportunities for fostering cross-cultural understanding across different participants. Such a partnership was made possible in part through a commitment of resources from stakeholders in both the US and the PRC, but also through the unique media environments present in both countries.

**EMERGING CINEMATIC OPPORTUNITIES**

The combination of modern digital filmmaking technology and the Internet’s global reach provides individuals with the opportunity to create, share, and engage in a dialogue with audiences from around the world. Due to high cost and restricted access, opportunities for film production were once limited to professional filmmakers in both the US and the PRC. However, low-cost digital filming technologies such as camcorders and smartphones now provide access to new audiences of creative designers. This situation is true in both the US (Watkins, 2009) and the PRC (Tao & Donald, 2016) – nations where portable smartphone devices are very popular and interest in producing and exchanging videos is relatively common, especially among younger generations (Watkins, 2009; Wallis, 2011). Such access has also provided new opportunities for creative expression in narrative filmmaking due in large part to more affordable digital technologies (Zhen, 2007; Johnson, 2011).

The history of this evolution is connected to emerging technologies – and related uses of it. Experimentation with digital audio and digital film started relatively early (in the 1990s) in the United States and Japan when those two nations began using the technologies now commonplace in digital filmmaking (Belton, 2002). The ability to actively engage in a cross-cultural, communicative dialogue as enabled by this technology was then extended by the rise of technology infrastructure for public communications and the increased access to global audiences it provided (Sreberny, 2006). While such Web-based access remained relatively limited in the early years, it quickly spread to almost every corner of the globe. And perhaps nowhere is this growth more stunning than in the case of the PRC.

Over the last two decades, Internet access in the PRC has grown significantly – from 2.1 million users in 1999 to over 640 million users today (Internet Users by Country, 2014). The PRC contains just under 20% of the world’s population (with 1.4 billion persons) and represents 22% of the world’s Internet users (Internet Users by Country, 2014). Given this ubiquity of both smartphone technology with digital video capability and Internet dissemination channels, the PRC is becoming a growing presence in the area of global film and international film dissemination. Yet a number of cultural, linguistic, and other aspects need to be considered should individuals from other cultures wish to collaborate on filmmaking or film distribution projects with partners from the PRC.

Despite their emerging popularity and ubiquity among younger users in both countries, we still know very little about collaborative film ventures coordinated between individuals in both the PRC and the US. Such knowledge is important for individuals to develop complex projects in which information design strategies and documents need to be broadly accessible and usable across cultural boundaries. In order to do this specifically within a Sino-American context, we must better understand differences in Chinese and American design preferences. As St.Amant (2005) notes, direct observation of individuals within a culture or analysis of materials created by those individuals are two primary methods of understanding how culture relates to design preferences, audience expectations, and information format. Before considering the specific case of communication patterns surrounding a film competition, however, it is useful to first summarize some key literature regarding general communication design preferences in the US and the PRC.

**CROSS-CULTURAL DESIGN IN SINO-AMERICAN CONTEXTS**

To ground this work in theory, we explored research surrounding the cross-cultural implications of document design. We also reviewed literature that spoke to prior findings in terms of the preferred design and use of information by each culture. This review of the literature presented in this section briefly outlines some of what we currently understand about the major communication differences between Chinese and American cultures.

**Communication Styles**

Research in intercultural communication speaks to notable differences in how American and Chinese cultures communicate (Young, 1994; Gao & Ting-Toomey, 1998; Wang et al., 2009; Ding, 2013) and in how they design and interpret scientific and technical information (Qiuye, 2000). Young (1994) explains that even straightforward conversational matters, such as talking and
moments of silence with conversation, function differently within different contexts in different cultures. The literature also notes high variability between Eastern and Western cultures in areas such as individualism-collectivism, analytic vs. holistic reasoning, and low- vs. high-context communication styles (Wang et al., 2009). Because of such factors, translation can be difficult and filled with collaborative challenges (Ding, 2013).

Within this context, Gao and Ting-Toomey (1998) note that Chinese communicators are known for using restraint and control when speaking or writing, a philosophy embedded in Chinese adages such as *yi yan ji cha* (“What has been said cannot be unsaid”), *hua cong kou chu* (“misfortune comes from the mouth”) and *yan duo bi shi* (“He/she who talks errs much.”) (p. 36). Such a philosophy means that non-Chinese audiences often perceive essential information as “missing” from a given communication. The idea behind such communication patterns is rather than having such details delivered explicitly and directly, the person doing the speaking or writing expects the listener or reader to extract those details from the context/settling in which something is said or written.

Gao and Ting-Toomey explain that this context-based approach underscores the importance of implicit communication in Chinese culture, as represented in the phrase *han xu*. *Han xu* refers to verbal and nonverbal communication modes that are indirect and do not list out all details for readers or listeners. This communication style is one commonly used in social and professional environments in Chinese culture and it might be seen as reflecting a more collectivist approach to interactions.

In contrast, American communicators tend to be more direct, explicit, and literal in their communications. As Gao and Ting-Toomey write, such differences can be observed by looking at popular adages in both countries. The adages “don’t beat around the bush” and “say what you mean” (p. 69) tell us much about preferred communication styles in the United States. For the Chinese, *pang qiao ce ji* (“beat around the bush”) and *yi zai yan wai* (“meaning lies beyond words”) (p. 69) provide an alternate model for thinking about communication and highlight key cultural differences in expectations about communication style and purpose.

**Technical Communication**

In regards to technical aspects of communication, Qiuye’s (2000) study compared the use of graphics in scientific communication and technical manuals used by both American and Chinese audiences. In her work, Qiuye examined articles in popular science publications that had done on Dolly the cloned sheep as well as reviewed various technical manuals for consumer household items such as fans and coffee makers manufactured in both China and the United States. Her findings, which supported general patterns identified by Gao and Ting-Toomey, reveal that Chinese documents tend to use more contextual information when presenting new ideas, while the American publications often adopt a more direct approach. Per Qiuye’s findings, publications for American audiences also seem to emphasize task performance while materials for Chinese audiences tend to provide greater detail in regards to technical information and specifications. Finally, American materials generally contain more straightforward linkages between visuals and textual annotations used in the materials.

Taken collectively, such research supports the notion that China is a high-context information design culture. It is a culture in which communication patterns are often characterized by an indirect style in which much of the information associated with a given communiqué is transmitted outside of the explicit written document. The United States, by contrast, is a low-context information design culture. That is, it is a culture in which communication is more focused, explicit, and problem-oriented.

**Hypertext**

Additional research explores the effects of culture on the design of communication artifacts such as websites. Faiola and Matei (2006), for example, conducted an experimental study with Chinese and American users. Their work indicates users found information more quickly and spent less overall time interacting with a site when individuals used sites developed by designers from their own cultures. Faiola and Matei also found that both Chinese and American participants were able to locate information more quickly when using websites developed by professionals from the participant’s same cultural background.

In reporting their results, the Faiola and Matei note the many important ways in which culture can affect information design. In essence, culture influences factors from obvious and explicit differences in the interpretation of numbers, symbols, icons, and texts to the “implicit and less formal dimensions of page format, imagery, color, information architecture, and system interaction” (p. 380). Faiola and Matei’s work also explicitly calls for additional research to be done on both international Web design and the cross-cultural implications of design features in relation to usability and accessibility.

**METHODS**

To examine the case of the 2014 Sino-American University Student Digital Micro Film Competition, we conducted research at multiple locations in the PRC and the US. For this process, we collected materials from the project management process of the Competition to analyze communication patterns from American and Chinese participants. In reviewing this case, we used qualitative methods, text analysis, and visual content analysis to collect and analyze data. To better understand cultural communication expectations relating to this case, we analyzed specific materials including key project documents and observations notes taken during our participation in the planning of this overall event.

We began data collection on his case in the fall of 2012 when the project began via an initial visit from PRC representatives to the University of Central Florida. Our data collection for this case then concluded with the Competition’s first showcase (which occurred in conjunction with the Shanghai Film Festival) in March of 2014. (Note: The Competition remains active and is ongoing as of 2015, but this research reported here focuses only on the planning process for the inaugural year/2014.)

In terms of data collection, we focused on learning more about cross-cultural communication by studying the documentation and workflow procedures surrounding the organization of the project. In collecting this data, we specifically wanted to determine if the same communication style preferences and strategies identified in other types of documentation, as identified in our literature review, also held true in documents surrounding other contexts, such as the organization of this event.
Research Questions
Our objective for undertaking this research project was to examine different aspects of this case/the initial planning of the Competition in order to address the following research questions:

• RQ1: Do participants from the PRC and the US show different preferences for individualistic versus group-oriented design or communication patterns in project management contexts?

• RQ2: Do cultural communication differences seem to cause tensions in project management contexts involving participants from different cultures?

• RQ3: Do cultural factors affect the visual language different groups use when designing online materials (e.g., websites) for sharing information on the same event with other members of their same culture?

We believed addressing these questions could provide a richer understanding of how cultural communication and design preferences and expectations could affect the management of collaborative, international projects.

Important Events
In choosing materials for analysis, we focused on a number of important project events that occurred during this case because they involved stakeholders from both countries/cultures working together to develop key informational assets critical to the success of the Competition. We focused specifically on three events:

• Event 1: An initial planning meeting hosted by the University of Central Florida. For this first meeting to initiate the overall collaboration, visiting delegates from the PRC met with the US project researchers and administrators in order to negotiate the terms of the Competition. (This initial meeting took place on November 18, 2012 in Orlando, FL.)

• Event 2: An April 20-30, 2013 visit of the US delegation to Beijing and Shanghai. During this trip, the US stakeholders met with colleagues in the PRC in order to discuss additional details and visit with sponsoring agencies and partners in the PRC. This trip included a meeting with the Ministry of Culture (April 22), with China National Radio (April 23) and with the Shanghai Media Group (April 26).

• Event 3: Certain email-based and face-to-face planning meetings the web design and development team at the University of Central Florida had with partners in the PRC. These meetings were important because they shaped the design of the project websites. These meetings were conducted between April and June in 2013.

By focusing our analysis of the case on these particular interactions, we believe we can more effectively identify central variables that could affect cross-cultural communication (e.g., conveying and understanding ideas) in a wide range of project-related contexts.

Materials
After selecting specific instances of events for review, we next selected various types of materials for analysis. We selected these materials because they were central mechanisms for exchanging information between partners in the US and the PRC. The materials selected for review included:

• Submission guidelines for student films from both countries

• Meeting observation notes/field notes taken by both authors during planning meetings/exchanges

• Approximately twenty emails sent between the authors and participants from US and PRC teams

• A copy of the prepared memorandum of understanding between the two universities

• The official US website for the project (http://chinaus.cah.ucf.edu)

• The official PRC website for the project (http://www.ideaeyes.net/news/action2EnglishVersion.aspx)

We based our decision to examine these specific materials on our desire to focus on those documents most critical to the organization and implementation of the Competition.

