

# THE INFLUENCE OF HIGH- AND LOW-CONTEXT COMMUNICATION STYLES ON THE DESIGN, CONTENT, AND LANGUAGE OF BUSINESS-TO-BUSINESS WEB SITES

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*Language and communication, especially high- versus low-context communication styles, have been shown to lead to differences in Web sites. Low-context communication provides the lowest common denominator for intercultural communication through the Internet by making messages linear, articulated, explicit, and therefore easier to understand in the absence of contextual clues. Based on theories of intercultural business communication and recent empirical studies, this article investigates how communication styles influence Web site design and content. It is hypothesized that, for the global audience, Web sites from low-context communication countries are easier to find, use colors and graphics more effectively, make navigation more user-friendly, contain more corporate and product information cues, and offer more contract- and relationship-related content than Web sites from high-context communication countries. This article also contributes to international business communication by investigating the choice of languages in business-to-business (B2B) Web sites. Empirical findings confirm the influence of high- versus low-context communication styles through systematic content analysis of 597 B2B Web sites in 57 countries. High-context communication style may be detrimental to the design of global Web sites, making them less readable, less effective in their use of colors and graphics, and less interactive for the globally dispersed users.*

**Keywords:** *language; high-context communication; Web sites; international business communication*

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The Internet is a global medium by definition (Kobrin, 2001). It represents a communication network of interlinked computers operating on a standard protocol. There is no geographic limitation to Internet access and suppliers in any country can create Web sites containing information and dialogue content. The Internet allows industrial supplier companies from all countries to relate with customer companies from other, particularly distant country markets. The Internet has also been shown to enable companies to accelerate their internationalization process as compared with companies internationalizing mainly through traditional brick-and-mortar business, to the extent that some new businesses may be considered "born globals" (Loane, 2006). Web sites are attractive for business-to-business (B2B) companies as Internet-based business communication tools and tend to be increasingly standardized over time (Jones, 2007). The main purpose of this article is to investigate if communication styles (i.e., high-versus low-context communication) influence the content and/or the design of Web sites. The study is based on a content analysis of 597 B2B Web sites from 57 countries with a diversified sample in terms of company size and industry.

B2B Web site design and content may be assumed to be reflective of country of origin, language, and communication style. When companies have a definite home-country, with homogeneous employees in terms of nationality and culture, all of them speaking the same language that conveys cultural codes and particular communication patterns, Web site design and content are likely to be influenced by their communication style. This domestic country bias is related to ethnocentrism, defined as the natural tendency to view one's own group as the center of the universe (i.e., the sociological concept defined by Sumner, 1906, and expounded by Levine & Campbell, 1972). The approach of culture-centered Web site design and content relates to the tendency that people use their own frame of reference, and the local knowledge found in the in-group to make judgments about what is appropriate and what is not (i.e., the self-reference criterion in Lee, 1966), and to act. Web site design and content reflects a "domestic country bias" in favor of one's own country and the associated communication norms. This bias is empirically supported in the case of B2B Web sites advertising industrial goods, for which there is very little adaptation to foreign countries and out-group communication targets (Ess & Sudweeks, 2006).

About 30 studies have shown that communication styles matter on the Web (e.g., Baack & Singh, 2007; Burgmann, Kitchen, & Williams, 2006; Tian & Emery, 2002). Web site design characteristics affect customer evaluation

of online channel service quality and risk (Montoya-Weiss, Voss, & Grewal, 2003). Cultural characteristics may also affect the perceived value of Web sites (Steenkamp & Geyskens, 2006). The literature on culture and Web sites has investigated Web site design across cultures (Cyr, Bonanni, Bowes, & Ilsever, 2005), intercultural communication on Web sites (Würtz, 2006), consumer perception of Web sites pertaining to whether they are adapted or standardized (Singh, Fassott, Zhao, & Boughton, 2006; Singh, Furrer, & Ostinelli, 2004), preferences for certain Web site characteristics according to culture and communication style (Fink & Laupase, 2000; Simon, 2001; Tsikriktsis, 2002), cross-cultural Internet usage according to differences in perceived risk and innovativeness (Park & Jun, 2003), and cross-cultural adoption patterns for e-commerce (Pavlou & Chai, 2002; Singh, Fassott, Chao, & Hoffmann, 2006).<sup>1</sup>