In terms of data collection methods for this project, journal entries were viewed as particularly important tools for capturing experiential data and creating field texts (a perspective supported by Clandinin & Connelly, 2000). We used written notes vs. recording devices to collect observational data because the parties involved in the case were still getting to know one another throughout the planning of this event. For this reason, we did not wish to introduce any recording devices that might be perceived as jeopardizing the spirit of establishing effective partnerships by engaging in actions that might seem as questioning the trust of the involved parties (e.g., the desire to record meetings vs. rely on participants to remember that to which they had agreed at a meeting).

Policies and procedure documents dictated how the Competition would operate. They governed everything from the initial submission of films to the specific thematic categories and the mechanisms for judging films. We chose these policy and procedure documents for review because they could provide insights about embedded cultural values that shaped approaches and actions.

In terms of digital project deliverables, we analyzed two project websites:

• A website American designers created to promote the collaborative initiative and to advertise the film to American audiences, primarily targeting the English-speaking world.

• A website Chinese designers created to manage the submission of student films for Chinese participants and used to promote intellectual property rights among the younger generations of producers in China.

These websites were selected for analysis because they were documents critical to the Competition’s project management and they provided insights into the design preferences of American and Chinese designers.

Data Analysis
With our three research questions guiding our analysis, we used a qualitative coding approach to note relevant data within the materials we reviewed. Following several of the strategies suggested for identifying patterns in qualitative data outlined in Saldaña (2013), we specifically looked for patterns dealing with similarity/difference, frequency, sequence, correspondence, and causation. For example, correspondence events highlighted relationships between activities and events. These correspondences included when an email mentioned a specific document such as the memorandum of understanding that corresponded to both prior
events (negotiations leading to specific language choices) and future events (formatting decisions guiding the ultimate design of the Competition). Causation events noted moments that served as springboards for later outcomes or adjustments to the project. Similarly, when one pattern was observed multiple times, its frequency suggested that it deserved further analysis.

For this analysis process, we also used Gee’s (2014) “making strange” tool for discourse analysis. We then used this tool to note coded moments in our documents that made sense to us as project insiders, but would seem unusual— or “strange” to outsiders looking in from either culture (e.g., when important details seemed to be missing from key documents, which was strange because it was counterintuitive to American design expectations). We selected this overall approach for coding data because it allowed us to focus on those units of text that seemed most salient in relation to cultural communication differences.

Our three part textual coding strategy for identifying important events was as follows:

- **Part 1**: Did the text indicate an example of a cultural difference or similarity in communication style?
- **Part 2**: Was there something unique or “strange” about the text that spoke to embedded cultural values?
- **Part 3**: Were there causal or corresponding outcomes that could be linked to documents or document sections that spoke to moments of tension between project partners? (Such tensions would be useful for framing events or actions that were candidates for cultural misunderstanding.)

While this method did help us identify certain trends in our data, we do recognize it also created a number of limitations in terms of what we could say about the data.

To begin, our coding strategies were based upon our own subjective interpretations of events and how documents related to those events fit within those categories. Next, this classification method did not always capture complex communication nuances that sometimes resisted classification into discrete categories. Finally, this strategy did not always fully represent the holistic context of communication because it only accounted for written documents. In other words, if nonverbal cues such as eye contact or body language were not coded in individual notes or our own journal entries, they were excluded from the analysis entirely, leading to an incomplete picture of the event.

For our visual language review of the project websites, we also relied on similarities and differences to classify the documents and to perform our analysis. Fortunately, checklists for such visual comparisons exist in the literature, and we adapted the work of St.Amant (2005), who uses prototype theory from cognitive psychology in devising a procedure for examining intercultural web design.

In prototype theory, visual representations are key in structuring how individuals classify and categorize objects and images. Accordingly, website visitors from different cultural backgrounds will categorize visual images and objects differently, leading to varying expectations for appropriate and credible web content. In analyzing key design features within different cultures, St.Amant suggests prototypes create “scales of acceptability” that can be examined by developing a checklist to evaluate macro-level design features including menus, buttons, colors, hyperlinks, body text, search features, and images. This checklist can be further tailored to address more micro-level features, such as the particular patterns surrounding these elements (e.g., blue underlined hyperlinks, or using buttons only positioned on the left hand side of the page).

Although we did not use prototype theory explicitly in this work, a carefully considered model for comparing the two main websites for this film competition project was essential. Thus, following St.Amant’s suggestions for developing checklists for intercultural web design, we developed a similar checklist (Appendix A) to assess macro-level characteristics of both Chinese and American sites. The macro-level review done via this checklist focused on visual design aspects such as color scheme, iconography, textual density, and technical features. The micro level review, which followed the preliminary analysis, involved a more focused examination of each of these items in order to determine where they fit on the scale of acceptability for each respective culture. In order to ensure an accurate and representative sample has been achieved, St.Amant recommends concentrating on an initial site and then using five to seven other sites as secondary sources of comparison. However, given that the website comparison was only one aspect of the larger case history and the film competition was relatively unique, this level of detail was not included in the analysis.

**RESULTS: CROSS-CULTURAL ANALYSIS OF THE SINO-AMERICAN FILM COMPETITION**

In this section, we present the results of our analysis of the following events that took place during the organizational stages of the Sino-American Film Competition (between November of 2012 and June of 2013). Specific results discussed in this section include:

- A description of the practical challenges posed by translation
- A description of the cultural challenges posed by individual vs. collective work style preferences
- A framing of the project as a collaborative initiative serving diverse audiences with diverse expectations about media usage and distribution from project stakeholders
- An analysis of the PRC political contexts influencing certain, important project decisions
- A cross-cultural, visual comparison of two project websites to illustrate intercultural variations within the communication design process for the Competition

We believe these results provide a range of important insights related to effective communication design practices and approaches associated with working in international teams.

**Translation**

One significant issue we faced early on in this project was in regards to translation related to Sino-American communication. Because none of the American participants were fluent in Mandarin Chinese, all of the documents for the project were written in both Chinese and English – a factor that created serious workload issues for one of the project organizers. Later in the project, we were able to recruit students to help with this process, but early on, journal entries and project emails indicated that the process was, at times, burdensome and time consuming. In one journal entry recounting a planning meeting in the PRC, the US participants noted difficulty adapting to a lengthy meeting that was conducted entirely in Chinese and...
at which only the group’s translator spoke for the US delegation. For some of the US attendees who were accustomed to speaking directly to individuals at such meetings, this additional level of mediation via the translator was noted as being “unsettling.”

Despite the challenges associated with translation, it was important for these issues to be worked out early in the project’s life cycle in order to maintain open communications both in the planning and implementation stages of the Competition. Most importantly, to facilitate cultural exchange between viewing audiences, all films eventually needed to include subtitles so respective audiences in the other countries could understand the dialogue and the contexts from which films emerged. Fortunately, we were able to use our earlier experiences with translation to facilitate other aspects of the project. Doing so included approaches such as adding additional time into the submission guidelines’ production schedules for the students participating in the Competition in order to implement captioned subtitles.

Individual vs. Collective Dynamics in Project Submission Documents

Key cultural differences in individualistic versus collective design preferences were identified in the policy documents outlining the film submission process. These documents were designed to provide student filmmakers with instructions on how to submit their films for review. Because American participants had created their procedures independently and for American students while Chinese participants had created their procedures independently and for Chinese students, these items made for interesting documents for comparison.

In the US submission guidelines, students were instructed to submit their digital films individually and without any specified support from their university institution. The organizers provided registered users with access to servers for large file management and sharing on the Web (via technologies such as the Dropbox file hosting service). Therefore, the design of such an independent submission process could be easily arranged.

In the PRC, however, collective effort, even in terms of the document submission process, was more highly valued. As a result, organizers in the PRC encouraged university institutions to play a larger role in the process, and institutions there were encouraged work with students to identify and to submit their most representative student works. Instead of an individualistic form of patriotism, the context in the PRC was one where the honor of the university institution was at stake as students and administrators alike were encouraged to take pride in their educational background and affiliations. Also, due to the state policies over media content control in the PRC, all media contents submitted for the Competition in the PRC were subjected to review. Any materials uploaded to the public domain, or any PRC-based server that could be accessed by the general public, were screened in order to avoid the spread of content deemed “inappropriate for the mass public” by the state government.

While the US team had the option of employing websites such as Dropbox for collecting student works, the PRC-based team led by Shanghai University used a customized content management system. In this case, the Rookies Innovation Platform, a website created jointly by Shanghai University and other media agencies in the PRC, became the sole platform for submitting works for this Competition from within and outside of the country. The Rookies website was originally created to provide a platform for Chinese university students to showcase their digital films. It was the first to provide such an opportunity in the PRC, and it made efforts to educate and protect students in regards to the intellectual copyright aspects of their work. Although we, the authors, still witnessed the pattern of collectivism in the very design of the website, it nevertheless opened a path for the future development of website platforms that educate filmmakers about intellectual property rights and empower younger generations of producers and directors of independent films in the PRC.

Serving Diverse Audiences

The authors observed complex cultural differences related to how Chinese and American participants approached the potential audiences for this Competition. The submission guidelines used in the PRC, for example, included an extensive list of partners involved in the project. The authors believe the inclusion of such information spoke to the importance of industry credentialing and corporate sponsorship. The US version of these guidelines, by contrast, was more independent and situated more firmly in academia. The films were submitted directly to the American organizers, with no governmental review, and the categories for acceptable themes were more flexible than in the PRC. Such textual differences indicated diverse audiences with unique informational needs invested in this project.

Further analysis of the submission guidelines suggested the variations in the content of the guidelines focused on facilitating different audience networks. Entities in both nations, for example, desired a strong partnership between collaborative institutions, yet the system in the PRC allowed for more engagement with public audience by allowing for factors such as the broader public exposure of films beyond more traditional academic settings. In addition, the PRC participants allowed a wider audience to participate in content selection and voting activities by permitting individuals to use their mobile phones to engage in such practices. Thus locally created films had significant global reach as well. In many ways, this approach created global connections by allowing viewers from around the nation and the world to participate in the Competition via a combination of online media and mobile phones.

Cultural Shifts

As we analyzed policy documents for this part of the project, it became clear that there were some important moments of cultural shift in which attitudes or decisions were changed based on discussion or shared experiences between Chinese and American participants. (“Cultural shift” here means changes in attitudes or beliefs outside of initial impressions or ideas.) For instance, there were initially some very distinct cultural differences in regards to attitudes about the distribution of media. At the start of the collaboration, the US delegation was initially unfamiliar with China’s state policies regarding media production and distribution. The same was true for the Chinese delegation’s knowledge about the US culture surrounding digital video usage and distribution. This situation led to moments of tension and a delayed production schedule while the film submission processes were being negotiated. Just as the US participants needed to recognize and appreciate the role of the government in PRC media production, the Chinese partners were also meeting filmmakers in the US and learning about the design approach of US filmmakers for the first time. The latter practices emerge from a media culture that might be characterized as more commercial and educational, but less policy driven.
In another moment of cultural shift, cultural attitudes were positively affected by the US group’s visit to Beijing. The screening of prior work that took place during the visit provided a particularly significant opportunity for cross-cultural understanding between the two delegations. This situation represented a causal event because it specifically influenced how some of the language was phrased on the final version of the submission guidelines documents. During a one-day onsite meeting at C Media Group’s headquarters in Beijing, a selection of short digital films was shown to the group in order to provide attendees with a common set of example entries. One of the films shown at this event was “The Crane Dance.” “The Crane Dance” attempts to capture the complex sentiment of the younger generations towards tradition in the light of rapid modernity and urbanization. The film tells the story of a young boy’s re-discovery of his heritage and identity through learning a traditional form of dance from the village elders in the southern PRC.

Through watching “The Crane Dance” together, the delegations from both counties were able to see the Competition as a potential asset for safeguarding and promoting folk traditions in both countries. This factor was evidenced by an author/organizer’s journal entry in which he notes this event as being significant in helping him to better understand the significance of family history in Chinese culture. These experiences in Beijing also enabled the two parties to identify shared concerns such as the preservation of cultural values and local village identities and observe similar values in different cultural and political environments. Thus, the joint viewing of “The Crane Dance” served as a connecting point where the two parties were able to exchange ideas and strategies for solving the same essential problem – safeguarding against the disappearance of intangible cultural heritage in the globalized age.

Political Policies as Cultural Pressure Points

One final observation from our qualitative analysis focused on observation notes/journal entries and a series of emails that revealed moments of tension dealing with the project submission guidelines, particularly in regards to the categories under which students were to submit their work. One such event occurred when the Chinese partners decided to introduce an additional category during the final planning stage of the project and one journal entry noted US participants were concerned about how students and judges would interpret this new category. A broader knowledge about the politics of and the emerging political landscape in the PRC ultimately helped the American team members to better understand the central importance of a seemingly small detail that caused tension and delay in the planning of the Competition.

PRC state enterprises and public universities are both very policy driven. This situation is very different from that of the project’s US counterparts, which exercised more independence from...
governmental agencies. Fortunately, during the project’s planning phase the American participants were working with a subject matter expert who informed them that adding the new “China Dream” theme to the Competition was necessary to ensure the successful approval of the project in the PRC. Doing so was also central to securing funding support for the competition from both governmental and private sponsors in the PRC.

Visual Analysis of Project Websites
The last stage of our research involved a visual comparison of the two project websites. To compare and contrast the visual language used in these sites, we reviewed differences between the Rookies Innovation Platform website, created by Chinese designers, and a parallel website developed primarily for American audiences and created by American designers. Organizers believed that designers familiar with the goals, needs, and everyday patterns of their local audiences could more quickly produce compelling strategies that could lead to more effective designs to solicit films from each country. (This hypothesis is supported by Faiola and Matei’s (2005) findings, which was previously summarized in our literature review.)

The two sites chosen for this comparison included the American-designed informational site and the Chinese-designed film portal. The film competition initiative was originally launched through a WordPress-enabled site (see Figures 1-2) that provided information about the Competition for both Chinese and American audiences, although the American audiences were more common users of this site.

Films on the American side were then individually submitted using Dropbox or email submission, while the Chinese films were uploaded, annotated, and evaluated through the Rookies Innovation Platform (see Figures 3-4).

The purpose of the American website was primarily informational and used to advertise the Competition, its themes, and the overall procedure for submitting films. The Chinese site’s primary purpose was to provide details about submission for Chinese filmmakers. Thus it was not appropriate to directly compare all features of the American-designed website to all features of the Chinese-designed website due to the different informational purposes of these two sites. However, major aesthetic and functional features of the two sites can be compared at the macro level. Doing so is still a useful exercise for highlighting some high-level cultural differences in information design. As shown in Figures 1-2 (American designs) and Figures 3-4 (Chinese designs), a comparison of these two sites reveals some interesting differences.

In terms of the amount and type of content, the same American preferences low-context information identified by Wang et al. (2009) and the Chinese preference for additional technical information upfront as noted by Qiuye (2000) seems to hold true in certain parts of these websites. For instance, the American site emphasizes large visuals and a generous use of white space, while the Chinese site showcases the technical specifications prominently in the center of the page. This strategy makes these guidelines easily accessible by prospective Chinese participants, while the American visitors will need to search more to find technical information about the project and access the submission guidelines.

In terms of a more focused visual analysis of the specific icons and objects used within the sites, dragons and giant pandas are the two most popular icons use to represent a Chinese culture and are often selected for websites that are meant for an international audience. The American-designed site, in contrast, contained more neutral and officious icons such as state flags, government logos, and various photographs approved by the Chinese partners. It was useful to use design to symbolize partnership and authority by incorporating visual language reflective of both cultures into the final graphics of the official informational website. For example, in order to reinforce an ethos of unity, the two countries’ flags were blended into a single header image used atop the site.

On the Chinese-designed site, the image of a phoenix was adopted as a logo, and Chinese cultural and folk elements incorporated into the website’s icon of a baby bird with a watermarked phoenix. The design of Rookies Innovative Platform’s seemed to anticipate audiences that included foreign Internet users, but the site’s designers also wished to attract young, Chinese university students who were just starting to experiment with short digital films. The emphasis, therefore, was on “young, inexperienced, and unpolished” imagery, which was hoped to engage the target young audience. Such visual simplicity, however, belies more sophisticated technical depth. The Rookies Innovative Platform, for example, boasts of being the first of PRC-based websites for making intellectual property rights more understandable for young filmmakers. The site also aspires to help young and inexperienced student filmmakers become more polished and marketable in their career aspirations. For example, the phoenix watermark implies “the hinting potential to become brilliant, strong, and legendary” filmmakers that they could become through promoting their creative work through the Rookies Innovation Platform software.

In terms of color, the US-designed site is comparatively simple
and follows a specific nationalistic color theme. The PRC-based site, by contrast, uses additional color patterns (orange and yellow) designed to create a “warm” and “welcoming” effect according to Chinese cultural conventions. Another obvious difference can be found in the use of imagery on the two sites: the focus of the US site was to display visual portrayals of richly diverse folk and ethnic cultures from both the US and the PRC. Per our subject matter expert’s suggestion, a group of carefully selected images exemplifying similar cultural patterns were chosen for the banner rotation on the US site. These images included an African American jazz musician performing at an American football stadium, a female ethnic Kazakh tamboura player performing on a Chinese nomadic grassland, and a group of Halloween Jack O’ Lanterns juxtaposed with a group of Chinese Spring Festival Red Paper Lanterns. The banner images revolved in a constant motion separated by lengths of time and used to create a simple montage relevant to audiences from both countries. The visuals were large and prominent on the US site in order to attract random visitors who might be intimidated by a lengthy text-based introduction to the site.

The Chinese-designed site, on the other hand, used a more subdued visual aesthetic in order to provide more technical content in regards to the submission procedure for the Competition, using a denser amount of detail and text than would be likely found on a similar site created by American designers. (Figure 2, for example, shows that bulleted points include information about Tony’s Farm, the sponsor, which is information that would probably be conveyed in a background icon or logo on a US-designed website.) Similarly, much background information was presented within the submission guidelines; however, this was the kind of information that would likely reside on an entirely different “About the Competition” page on a US version of the site.

Elements of the Chinese-designed website also reinforced an ethos of collectivism. For instance, the home page of the Rookies platform contains the phase “Bring out the Creativeness of the Chinese People” in Chinese characters that fade in and out on the top banner—a design that confirms the collective effort as well as echoing Chairman Xi Jinping’s advocacy for national pride. The photos chosen for the home page of the Rookies platform, in turn, include a group photo of the American and Chinese teams at the screening and awards ceremony. (Such a visual demonstrates the high priority of the collective team effort as well as international collaboration.)

DISCUSSION: STRATEGIES FOR OVERCOMING CROSS-CULTURAL CHALLENGES

In this section, we review what we learned from this research and suggest a number of specific strategies for facilitating cross-cultural communication in Sino-American partnerships. Doing so allows readers to make use of these results for their own collaborative projects in which similarly complex negotiations take place between Chinese and American stakeholders.

In regards to the challenge resulting from individual versus collective communication preferences and the resulting political bureaucracy, it is critical to identify and secure the participation of a subject matter expert who understands and can work with the PRC’s state media policy. These local experts (especially ones with extensive, multisite fieldwork experience) are able to provide information that is essential in “decoding” project events and data, especially those events that cause tension. Our subject matter expert was Mr. Jianren Kuang, an award-winning Chinese playwright who had prior experience consulting with both Chinese and American media conglomerates such as CCTV and CBS. He provided the Americans with invaluable insights about media relations and socio-political policies. His interpretation of the late-introduced “Chinese Dream, American Dream” theme, for example, was a critical moment in helping the US team understand details of the new Chinese political structure as the importance of PRC government approval in our partnership. The advice and recommendation of our project consultant also helped us identify key partners in both Chinese education and industry—entities that could help support the project and serve as liaisons to state governments.

To assist with issues raised by diverse expectations of audience and media distribution, it is important to consult with bilingual subject matter experts who have spent time in both countries. In our case, this consultation helped project stakeholders identify the needs from both the American and the Chinese teams. It was also helpful for the US delegation to directly see some of the operational procedures at major commercial sites in the PRC—sites such as C Media Group’s headquarters in Beijing and Shanghai Media Group’s headquarters in Shanghai. The members of the American team found that identifying possible obstacles and proposing possible solutions onsite with the aid of experienced subject matter experts who have lived and/or traveled extensively in both countries was an effective cross-cultural communication mechanism in the field.

In regards to navigating political challenges, it is important to understand political differences and varying approaches to government oversight and regulation. Again, it is useful to rely on subject matter experts with experience in both countries for this knowledge. These local experts provided information that was essential in contextualizing the tense events noted as troublesome in our journal entries. In the case of our late breaking “China Dream” category, for example, one local expert helped to explain to the US members of the team why such late breaking information was worthwhile and important to include in the Competition as a new theme, even though it was complicated to adjust materials at that point in the process.

Navigating multiple audiences and media formats also means considering diverse audiences with particular informational needs and expectations. Because of this situation, it is essential to conduct site visits and meet with all involved stakeholders to determine the expectations for audience and media distribution. In the case of the American participants, a site visit to Beijing and Shanghai provided geographic and cultural familiarity, which was critical to properly frame the aspects of folk tradition and cultural heritage that eventually became major themes for the Competition. Meetings with PRC representatives in Beijing and Shanghai during the planning stage confirmed the two parties’ intention to further explore the possibility of safeguarding and promoting both counties’ folk traditions and cultural heritage through the digital film partnership.

Finally, for effective cross-cultural web design, we found that specific types of planning tools were effective for planning websites for diverse cultural audiences. Because ethos and collective character were so important to both US and PRC stakeholders, we chose to use narrative planning tools to think about audience and character more holistically. A holistic analysis of these sites asks us to consider the stories each site wishes to tell its audiences and the
characters that are participating in those stories. Through working with design teams from both countries, participants learned that narrative brainstorming or storyboarding tactics were effective design tactics in the pre-design phases of intercultural web design. Key stories about each culture articulate embedded values and reveal central cultural priorities in a way that is understandable and relatable to designers from another culture.