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Some studies have taken the source perspective, that is, investigated how and to what extent Web site design and content reflect the particular communication style of those who develop Web sites especially as concerns high-context (HC) versus low-context (LC) communication (Burgmann et al., 2006; Cyr & Trevor-Smith, 2004; Dou, Nielsen, & Tan, 2002; Marcus & Gould, 2000; Singh & Matsuo, 2004; Singh, Zhao, & Hu, 2005; Suh, Taylor, & Lee, 2007; Zahir, Dobing, & Hunter, 2002). Web sites from LC communication countries tend to be more direct and based on more digital information than those from HC countries. Web sites from LC communication countries are arguably more transparent and are designed to guide visitors step-by-step. They also have more informative content than Web sites from countries with HC communication requiring more contextual interpretation and person-to-person interaction.

The present study shows that HC cultures are at a relative disadvantage against LC cultures in a world of global digital business communication. Quite often, it has been stressed that HC communication is more sophisticated and allows more complex information processing. As argued by Edward Hall (1976, p. 117), "Internal contexting makes it possible for human beings to perform the exceedingly important function of automatically correcting for distortions or omissions in messages." LC communication proceeds differently, by first reducing distortions and omissions in messages as much as possible, making messages linear, articulated, explicit, simplified, but easy to understand in the absence of additional contextual clues. LC communication provides the lowest common denominator for intercultural communication in a way that may not be always fully satisfactory, because it often looks "minimal." However, it provides a much better basis for and easier path to mutual understanding than having to learn contextual clues for each particular interaction with HC partners. This argument is even more salient when intercultural communication is based on corporate Web sites, that is, largely sender-prepared, digital, and unilateral.

However, before presenting the present project any further, we would like to point out that despite a widely shared acknowledgement of Hall's pioneering contribution to the field of intercultural communication (Rogers, Hart, & Miike, 2002), a number of critiques have been addressed to his HC-LC framework. First, it has been characterized as an all-encompassing framework that has been anecdotally derived (Dwyer, Mesak, & Hsu, 2005). Hall (1959, p. 186) himself proposed the broad-brush statement that "Culture is communication and communication is culture." As a consequence, Hall's framework may appear as a simplistic description of both culture and communication. As emphasized by Goldsmith (2001, p. 528): "the high/low context distinction . . . does not provide an account for normative judgments of how individuals respond to context-specific communicative dilemmas." A further critique of Hall is related to the implicit assumption that culture is univocally associated with national groups (Ess & Sudweeks, 2006; Goldsmith, 2001), at the risk of ignoring cultural differences within nation-states, especially those that display large ethnic and/or linguistic diversity (e.g., India). This limitation is all the more important as globalization has been intense over half a century (i.e., since the publication of Hall's *Silent Language*, in 1959), and within-country diversity has increased whereas cross-country diversity has diminished. Fortunately, our conceptual framework takes into account language diversity along with HC-LC communication styles.

It has also been said that Hall's conceptualization of culture tends to be operationalized as a dichotomous variable (Dwyer et al., 2005). However, we find that both Hall's work and further references that have operationalized the HC-LC concept are much more nuanced, enabling us to derive a country classification in five categories from LC to HC with low/medium, medium, and medium/high as intermediate categories. One reason for Hall's contribution to be somewhat caricatured may come from the title of one of his chapters in *Beyond Culture* (namely, "Contexts, High and Low"), which induced readers to believe that it is a purely dichotomous divide. It may also be that Edward Hall is too often referenced on the basis of secondary sources, without direct reading of the source texts.

Our own critique of Hall is his lack of explicit reference to language structure. Hall even rejects what he calls "the linguistic code" as unrelated to the HC-LC framework, as if "linguistic codes" were completely comparable and as if all languages required the same level of context for messages to be interpreted. Hall was also influenced by the view of linguistic relativity (i.e., the Sapir-Whorf hypothesis; see Carroll, 1956), however, without digging much into linguistic issues. The reason may be that Hall was also deeply influenced by psychoanalysis and emphasized the non-verbal, unconscious side of communication (Rogers et al., 2002), at the expense of the verbal side, which tends to be favored by linguistics.

Web sites can offer different language versions with similar content and design because of the relative easiness of replacing source-language text in Web pages by text translated in target languages. This research project also investigates the language versions of B2B Web sites and documents the dominance of English as the typically LC business language and therefore the *lingua franca* of international business (Charles, 2007; Louhiala-Salminen, Charles, & Kankaanranta, 2005).