Stories can be used to highlight environmental themes, develop key actions or events, or frame character in a particular way. In the case examined here, while the US version of the Competition website connotes ideas about character that individual adventure, emotion, and visual imagination, the PRC version cultivates an ethos of community and professionalism through its use of detailed information about sponsorship, government approval, and technical detail. The desire of the Chinese stakeholders to reach users on mobile devices and inspire action was also more evident in the Chinese approach to the project, especially given the prominent inclusion of a quick response (QR) code that could be scanned by mobile device users in order to quickly load the portal’s website on their phones or tablets.

CONCLUSION

In this paper, we considered several examples of coded documents extracted from a detailed case history involving a Sino-American partnership. In developing solutions for problems that emerged during a collaborative, international project (e.g., late breaking changes to the Competition theme or finding appropriate partners in the media) the international partners involved in this case developed strategies for effective cross-national and cross-cultural information design projects. Analysis of documentation associated with the management of the film project framed some of the potential problems identified by this study and did so in regards to how we make important decisions about designing for international audiences composed of diverse individuals and communities.

The analysis of this case/this project also reveals a number of insights about Sino-American collaborations. This analysis also provides an example of why participants should be transparent in the criteria and policies employed with the various informational stakeholders from different cultures collaborate on a project. Through the events surrounding the planning of the Competition, participants from both cultures learned that cross-cultural communication requires delicate handling of information and interpretations of project goals when collaborating across cultures. As participants in this event, we – the authors – found the strategies presented in this essay to be especially beneficial for producing a cross-cultural multimedia project. Such approaches are likely to be useful for other information designers, communication designers, and project managers who seek to develop successful design-based partnerships that involve working with complex informational assets in international contexts.

REFERENCES


APPENDIX A: VISUAL CHECKLIST FOR WEBSITE EVALUATION
This checklist focused on aspects such as color scheme, iconography, textual density, and technical features.

Textual Density / White Space
- Text very dense, very little white space
- Text somewhat dense, little white space
- Average text and white space
- Text somewhat sparse, more white space
- Text very sparse, lots of white space

Hyperlinks
- Numerous hyperlinks (> 10)
- Many hyperlinks (> 5)
- Several hyperlinks (> 2)
- Few hyperlinks (1-3)
- No hyperlinks

Technical Features (check all that are present)
- Registration / login page
- Film submission upload field
- Interactive widgets
- Location aware services
- Search bar
- Dropbox functionality

Color Tone
- Warmer colors (reds and oranges)
- Cooler colors (blues and greens)
- Other

Visual Style
- Prominent visuals, given priority over text
- Subdued visuals, lower priority than text
- Visuals given equivalent priority to text

Logos:
- Competition logo
- Government sponsorship logo (how many: ___)
- Corporate sponsorship logo (how many: ___)
- Other logo

Describe Color Scheme:
Describe Icons/Images Used and Image Placement:
Other Observations:
Designing With HDR Data: What the Human Development Report Can Tell Us about International Users

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ABSTRACT
Intercultural professional communication (IPC) requires a nuanced understanding of international users’ interactions with technology and information. This requirement poses a distinct challenge to international communication and information designers who must overcome geographic, linguistic, and cultural barriers to understanding users as complex agents. The United Nations Development Program (UNDP) annually publishes a Human Development Report (HDR) that contains high-quality international statistics on the regional, national, and transnational contexts in which individuals use technology and information. Thus, the HDR can serve as a resource for communication designers working in international contexts. This article presents strategies for how communication designers might use the HDR when designing materials for users in other cultures as well as use when teaching international aspects of professional writing/communication. “

Categories and Subject Descriptors
H.0 Information Systems: General

General Terms
Documentation, Design

Keywords
Resources, Statistics, International communication, Intercultural professional communication (IPC)

INTRODUCTION
Designing communication for international audiences requires a nuanced understanding of how people apply information. Such use is a complex, multidimensional activity that includes learning, doing things with, and participating in the production of information (Johnson, 1998; see also Kimball, 2006 and Agboka, 2013). Neglecting or misunderstanding any one of these dimensions of use can render an informational product unusable. Consequently, understanding the “complex of use” (Johnson, 1998, p. 33) poses a distinct challenge to international communication designers who must overcome geographic, linguistic, and cultural barriers to create materials that are usable in different cultural settings. Within this context, communication designers can benefit greatly from sources – or resources – that provide information and insights on factors relating to design expectations and the conditions in which materials are used in different cultures. One such resource that can help in addressing such factors is the Human Development Report (HDR) produced annually by the United Nations Development Program (UNDP).

This article argues that the HDR is an often under-used resource that can assist communication designers in understanding end users in other cultures (UNDP, 2014b). Additionally, the information found in the HDR can provide communication designers with valuable insights on factors affecting users’ ability to access, understand, and evaluate informational products (UNDP, 2014b). Because HDR data examines factors (or “indicators”) affecting resource use in different countries and regions, it can offer a glimpse into population-level conditions affecting how people learn, do things with, and participate in the production of information and informational/information communication products (e.g., interfaces) (Principles of international statistics, n.d.-e). As such, HDR data can provide communication designers with a powerful foundation for designing and evaluating international communication. For example, communication designers can use information found in the HDR to identify problematic designs, provide a foundation for assessing the feasibility of certain designs, and shed light on resources available to users and designers in various contexts.
To examine how communication designers might make use of the HDR in different international contexts, this article is organized in the following way: First, the author provides a brief literature review that summarizes how multicultural professional communication (IPC) research investigates the learning, doing, and producing/participating facets of use. Next, the author introduces and provides a review of the annual HDR. In so doing, she discusses how the Report can provide communication designers with current, high-quality international statistics that can inform design practices in international contexts (Principles, n.d.-e). Then, in the section “Designing With HDR Data,” the author introduces and describes a model, approach – or heuristic – communication designers can use to apply statistical information (or “critical indicators”) from the HDR in effective ways that inform international design practices. After discussing this use of the HDR as a heuristic, the author examines how the text can serve as an important resource for teaching students about fundamentals of communication design in international contexts. The article then concludes by discussing theoretical, practical, and pedagogical implications for internationalizing communication design.

ABOUT THE HUMAN DEVELOPMENT REPORT
The focus of the HDR is to assess global progress (i.e., measurable achievements within and across nations) in three dimensions of human development:

- **Health**: Defined by the United Nations as life expectancy at birth
- **Education**: Defined by the United Nations as mean years of schooling and expected years of schooling at birth
- **Standard of Living**: Defined by the United Nations as Gross National Income (GNI) per capita (UNDP, 2014b)

To conduct this assessment, the creators of the HDR synthesize raw data that hundreds of cooperating agencies and humanitarian organizations provide to the UN on an annual basis (Sources of Data Used, n.d.). In collecting this information, all participating bodies agree to a set of standard methodological principles in order to ensure the data they provide are current, impartial, comparable, and confidential (Principles of International Statistics, n.d.).

The main purpose of the HDR is to synthesize the data provided by these organizations in order to create composite statistics individuals can use to track global progress in the three aforementioned dimensions of development. The most widely cited of these composite statistics is the Human Development Index (HDI), which aggregates data on health, education, and income into a single number used to rank countries (see UNDP, 2014b, p. 160-163 for the current rankings). The HDR also publishes composite statistics measuring unequal distribution of resources (i.e., the Inequality-Adjusted HDI), gender inequality (e.g., the Gender Inequality Index), and severe overall deprivation (i.e., the Multidimensional Poverty Index). Updated annually, these composite statistics allow policymakers and researchers to gauge a country’s overall attainment in the three dimensions, compare countries in terms of these factors, or track progress in one or more of these areas over time in or across nations.

Beyond the statistical tables, the global HDR includes a wealth of interpretative commentary. The 2014 Report, for example, highlights two emerging transnational themes – vulnerability and resilience – and connects these themes to trends in HDR data for that year. This commentary enables policymakers and other audiences to find meaning in the statistics. But composite statistics, presented by country, can only paint a picture of development in broad terms. Therefore, in addition to the global HDR, the UNDP commissions the publication of a variety of resources designed to cover different areas of the HDR’s data in more detail. For example, regional Human Development Reports (RHDRs) provide an in-depth look at problems affecting specific countries and regions such as food security in sub-Saharan Africa (UNDP, 2012).

Additionally, numerous topical reports review data relevant to development projects such as the use of information and communication technologies for development (or ICTD; see Hamel, 2010). Finally, the UNDP offers online resources enabling users to browse HDR data at a glance. These resources include the online Country Profiles discussed later in this section. (While the Country Profiles are not part of the written HDR document, they are closely related to this document because they summarize current HDR data by country for easy reference.) Taken together, the global HDR, RHDR, topical reports, and related online resources paint a comprehensive, detailed picture of human development at the regional, national, and transnational levels of analysis.

But just how useful is this picture? Since the HDR’s initial publication in 1990, scholars such as Murray (1993), Srinivasan (1994), and Sagar & Najam (1998) have questioned “how well the reports have lived up to their conceptual mandate” (Sagar & Najam, 1998, p. 249). Answers to this question hinge on evaluations of the report’s main deliverable: the HDI. On one hand, the HDI has found widespread international application in research, assessment, and policymaking within and beyond the United Nations. Alzate (2006), for example, used the HDI to measure quality of life among welfare recipients in the US state of Georgia – and to recommend development-based policy changes based on the findings. Similarly, Heeks (2008) used the HDI to set benchmarks for information and communication technology for development (ICTD) projects. In the medical sciences, the HDI is widely used as a research tool for correlating health, education and income with the prevalence of various illnesses (Antunes, Narvai, & Nugent 2003; Bray et al, 2012; Ang & Fock, 2014).

Occasionally, the HDR informs public debates about social and economic problems. For instance, popular statistician Nate Silver (2015) recently used the HDI to draw attention to the disproportionately high rate of homicide deaths in the United States (Silver, 2015). On the other hand, generations of critics have questioned whether the HDI accurately measures health, education and income, weighs these measures appropriately, or provides a more useful measure of development than Gross Domestic Product (GDP) (see both Chowdhury, 1991 and McGivillray & White, 1993 for foundational critiques of this approach). These critiques have engendered progressive “methodological refinements” in the way the HDI and other composite indices are calculated, such as new methods for measuring educational attainment in a given country (Deb, 2015). Today, the most recent wave of scrutiny focuses on problems with using HDR data to set goals and benchmarks for human progress (Fehling, Nelson, & Venkatapuram, 2013; Vandemoortele, 2015). As the HDR incorporates these new critiques into the methodology, the HDI will present a clearer, more consistent and, in short more useful picture of global human development.
LITERATURE REVIEW
A substantial body of intercultural professional communication (IPC) research investigates how end users learn from, do things with, and participate in the production of informational products (Dura, Singhal & Elias, 2013; Thatcher, 2012). To avoid stereotyping users with erroneous assumptions, IPC research draws extensively on empirical data (e.g., observations, interviews, etc.) collected by the communication designer or researcher using culturally sensitive methodologies (see, for example, Thatcher, 2001). However, even the most sophisticated research design cannot investigate all three dimensions of use in one study. Most of the studies reviewed here focus either on the learning, doing, or producing facets of use. Furthermore, each of these threads of research is loosely associated with specific theories and methodologies. For instance, much scholarship on users as practitioners draws on research methods from usability studies or cognitive psychology (e.g., McCool, 2010), whereas scholarship on users as producers draws on user-centered rhetorical theory (e.g., Agboka, 2013). This brief literature review summarizes current studies within each thread of IPC research (i.e., users as practitioners, learners and producers/citizens) and illustrates how these threads intertwine to produce a nuanced understanding of intercultural users in context.

What Users Do: Users as Practitioners, Consumers and Customers
Perhaps the end user’s most observable role is that of the practitioner, or the consumer of “ready-to-go artifacts that have already been designed and handed to them for some particular purpose” (Johnson, 1998, p. 46). A substantial thread of IPC research investigates cultural factors that shape how users interact with informational products. Behavioral in its focus, this research typically casts users as customers or consumers—often borrowing concepts from usability, cognitive psychology or linguistics. McCool (2010), for example, investigates how differences in linguistic categorization affect Anglo-American and Chinese users’ respective performance on a classification task, and found important implications for the design of global search engines. Again, using linguistics, Jansen and Janssen (2011) examine cultural preferences for regarding the arrangement of information in bad news letters. Similarly, Xu, Wang, Forey and Li (2010) investigate cultural differences in English-speaking and Chinese-language call center interactions, while Clark, Murfett, Rogers and Ang (2012) examine the role of empathy in bridging customers’ and agents’ conflicting goals at a multinational call center.

What these studies all have in common is they conceptualize informational products (such as customer service calls) as a means to an end for the user, whose goal is to use the information to complete a specific task. Thus, in this model, the user’s interaction with the informational product is transient and instrumental. For communication designers, this research offers valuable insights for designing efficient, satisfying, and successful communications in intercultural contexts. Such research does not, however, investigate what users learn from these transient interactions or invite users to actively participate in the production of knowledge.

How Users Learn: Users as Students and Recipients of Instruction
In addition to helping users complete specific tasks, informational products can promote learning. IPC research on how users learn from informational products has generally focused on cultural factors that shape users’ learning styles and preferences. For example, Thatcher (2012) examines how residents living along the U.S.-Mexico border prefer to receive health and sanitation information. The study identifies five distinct Latino groups based on cultural affiliation and family history; each group exhibited distinct preferences for informational designs. In a similar vein, St. Germaine (2012) explores subtle differences in the ways Spanish-speaking versus English-speaking audiences interact with online healthcare pages such as the number of user-generated comments left by each group. Understanding these differences can help designers create more effective and engaging healthcare information.

In the educational sector, Annous and Nicolas (2015) examine professors’ perceptions of Lebanese students’ needs to practice English as a foreign language– and professors’ willingness (or unwillingness) to accommodate those needs. Getto and St.Amant (2014), in turn, describe the affordances of user personas as a way to represent different “cultural groups of users” (p. 29) in a college-level course. These user personas co-evolve with the use of different information and communication technologies (ICTs) in the course. By investigating how intercultural users learn information as reported in the sources noted here, communication designers can improve the design of courses, instructional materials and other informational products.

How Users Participate: Users as Producers and Citizens
Contrary to some of the approaches noted—or implied—in the research discussed previously, users are not just recipients of information; they also participate in its production. Users often directly author informational products (for example, YouTube tutorials), modify existing ones, and participate in decision-making processes as citizens of the sociotechnical community (Johnson, 1998, p. 61). Often, participatory IPC research—which involves integrating intercultural users into the process of designing a product—draws on user-centered theory and employs a participatory design methodology (Johnson, 1998). Agboka’s (2013) study on “participatory localization” exemplifies this thread of research (p. 28). Agboka’s study investigates the use of Chinese pharmaceuticals in Ghana, where Chinese products are widely available, but poorly localized. For this project, Agboka interviewed potential users of a sexuopharmaceutical product in order to collect critiques of poorly translated (and sometimes unreadable) product instructions. Based on the interview data he collected, Agboka advocates a participatory translation and localization process “where communities of people own what they use” (p. 43).

As Agboka’s work on participatory localization suggests, the aim and scope of participatory IPC research is not limited to the design of communication and information products. Often, the goals of participatory research include sustainable social change that includes new, more user-centered iterations of informational products and changes to civic structures. Dura, Singhal and Elias (2013), for example, describe a Peruvian radio broadcast with a unique “listener as producer feedback loop” (p. 1) in which letters from listeners (mostly women) are dramatized and answered in subsequent program scripts. Working in collaboration with the station that broadcasts these messages, the researchers developed this broadcast’s unique approach into systematic model for women’s empowerment in the Amazonian community. In so doing, they met user needs and expectations by not only addressing topics relevant
to Amazonian women (e.g., domestic violence) in the actual broadcast, but also by improving social and economic structures related to these topics (e.g., women’s’ education and labor force participation). Thus, participatory IPC research not only studies but also facilitates user participation—ideally producing sustainable “social change” within the community as a whole (p. 33).

Of course, not every study achieves ideal outcomes. In participatory IPC research, intercultural factors compound the inherent “messiness” of participatory research in general (Walton, Zraly, & Mugenganga, 2015, p. 45). For instance, translation and localizations processes are “time consuming and costly” (Getto & St.Amant, 2014, p. 29). Consequently, participatory IPC research is notoriously constrained by “human-centric” concerns such as trust, funding and time (Walton, 2013, p. 46). In Agboka’s (2013) study, for example, time constraints prevented the researcher from interviewing regulatory officials or the designers of Chinese pharmaceutical instructions. This factor made it difficult for the researcher to generalize from project-specific results (Agboka, 2013, p. 40-41). In fact, problems arising from participatory situations can become the focus of the research itself (see, for example, Walton, Price, & Zraly, 2013; Hasrati, 2012). Unfortunately, complexities arising from intercultural communication and participatory methodology can limit the scope of participatory IPC research and thus limit its practical implications for design.

Taken together, the three different threads of IPC research described here (i.e., users as practitioners, learners, and producers) offer a rich account of the three dimensions of use: learning, doing things with, and participating in the design of information. But variations in theoretical orientation and methodology make it difficult to synthesize different studies into a coherent picture encompassing all three dimensions. Arguably, the reliance the studies reported on here placed on data specific to certain local populations makes it difficult to design informational products with a “universal aim” (UNDP, 2014b, p. 11) – i.e., inclusive products that serve as many users as possible. For communication designers, the challenge becomes finding ways—or resources—that can help with addressing the needs of such varied populations effectively and manageably. The HDR, in turn, provides data that can help in addressing this goal.

DESERING WITH HDR DATA
HDR data offers communication designers a resource to complement the threads of IPC research described in the previous section. As explained earlier, the purpose of HDR data is to assess the development of countries and regions along three major dimensions of well-being: health, education, and standard of living. These dimensions of well-being are particularly important to economists and policy-makers because they enable people to make use of the resources and opportunities in their local environments (ul Haq, 1995; Sen, 1999). As explained later in this section, much of the HDR data measures use on a large scale. Although the three dimensions of the HDR do not align perfectly with the three facets of use discussed in the literature review (i.e., learning, doing and producing/participating), they overlap substantially with these facets of use (for example, educational attainment affects the user’s ability to learn information).

Although all HDR data is potentially relevant to communication designers, it can be daunting for non-economists to navigate the information found in the Report. The interconnected global HDR, regional reports, topical papers, and online resources present a rich but byzantine repository of information that—while having important potential benefits, can be complex and difficult to use. This section outlines a heuristic approach, or shortcut, communication designers can use when reading and using HDR data for international design projects.

Overview of The Approach
This heuristic consists of a conceptual “bridge” (Pólya, 1945, p. 73) that connects HDR data to factors affecting the learning, doing, and producing/participating dimensions of use in international contexts. Pólya introduces the “bridge” metaphor to describe possible connections between existing data and unsolved problems. Thus, the “bridge” represents the genre of heuristic thinking that involves extrapolating existing data to new situations (p. 73). The heuristic described here highlights HDR data relevant to communication designers, thus building a “bridge” between the HDR and international/intercultural communication design. This heuristic/approach enables communication designers to quickly navigate the HDR and “derive something useful from the data” (Pólya, 1945, p. 73). At the heart of this approach are five critical HDR indicators every communication designer must know

- **Multidimensional poverty:** The prevalence of severe overall deprivation in a population
- **Relative percentage of the population who are Internet users:** The prevalence of Internet access
- **Adult literacy rate:** The percentage of the adult population who can read and write
- **Mean years of schooling (MYS):** The average number of years the population spends in primary or secondary school
- **Overall percentage of the population with at least some secondary education:** Higher education or vocational education beyond primary school

These indicators point to contextual conditions that enable people to effectively utilize informational resources. Large-scale deprivations in these indicators can prevent people from using informational products.

The following subsections of the article provide a description of each indicator, where to find it, and its relevance to international communication design. All of the statistics discussed here can be found online in the UNDP’s Country Profiles, which are an Internet resource maintained by the UNDP. Closely related to the written HDR document, these brief profiles summarize current HDR data by country for easy reference. However, the Country Profiles do not provide any discussion/interpretation of HDR data, illustrate trends in HDR data (such as rising or falling adult literacy rates), or present data by transnational area or region. Designers wishing to obtain this information should consult the global HDR and Country Reports for further reference.

To demonstrate the broad applicability of HDR data to communication design, the checklist presented in Figure 1 (developed by the author) illustrates how the five critical indicators can be used to evaluate communication products at any stage of the design process.

Each indicator in this checklist is discussed in the following subsections with reference to an existing informational product: Priya’s Shakti (Devineni & Menon, 2014). Designed by Indian-
American authors, Priya’s Shakti is an award-winning comic book that draws on Hindu mythology to raise awareness gender-based violence in India. However, a cursory review of the five critical indicators suggests that large-scale deprivations may prevent much of the Indian population from using this informational product.

A caveat: heuristics are “provisional and plausible,” not absolute (Pólya, 1945, p. 112). That is, heuristics generate solutions that are satisfactory, but not perfect. Three assumptions inform the particular heuristic approach to using the HDR as discussed here. The first assumption is that the best communication designs are inclusive; to address this factor, a given informational product should be designed to reach, serve, and be considered usable by as many users as possible. Thus, this heuristic does not specify minimum or maximum values that HDR indicators much reach before they become pertinent to communication design. Even in France, where 83% of the population has access to the Internet, print materials are still important to reaching the remaining 17% of individuals who do not have such access (France, n.d.-a).

Second, this approach assumes that communication designers and users can compensate for or work around many hurdles to user-centered design (e.g., they can overcome users’ lack of Internet access by circulating print versions of materials). Working around such hurdles requires creativity, ingenuity, intelligence, and knowledge of the local conditions of use. In areas with low adult literacy rates, for example, information can be presented in images, songs, films, or other dramatizations. The communication designer’s choice between these alternatives will depend on the available resources within a given community (e.g., films might be appropriate in some regions of India where going to the cinema is a popular activity). Thus, this approach does not prescribe specific methods to compensate for each hurdle.