The remainder of this article is organized as follows: the first section explores the challenge of digital intercultural business communication (DIBC). The second section explains why and how HC-LC communication styles are likely to influence B2B Web site design and content. The third section relates to Web site language versions and particularly English as the central LC business language and hypothesizes that Web site multilingualism is related to communication styles and home-country language(s). The fourth section examines alternative explanations for differences in B2B Web site design and content based on corporate demographics and industry variables, especially the degree of R&D intensity. The fifth section reviews the literature on B2B Web site design and content whereas the sixth section describes the empirical setting and explains how the data

were analyzed. The last section discusses key findings and outlines implications and limitations.

### The Challenge of Digital Intercultural Business Communication

Internet technologies are now ubiquitous. They represent a “new sea of communication” as argued by Jackson (2007). They enable asynchronous, non-face-to-face communication between faraway and often unknown interaction partners through digitalization. Every piece of information, including text and images can be reduced to a binary digital code (0, 1). Therefore, communication through Internet technologies, especially Web sites presents a challenge—that of digital business communication, which is rather low-context, that is, relies on written, rather explicit messages. It largely corresponds to Shannon and Weaver’s (1949) model, which has been criticized (e.g., Timm, 1986) for displaying major “fallacies” that, paradoxically, apply quite well in the context of corporate Web site communication: (a) communication focuses primarily on the skills of the sender in message preparation, (b) it largely ignores inferences that the receiver may draw, and (c) contrary to the continuous bidirectional nature of oral communication, corporate Web site communication is largely unilateral.<sup>2</sup>

Moreover, interaction partners in the communication channel may not share the cultural and linguistic background or the communication style. Corporate Web site messages may be coded in a rather LC communication style and subsequently decoded by HC communication receivers, or vice versa. Beyond the digital communication issues, this adds a further challenge in terms of *intercultural* business communication, especially in light of the channel-ratio model of intercultural communication (Haworth & Savage, 1989). As argued by Haworth and Savage: “The ratio of explicit to implicit information in the channel is culturally and contextually determined, and intercultural communication problems may be analyzed in terms of mismatches between the channel ratios of the participants” (p. 231). Their model emphasizes the importance of “knowledge” and the overlap in the phenomenal fields of the sender and receiver. Knowledge includes the body of facts, skills, and experiences the individual has acquired through cultural conditioning, as well as knowledge of the other party, which Hall (1976) considers critically important. Although their model was not designed for digital intercultural business communication, it can be quite well applied to corporate B2B Web sites as a communication channel. Haworth and Savage (1989) explain that each culture has a characteristic division

(CD) of the channel in terms of explicit (E) and implicit (I) information, a B2B Web site being such a channel. Thus, knowledge of the fact that specific information will not be made explicit by a participant from a low E/I culture (i.e., high context) requires that additional information has to be gathered outside the channel. This implies that B2B Web sites from HC cultures may implicitly rely on receivers to search for additional information (e.g., text information from other sources, company brochures, word-of-mouth, reference lists, etc.) to fully decode messages.

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Therefore, communication through Internet technologies, especially Web sites presents a challenge—that of digital business communication, which is rather low-context, that is, relies on written, rather explicit messages.

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It can be argued that Western linear communication models do not provide an accurate representation of the complexity of cross-cultural communication (Limaye & Victor, 1991). However, Western linear and LC communication styles tend to better fit with unilateral, digital communication in Web sites because they generally offer few context-bound features and display informative content and rather factual messages in a manner largely deemed as organized and accessible. Ulijn, O'Hair, Weggeman, Ledlow, and Hall (2000) investigate the impact of Internet communication technologies and the World Wide Web on interactions among national, corporate, and professional cultures. They especially question whether "cultures that prefer an implicit communication style easily accept to communicate over the Internet" (p. 305). The potential reluctance to use digital communication in HC communication cultures could be explained by more emphasis on oral communication whereas LC cultures are more at ease with written-only communication (Hall, 1976). As outlined by Limaye and Victor (1991): "Though technologies in business organizations are converging across cultures, meanings conveyed through them (that is, human communication styles) are not" (p. 288). There are, however, contrary arguments to the better fit that LC communication cultures would have with Internet Web site digital communication. Nishiguchi (1997)



explains the success of the Internet in Japan, a typically HC communication culture, by its ability to foster communitarianism and its expressive and active value when creating Web pages for the passive and conflict-avoidant Japanese. Furthermore, it may be that business companies, interacting on the Web through their Web sites, may progressively develop a discourse community with shared and accepted communication patterns that may override cultural differences among the people communicating (Louhiala-Salminen, 1997).