Finally, this approach to using HDR data to guide communication design assumes that the HDR data will be used in the context of an iterative design process and in conjunction with other sources of information. It does not replace the need to consult scholarly research, user research, or linguistic and cultural information. Other scholars of international communication, for example, have elsewhere discussed the value of participatory processes in translation and localization (see, for example, Agboka, 2013). HDR data does not supersede these important sources of knowledge. Rather, it simply aids the designer in pinpointing large-scale hurdles to using information products that can affect a given community.

By identifying and circumventing these hurdles, communication designers can make information projects accessible and useful to as many users as possible.

Hurdles to Accessing Informational Products
Where people cannot access informational products, they cannot use them. This factor of access, in turn, can be a major challenge in relation to communication design in international contexts. Thus, the more communication designers can understand and anticipate such aspects of access, the more effectively they can address different global situations relating to communication design and sharing information.

Two HDR indicators can aid communication designers in identifying population-level hurdles to access are:
- The percentage of the population living in multidimensional poverty – i.e., severe overall deprivation
- The percentage of the population who are Internet users – i.e., individuals who can readily access the Internet on any device

Within the HDR, the multidimensional poverty rate is listed under the “Poverty” heading/category of the Statistical Annex of the written HDR document. The same information can also be found under the “Poverty” heading of a given nation’s online Country Profile page (available at http://HDR.undp.org/en/countries). The multidimensional poverty rate measures pervasive deprivation in health, education, and the relative standard of living in a given nation. Multidimensionally poor households might, for example, lack electricity, sanitation and basic household supplies (Understanding the data, n.d.-f). Consequently, most individuals living in multidimensional poverty cannot afford to purchase informational products (such as books) or devices (such as mobile phones and computers). Where multidimensional poverty is prevalent, costly informational products exclude users from participating in greater global exchanges.

Internet use, listed under the “International Integration” heading category of the HDR’s statistical annex and the “Mobility and Communication” heading category on the UNDP Country Profile page, measures the number of users who can readily access the Internet on any device. If Internet access in a given region is rare, that factor can be and indication that individuals in a given region might not be able to access, afford, or to use online informational products. By knowing of and considering these potential hurdles,
communication designers can explore ways to address them – for example, by creating low-cost, low-tech versions of informational products.

As obvious as these recommendations might seem, many otherwise sophisticated communication designs overlook basic impediments to access. For example, Priya’s Shakti (mentioned earlier in this section) is a digital eBook. Although the text is free to download via Amazon.com, doing so requires an individual to have an eBook reader and an Internet connection (Priya’s Shakti, 2014). According to the current HDR data on India’s Country Profile, however, the majority (55%) of the country’s population currently lives in multidimensional poverty (India, n.d.-c). Consequently, the majority of India’s population cannot afford to purchase eBook readers – and may even lack the electricity required to charge them. Such factors play a key role in the accessibility of the product and the ability for individuals to make use of the information it contains.

Furthermore, in order to engage in the kinds of participatory activity intended by the authors of this project (#standwithpriya), users need to have a Twitter account and an Internet-connected device (India, n.d.-c). The remaining 87.5% of India’s population cannot download Priya’s Shakti -- let alone tweet photos to the #standwithpriya hashtag. Given these prevalent hurdles, most of Priya’s Shakti’s target readers cannot access the text in its current iteration. By using this kind of HDR-related information, the authors of this comic book could dramatically expand the reach of Priya’s Shakti by redesigning the text to compensate for multidimensional poverty and lack of Internet access.

**Hurdles to Understanding Informational Products**

In general, education equips people with the capability to learn new information. Where access to education is limited, however, users may have trouble understanding or using certain informational products. HDR data, in turn, encompasses many indicators of education and can thus provide communication designers with important insights related to usability and education. Two such educational indicators covered in the HDR – and that can have direct implications for communication design – are

- Adult literacy rate: The percentage of adults who can read and write (15 years and older)
- Mean years of schooling (MYS): The average number of years of schooling received by people age 25 and older

Both of these indicators are listed under the “Education” heading of the “Country Profile” and also under the same heading in the statistical annex of the HDR.

Indicators such as these can aid communication designers in determining the best way to present information to different international audiences. In countries with a low adult literacy rate, communication designers should consider presenting information visually or aurally vs. textually. Mean years of schooling (MYS) measures educational attainment in a single number (Understanding the data, n.d.-f). This number can help communication designers determine what topics might be appropriate for certain audiences based on how much formal education might be needed to understand such topics (although it is no substitute for direct user feedback). By considering these potential barriers, communication designers can explore ways to address them – e.g., presenting information aurally or visually vs. textually or identifying and defining unfamiliar terms and concepts/concepts often associated with a certain degree of formal education (e.g., certain scientific processes).

It is important to note that these indicators do not measure intelligence or the capability to learn. Because learning is a core dimension of use, users are always learning – even where educational deprivations (e.g., a lack of education) affect the manner in which learning occurs. However, HDR data can help designers “understand the knowledge users have of technological artifacts and systems” and facilitate user knowledge by providing meaningful information (Johnson, 1998, p. 45). For example, India’s adult literacy rate is approximately 63%, and the average person has had approximately 4.5 years of schooling (India, n.d.-c). In relation to the Priya’s Shakti comic book noted earlier, these indicators raise two pertinent questions:

- **Question 1:** If 37% of India’s population cannot read Priya’s Shakti, how can the authors make the text accessible to this substantial population of users?
- **Question 2:** As Priya’s Shakti uses a literary device (e.g., alliteration) to connect Hindu mythology to contemporary problems (Priya’s Shakti, n.d.), how can the authors ensure that certain Indian readers understand the story’s relevance to gender-based violence in India today (and any other undefined terms or devices) given India’s relatively low MYS?

By answering these pertinent questions, the authors of the Priya’s Shakti comic book can increase the likelihood that educational deprivations do not stop readers from understanding the core message of Priya’s Shakti. Left unaddressed, however, such factors can prevent users from accessing, understanding, or acting upon the information provided in a given text.

**Hurdles to Producing and Participating In Information Design**

Information is not truly user-centered unless users “have a say” as producers of informational products and participants in the design process (Johnson, 1998, p. 32). User participation, however, is a complex phenomenon. It encompasses direct production, as when users make or modify a design, and citizenship, as when users advocate for making information available to the public. Users can participate passively (e.g., by allowing designers to collect data) or actively (e.g., by directly shaping the design of a product). In user-centered design, these various forms of user participation shape informational products at every stage of the design process. So far, the heuristic presented here has relied on data collected passively from users (in this case, HDR data). By inviting users to participate actively in the design process, communication designers can learn more about the implications of data for communication design. Such an approach also means users can challenge reductive assumptions derived from data.

The ability to participate in the design process, however, is not innate; rather, it requires specific competencies. For example, making and modifying informational products requires competencies such as vocational skills like computer literacy. Similarly, participating in public deliberation (e.g., town halls, design charrettes, etc.) requires at least some knowledge of civic structures. In countries high on the HDI (i.e., resource-rich countries with widespread access to education and health care), secondary education equips people
with the vocational and civic knowledge people need to “take their place in society as productive, responsible and democratic citizens” (UNESCO, 2014, par. 1).

Data such as the percentage of the population with at least some secondary education can serve as an indicator of how prepared users are to engage in participatory structures. This information is listed under the “Education” and gender-related sections found in the online “Country Profile” and in the statistical annex of the written HDR document. The idea is that users who have little or no formal secondary education might lack specific civic and vocational skills. Thus, any designs that require or rely on such skills to access or use information might be of limited value to such individuals. As a result, communication designers might have to address this factor through a scaffolding approach (i.e., structured participatory opportunities such as town halls and focus groups) that allows such individuals to participate in the process of user-centered design.

The designers of the Priya’s Shakti comic book, for example, currently offer workshops on “comic books for social change,” and these workshops are designed for and targeted primarily at teens (Priya’s Shakti, n.d.). At these workshops, teens use Mozilla Popcorn Maker and other software to produce and circulate their own digital comics about sexual violence in India. However, only 38.7% of India’s population has at least some secondary education; for women, the number is 26% (India, n.d.-c). Based on these statistics, many Indian teens might lack experience with computer applications like Popcorn Maker, and gender inequality could further exacerbates this hurdle to participation among the intended audience.

To ensure that everyone can participate in such activities, the Priya’s Shakti workshops are staffed with a multidisciplinary team of design and technology professionals who support the teen participants at every step of the design phase. The comics created by teens at these workshops are displayed online and are printed out for family and friends, further circulating Priya’s Shakti’s message within local communities. By inviting teen readers to make their own comics, and providing adequate scaffolding in the form of well-staffed workshops, the authors of Priya’s Shakti overcame widespread hurdles to participation. The three-point checklist for evaluating informational products (see Figure 2) summarizes the evaluation of Priya’s Shakti.

This example illustrates that the information found in the HDR can provide communication designers with insights they can use to determine if scaffolding is needed to achieve a particular objective. In particular, the percentage of the population with at least some secondary education is a key human development indicator that helps communicators determine a given audience’s vocational skills (such as computer literacy) and knowledge of participatory/civic structures. If a target audience lacks secondary education, users may be unable to readily offer feedback on a design or participate in the design process (i.e., due to lack of computer literacy, inadequate knowledge of participatory channels, etc.). In these cases, communication designers should consider scaffolding approaches that enable users to participate such as providing structured participatory activities and adequate technical support. Thus, HDR data on the prevalence of secondary education can help communication designers identify impediments to user participation. Such data can also help communication designers consider the kinds of scaffolding approaches that might work best for a target population.

What is the best revision strategy for communication designers faced with multiple large-scale hurdles and limited time? Although the checklist provided here does not prescribe specific compensatory strategies for each hurdle, communication designers can use HDR data to prioritize revisions and plan the next steps in the design process. They can do so in the following way:

1. First, the designer must determine if a given hurdle exists. If so, the designer must then determine if that hurdle truly requires compensatory strategies. For example, only 12.5% of India’s population uses the Internet on any device (India, n.d.-c). But this daunting statistic requires no compensatory strategy if the designer is drafting a technical support document for the minority of Indians who are already Internet users.

2. Second, designers must determine which hurdles to tackle first. Simple statistics can aid this decision by helping the designer determine which hurdle is affecting the largest number of users. In the case of Priya’s Shakti, lack of Internet access (87.5%) in India affects more users than multidimensional poverty (55%) or lack of adult literacy (37%) (India, n.d.-c). Therefore, compensating for lack of Internet access could expand access to the text.

3. Third, some compensatory strategies fortuitously address multiple hurdles in a single iteration. For example, a film version of Priya’s Shakti would compensate for both lack of Internet access and adult literacy in India. Free screenings of the

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**Figure 2: Three-Point Checklist for Priya’s Shakti**

1. **Most users can access this informational product.**
   - **Critical Indicators:** Population in multidimensional poverty (%), Internet users (% of population), other (specify)

2. **Most users can read and understand this information.**
   - **Critical Indicators:** Adult literacy rate (% ages 15 and older), Mean years of schooling (MYS), other (specify)

3. **Most users can take advantage of opportunities to participate.**
   - **Key Indicators:** Population with at least some secondary education (% age 25 and above, male and female), other (specify)
film at local cinemas could compensate for multidimensional poverty. Of course, existing scholarship, user research and participatory methods can yield invaluable insights that further guide the design process.

In these ways, communication designers can make use of information in the HDR to design more effective informational products. They can also use this information to devise strategies for how those products are introduced to, used, or supported in a given international context.

**TEACHING WITH HDR DATA**

Because it provides key information relevant to the learning, doing, and producing/participation dimensions of use, HDR data is widely applicable to international communication design contexts. As such, the HDR can serve as a valuable resource that educators can use when teaching students about communication design in global settings. This section describes how students in one of the courses taught by the author used HDR data to complete an assignment. The specific class is ENGL3804: Disasters in Writing, and the assignment in question is to design a public information resource to mitigate the effects of a current global disaster. Such an overview can help readers consider how they might also use the HDR to teach students in different communication-related classes about designing for international audiences.

**Overview of a Sample Assignment**

For the assignment discussed here, the instructor has students engage in a rapid prototyping exercise designed to simulate the rhetorical situation of a global disaster. The overall process begins by having students identify and assess/evaluate a current global rhetorical situation of a global disaster. The overall process begins by having students identify and assess/evaluate a current global rhetorical situation of a global disaster (e.g., an earthquake that struck a given region). Next, students develop a mock-up (or rough draft) of a public information resource to share information with individuals in this crisis situation, and the students have only 20 minutes of lead-time to develop this item. The mock-up (or draft) can be flyer/poster, website, brochure, or any other informational resource that will help the public during the disaster (students choose the disaster and the type of resource to create). Once the mock-up or draft is complete, students evaluate their own mock-ups (which consisted of rough sketches, sample text and brief statements of purpose) using HDR data and the three-point checklist for evaluating informational products discussed in the previous section (Figure 3). (For the example discussed here, the author used initial research to create the checklist in Figure 3.)

This checklist connects the three facets of user-centered design (i.e., users as practitioners, learners, and productive citizens) to five key HDR indicators that affect users’ ability to access and understand informational products.

For this part of the process, students use/to draw on HDR data in the following way: Using the written HDR or related online Country Profiles, students look up the five key human development indicators (i.e., rates of multidimensional poverty, Internet access, adult literacy, mean years of schooling and secondary education) for the country or region affected by their chosen disaster. Based on these statistics, students determine whether any aspect of their information resource is inappropriate for the target population (e.g., designing a social media campaign for a population in which only 7% of people have ready access to the Internet). If HDR indicators suggest that an aspect of the design is inappropriate, students note whether characteristics of the target population prevent individuals there from accessing and understanding the information the communication designer wishes to share or participating in the process of user-centered design.

Once this step is complete, students use the results of their HDR-based research to create a second iteration of their information resource. Again, this iteration includes a mock-up or draft, sample text and a statement of purpose. During this overall process, students report their progress in an unscientific Moodle poll (see Appendix A) so all participants can view how others are doing on—and the approaches they are using for—these projects.

For the iteration of the class reported on here, all students (100%) reported, via the Moodle poll, adjusting their design concept based on what they found in the HDR or related online Country Profiles (n= 15 students). Although this result is not generalizable, it indicates that students in the course found HDR data useful for rapid prototyping. The students’ projects described in the next sections of this entry represent a range of creative ways students in this course applied the five critical indicators and other HDR data to their projects.

**Kristina’s Project: A Shelter List for Displaced Nigerians**

For the assignment described here, ten of the fifteen students in the author’s class completed the three-point checklist for evaluating informational products identified specific hurdles to user-centered design. For this project, one student (Kristina) created a mock-up of a resource containing information for Nigerians affected by the

1. **Most users can access this informational product.**
   - **Critical Indicators:** Population in multidimensional poverty (%), Internet users (% of population), other (specify)

2. **Most users can read and understand this information.**
   - **Critical Indicators:** Adult literacy rate (% ages 15 and older), Mean years of schooling (MYS), other (specify)

3. **Most users can take advantage of opportunities to participate.**
   - **Key Indicators:** Population with at least some secondary education (% age 25 and above, male and female), other (specify)

Figure 3: Three Point Checklist For Evaluating Informational Products (2)
Boko Haram crisis. (When creating these initial items, students did not consult the HDR.) Kristina initially conceptualized her idea for this project as a written list of available/open shelters for displaced individuals in Nigeria. Although Kristina was able to identify names of Nigerian shelters that were sporadically mentioned in online news reports about Boko Haram, she was unable to find this information in a centralized list -- or any evidence that humanitarian organizations were providing such a centralized list to displaced individuals. So, Kristina’s first pen-and-paper mock-up of an information resource was a flyer that resembled the shelter lists distributed to homeless individuals by organizations such as the US government’s Department of Housing and Urban Development (HUD) (see Figure 4).

In her related statement of purpose for this project, Kristina explains:

[The list] would help people who are displaced and living in shelters that are overrun currently, like the one in Adamwe at the American University of Nigeria. Shelters like those that are overflowing with displaced people are where I would ideally post the list, as they have limited Internet access in Nigeria, especially in affected areas. Essentially, it serves to properly allocate resources in the area to people instead of overwhelming one shelter. (Personal communication, April 1, 2015)

After consulting the HDR to research the rates of multidimensional poverty, Internet access, adult literacy, mean years of schooling, and secondary education in Nigeria, Kristina identified one major hurdle facing potential users of her proposed list: literacy. Given Nigeria’s current adult literacy rate of 51.1% (UNDP, 2014b, p. 194), almost half of the Nigerian population would seem unable to fully use written resources like shelter lists.

To address this factor, Kristina decided to use overcrowded conditions to the user’s advantage: “In a high population area, odds are someone will be able to read out loud the information to someone who cannot read the text” (Personal communication, April 1, 2015). She did so by encouraging literate readers to share the information with others. The second iteration of her list (see Figure 5), informed by HDR data on adult literacy, reflected this information in the form of a brief note encouraging readers to orate the information on the list to those who cannot read an to do so in order to minimize overcrowding for all displaced Nigerians (Personal communication, April 8, 2015).

James’ Project: Packing For Liberia

For this same assignment, two of the fifteen students in the class decided to communicate about HDR data in their prototypes. These students presented HDR data to readers in order to provide background information about a country affected by disaster. For example, one student (James) prototyped a resource for North American health care workers volunteering during the recent (2014) Ebola crisis in Liberia. In his proposal for this project, James explains the first iteration of his prototype as “a packing list which describes what to bring to Liberia if you decide to volunteer” (Personal communication, April 1, 2015). After completing the three-point checklist, James determined that his North American audience would not face “too many hurdles” to using the packing list (Personal communication, April 1, 2015). However, understanding Liberia’s HDR data and customs laws can help American volunteers decide what to pack.

In the second iteration of his statement of purpose, James notes Liberia’s high rate of multidimensional poverty and inflation (based on the Consumer Price Index, an HDI indicator of inflation not discussed here). Based on this data, James concluded that travelers might have a hard time purchasing personal supplies (toiletries, medications, hand sanitizer, etc.) in Liberia. James’ second mock-up of his information resource thus incorporates a short paragraph highlighting key HDR indicators to help travelers determine what to pack, what to leave home, and what can be purchased in Liberia (Personal communication, April 8, 2015).

Dylan’s Project: Combatting Anti-Semitism in France

Three of the fifteen students in the class discovered that the checklist identified useful resources instead of hurdles and obstacles. One student (Dylan) prototyped a website to help the Jewish community in France address growing anti-Semitism in the country. Her first pen-and-paper mockup of the website focuses on teaching the reader about anti-Semitism, including many “how-to” pages on coping and self-defense:

My website would be user geared toward someone in France who wants to know how to handle anti-Semitic situations within the country … The website would include tips which touch on: what to do before, during, and after experiencing/witnessing anti-Semitic events, a list of possible outcomes on suggested actions (both good and bad), along with visuals others can see which would show ways of self defense. (Personal communication, April 1, 2015)

Ranking high on the human development index, France is a country whose citizens have excellent access to resources, education and healthcare (UNDP, 2014a). Therefore, it is not surprising that Dylan’s completed checklist identified no specific hurdles to user-centered design.
Dylan, however, discovered France has “great education”; notably, 80% of the population has had at least some secondary education (France, n.d.-a). Because secondary education includes civic and vocational instruction, Dylan hypothesized that most of her readers have learned about anti-Semitism in Social Studies-type classes in school (Personal communication, April 1, 2015). Therefore, in the second iteration, Dylan ultimately decided to reduce her website’s focus on instructions. Her second iteration instead focused on providing a hub for users to connect and share their own experiences (Personal communication, April 8, 2015). Thus, the checklist and HDR data helped her leverage an existing resource – secondary education – to focus her idea and streamline the design.

The student projects described in this overall section illustrate the benefits of using existing HDR data, especially in situations that present limited opportunities for user research. Again, although HDR data does not supplant user research, it can aid designers in identifying large-scale hurdles that would prevent people from using the design at all. In the instance of the course taught by the author (reported on here), HDR data helped students pinpoint design problems, leverage existing resources and even highlight important factual information to share with readers. Students ultimately revised their designs based on this data. Thus, designing with HDR data provided students with an opportunity to make audience-centered design decisions – a practice that serves professional writers and readers well in any context.

CONCLUSION

In addition to helping communicators design informational products for international contexts, an informed use of the HDR can have broader implications for research, practice, and pedagogy in a range of communication-related fields. Although IPC research offers many studies of communication design in local contexts, comparatively little research describes population-level conditions affecting the complex of use on a large scale. In particular, communication designers need to know more about users’ compensatory strategies for overcoming large-scale hurdles to using informational products. In addition to contributing to a nuanced picture of international users, such research should connect international professional communication to a broader discourse on human progress and development.

For practitioners of international communication design, the five indicators and checklist overviewed in this entry represent one step toward systematically utilizing international statistics. The checklist offers a flexible framework for connecting data to use and research to design, and the annual HDR (2014) represents just one source of useful data. As communication designers explore other sources of information about international contexts, new indicators can be added to the checklist under the relevant dimension of use.

One, final thought: professional communication pedagogy already offers an array of methods for teaching and fostering intercultural collaboration. Paretti, McNair, and Holloway-Attaway (2007), for example, describe an extended “virtual global collaboration” between North American and Swedish students in the context of...
a class. However, we also need to develop heuristics that students can deploy in the range of situations where such extensive collaborations are not feasible. This article remixes a fundamental heuristic from Pólya (1973) to advocate a central and all-important concept of communication design: If you can’t consult users, derive something useful from the data.

REFERENCES


APPENDIX A: MOODLE POLL ON DESIGNING WITH HDR DATA

Question 1: Did you change your design based on HDR data?

Question 2: Did you identify any specific hurdles that would keep people from using your prototype?

Question 3: Other than identifying hurdles, did you discover any other applications of HDR data?
Book reviews

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In *World 3.0: Global prosperity and how to achieve it*, Pankaj Ghemawat provides a series of perspectives on globalization that run counter to many of the claims being lobbied by both ends of the political spectrum. For technical and professional communicators who are interested in intercultural research, globalization, and global information flows, these perspectives should prove interesting, inspiring, and compelling. Though *World 3.0* is clearly anchored in the field of economics, there is also a distinctly rhetorical element. Ghemawat analyzes largely empirical, quantitative data on such topics as global capital flows and the cross-border integration of markets. He also reflects on worldviews, cultural differences, case studies of successful and unsuccessful cross-border integrations, and the role of human perception in mapping distances, however, which brings a very holistic, qualitative feel to the book.

In his own words from the first page of Chapter 1, the book examines the “colliding worldviews” associated with conversations on globalization (p. 3). Specifically, Ghemawat draws on four models for globalization that he terms World 0.0, World 1.0, World 2.0, and World 3.0. Starting at a time in human history where human experience consisted of “banding together in small groups to survive hostile conditions” (World 0.0), he reflects on the transition to the rise of the nation-state (World 1.0), the supposed rise of a globalized society (World 2.0), and what he hopes will be a new paradigm for discussing globalization (World 3.0) (p. 5). He deconstructs rhetoric that would advise retreating to a protectionist, closed model of international exchange (World 1.0) or adopting an unproblematic, deregulated global economy (World
2.0). And in the wake of these two earlier paradigms, he argues for his own (World 3.0), which he introduces as a “specific, grounded framework for action” that he feels holds the potential to usher in a new era of global prosperity (p. 19).

Ghemawat refers often to Thomas Friedman’s The World is flat: A brief history of the twenty-first century, as well as to anti-globalization advocates who have grown louder in the wake of the 2008 financial crash, as the main counterpoints to his own argument. Taking Friedman to task for drawing problematic conclusions from historical events such as the fall of the Berlin Wall in 1989, Ghemawat draws on a staggering amount of empirical data from economists, IT specialists, and other researchers, to claim that “the true state of the world today is that of semiglobalization” (p. 37, 23). In Chapter 2, he begins to make the case for semiglobalization, drawing on data ranging from international telephone calling minutes to venture capital spending (pp. 26-29). The impacts of a misperception of semiglobalization as total globalization leads to “overestimation” of global interconnectedness as a “widespread tendency” (p. 33).

From this tendency to overestimate the levels of global interconnectedness, in Chapter 3 Ghemawat provides a heuristic framework for assessing difference and distance he calls CAGE, which stands for cultural distance, administrative distance, geographic distance, and economic distance (p. 54). This is one of his most important interventions, as the framework enables readers to “appreciate degrees of difference or distance in order to distinguish what is near from what is far” (p. 54; emphasis original). Essentially: Ghemawat is proposing that difference and distance are equally cultural, administrative, geographic, and economic constructs. Readers should assess all these dimensions when considering the flow of capital, people, and knowledge across borders.

Drawing on a variety of economic data—including estimates of the impacts of the Doha proposals for world trade talks that have been introduced over the past 10-15 years by world leaders (https://en.wikipedia.org/wiki/Doha_Development_Round)—Ghemawat weighs the opportunities and risks of more fully integrating global markets, or “opening up” as he calls it (p. 63). In
Chapter 4, he argues that the benefits of opening up far outweigh the risks, to the tune of several times as large as the Doha proposals of $100-$300 billion. He also claims that the potential gains from further integration of markets are not only economic, however, but also political and cultural. These added benefits include inspiration from contact with dissimilar cultures, increased cultural diversity, and new forms of cultural mixture and adaptation.

In Part 2 of the book, Chapters 5-11, Ghemawat problematizes supposed consequences of globalization, including global concentration, global externalities, global risks, global imbalances, global exploitation, global oppression, and global homogenization. Rather than dismissing each of these consequences, however, he carefully weighs available data to complicate each consequence. Ultimately, he finds cause in each case to take the good of globalization with the bad, and to continue to advocate for increased cross-border integration, though he also advocates careful regulation and policy work to guide this integration. His emphasis here is that globalization is not inherently exploitative, oppressive, and risky, though he admits that it can lead to these consequences if not pursued in a careful manner.

In Part 3, Chapters 12-15, Ghemawat presents four scales in which World 3.0 can operate, including the global, national, organizational, and individual levels. At each level of scale, he provides compelling heuristics for thinking about how readers can contribute to a more integrated world. These include three “progressive stages of relating better to others across distance: awareness, acquaintance, and altruism” (p. 324). They also include a Global Attitude Protocol, or series of questions for assessing how global a reader’s attitudes are (p. 326-7). Each of these heuristics appear to hold much potential for integration into courses in cultural rhetorics, intercultural research, technical communication, and business.

Overall, Ghemawat’s book is written in a disarmingly simple, understandable format, given the wide-ranging topics he takes on. Though certain passages may prove overly dense for readers who are less versed in economic principles, the book does a surprisingly good job at breaking these principles down for a non-specialist audience. Admittedly one of the best books this reviewer has read
in some time, there is little to hate and much to love in World 3.0. Like its subject matter, the book presents a world of new possibilities for thinkers from a wide variety of backgrounds.

When working at different organizations, communication designers may come across “boutique knowledge,” or information that is valuable because it is not widely known to all employees. Such information is a part of most any organization, and is sometimes only accessible to the most experienced people that work for a company. However, in order to do a job well, learning how to access boutique knowledge is important, and so, in his book Rhetorical Memory, Stewart Whittemore argues communication designers need a strategy for doing so. Whittemore follows the work of a team of technical communicators at a company assigned the pseudonym “Software Unlimited.” He draws from a qualitative dataset to help readers understand the daily activities of his participants and how they manage information to support their work. The book also uses the dataset to explain how information management is made up of complex memory practices.

The first chapter of the book wastes no time explaining Whittemore’s underlying argument motivating his research. The author explains, “technical communicators’ relationship to information in their workplaces is rarely straightforward, and, in the absence of a perfect memory, mastering information requires a strategy” (p. 5). Drawing heavily from rhetorical theory, psychology, and learning theory, Whittemore discusses how information management is an emerging role adopted by communication designers as a means for adding value to teams, organizations, and customers. The author contends that effective memory practice “represents knowledge as an activity that has proven successful to getting a particular job done in the past and
thus represents a valuable template for doing so in the future” (p. 202). In this way, the book positions effective memory practice as vital for communication designers to successfully contribute at work.

To support this argument, Whittemore starts with the concept of a “memory regime,” a term borrowed from Bowker (2005). He broadly defines a memory regime as “the collective set of memory practices” (p. 22), and explains, “a memory regime has a politics that affects things like what is preserved in and what is deleted from the collective memory” (p. 21). A memory regime also influences who has access to information, including who can participate in forming and telling stories about a company. Also, memory regimes can differ for various reasons, and communication designers must “expect that the need to cater to different ethnic and demographic populations would entail some differences in the memory regime of each region and even of each location” (p. 23-24). Intuitively, what is unique about a memory regime is an organization’s context and how people respond to company culture.

While corporate memory practices have been discussed by other researchers and practiced in different ways by software development teams for many years, Whittemore adds an intriguing element to this discussion by describing the work theoretically. Drawing from rhetorical concepts of techne (art or craft), kairos (the opportune moment), phronesis (wisdom), and hexis (state of being), the author provides a basis for understanding memory work as a skillset and knowledge base that can be gained as a person learns how to work at a company. Chapter 2 summarizes how the relationships between these rhetorical concepts function as a framework for mastering memory practices in an organization (see the useful figures on pages 34-36), and the argument presented will likely seem intuitive for rhetoric scholars and accessible for those practitioners new to the terminology. While I am left with some questions (e.g. how the workplace environmental design contributes to memory practices), the framework is useful for the coming chapters where readers meet the study’s participants. At the end of Chapter 2, readers also learn of Whittemore’s taxonomy of memory practices, which were developed through a grounded
theory approach to coding and analyzing participant data. The taxonomy is comprised of activities such as archiving, reminding, finding, referencing, storytelling, and gesturing, and are no doubt a useful place to for communication design scholars and practitioners to begin investigating memory practices at different workplaces.

Chapter 3 describes difficulties associated with studying memory in different workplace contexts. These challenges, like the rhetorical framework presented in Chapter 2, will appear intuitive to those familiar with workplace studies and useful for others just learning to engage in such research. Over the first few pages of Chapter 3, Whittemore specifically addresses improvisation as memory practice by arguing, “memory practices are a particularly rich source of improvisation and variability” (p. 64). Additionally, readers learn of the reciprocal nature of memory practices in context: “That is, memory regimes not only shape and articulate practices; practices also shape and articulate memory regimes” (p. 64). There are politics and power relationships associated with studying memory the regime. While not a definitive list of possible challenges for studying memory in different contexts, the ideas presented help form a basis for this particular study, and also formulate a sense of the memory regime at Software Unlimited.

Chapters 4, 5, and 6 present the results of each participant in the study, with all three at a different level of memory mastery in the Software Unlimited context. What readers gain from each chapter are concrete examples of how memory practices are learned and mastered by communication designers at this specific organization. In Chapter 4, for instance, we learn about Robert, an eager newcomer to the company working hard to cultivate respect from his peers and learn what he needs to know to do a good job. Robert adds value because “rhetorical memory practices enable newcomers to discover information important to an organization, to preserve this information so that it can be refound, and to appropriately and effectively employ this information” (p. 79). In Chapter 5 we learn about sidelined and overextended workers like Lucy, who “employ multiple memory practices to help themselves achieve work-family balance” (p. 119). Finally, in Chapter 6 we meet a senior member of the team, Angela, who is depicted as a “full member” (p. 159) of the community because she knows
meaningful information about the company and understands the histories associated with it. Even more, access to this information enables Angela to participate freely in the work of Software Unlimited. Angela, in other words, has access to the valuable “boutique knowledge” described in the first paragraph, whereas Robert does not (yet).

Chapter 7 begins by summarizing some of what readers have already learned, but eventually explains what is one of the important takeaways from the book. That is, communication designers can “leverage their rhetorical memory practices as learning practices” (p. 200). This argument has clear implications for how communication designers work, but also, for what students learn in the classroom. The underlying argument is communication design instructors should develop curriculum that helps students develop effective memory practices. In some ways, programs in communication design teach memory practices already, but drawing from the concepts presented here provides a fresh take on approaching this work in the classroom.

Overall, *Rhetorical Memory* is a good read because practitioners will discover methods to improve their own memory strategies, and scholars will find potential research projects to develop. For example, readers learn memory regimes are both rhetorical and contextual, but Whittemore does not (in depth) discuss how regimes and practices are also spatial. Additionally, readers may discover questions about how memory practices respond to shared project management methods, particularly given constantly shifting technological, cultural, and corporate landscapes. Whittemore’s book is a useful addition to the workplace study tradition, and researchers in communication design will no doubt find *Rhetorical Memory* an intriguing contribution to the field.

References