### Influence of High- and Low-Context Communication Styles on B2B Web Site Design and Content

Web sites are a major instrument for companies to communicate information and interact with customers on business markets. Language and communication have been shown to lead to differences in Web site design and content (Cho & Cheon, 2005). Differences in Web site communication features are related to HC-LC communication as described by Hall (1960, 1966, 1976). In HC communication, little is in the coded, explicit part of the message whereas most of the information is in the physical and social context. Conversely, in LC communication, most information is vested in the explicit code, which could be transformed into digits (e.g., yes/no corresponds to 1/0). LC communication cultures favor explicit, context-free messages, which can be more easily coded in the digital communication environment of Web sites than communication from HC cultures where messages are implicit and need contextual knowledge to be decoded by the receiver. Thought patterns in LC cultures are linear and emphasize rationality and logic, whereas HC cultures communicate in a nonlinear way with less emphasis on rationality (Kaplan, 1966). LC communication cultures are more information based, and employ direct, textual, factual, and analytical argumentation in business communication (Liao, Proctor, & Salvendy, 2008). Conversely, in Japan, which is considered a typical HC culture (Hall, 1976), additional information beyond a written format is preferred (Cyr & Trevor-Smith, 2004). LC communication countries use more hard sell communication with a lot of explicit information (Hermeking, 2005). Furthermore, Web sites from LC communication countries are more transparent, have more content, and have a design that is more consistent throughout the site's pages (Würtz, 2006). This is supported by empirical evidence. For instance, Suh et al. (2007) find Web sites from LC Australia to be more informative than those from HC Korea, this finding being supported by other research studies (Singh, Kumar, & Baack,



2005; Singh & Matsuo, 2004; Singh, Zhao, et al., 2005). Therefore, we expect corporate B2B Web sites from LC countries to have more information content.

HC communication tends to be more indirect, ambiguous, and understated than LC communication, which is direct and precise, and expresses feelings and intentions rather openly (Gudykunst et al., 1996). Hermeking (2005) shows that Web site communication in HC cultures uses “soft sell” appeals (indirect approaches creating emotions and atmosphere by visuals and symbols) in contrast to the “hard sell” appeals highlighting product features with explicit information, which prevail in LC cultures. South Korea uses much more (HC type) multimedia presentation (text, sound, and/or video) than the United States and the United Kingdom, where presentation is more often based on (LC type) text only. Furthermore, as emphasized by Samiee (1998), “. . . high-context cultures revolve around personal contacts and, as the Internet is a relatively impersonal medium, attempts to automate processes and transactions are not likely to be well received” (p. 423). Rosenbloom and Larsen (2003) examine the relationship between culture and channel communication in B2B marketing channels by comparing fax, phone, e-mail, and written communication between partners from HC and LC countries. They find that e-mail communication is more common within low culture distance countries/channel partners than between channel partners with high cultural distance and that phone communication, on the other hand, is much more frequently used by partners with high cultural distance than by partners with low cultural distance. Web sites from countries with LC communication use more interactive functions than Web sites from HC communication countries (Cho & Cheon, 2005; Cyr & Trevor-Smith, 2004). Overall, empirical evidence is highly supportive of the influence of HC and LC communication styles on Web site design and content (see Table 1, which presents empirical findings from research studies).

As emphasized by Hall (1976, p. 103), in LC communication, “most of the information must be in the transmitted message to make up for what is missing in the context.” LC communication therefore tends to increase clarity, directness, explicit messages, and univocal content that does not require interpretation. We hypothesize that Web sites from LC communication countries will be easier to find on the Web (e.g., through a search engine), use colors and graphics more effectively, make navigation more user-friendly (e.g., Web sites being more readable, structured, and updated), and provide more corporate information (e.g., information about the company, financial status, references) as well as product information (e.g.,

**Table 1. Empirical Findings on the Influence of HC/LC Communication Style on WS Design and Content**

<i>Study</i>	<i>Findings</i>
Fink and Laupase (2000)	WS design characteristics reflecting explicit communications (products and services) were perceived higher by LC Australians than by HC Malaysians and context (news stories) was perceived higher by HC Malaysians than by LC Australians
Rosenbloom and Larsen (2003)	When U.S. exporters from a LC culture deal with foreign distributors from HC cultures, "old fashioned" fax and telephone communication takes place much more frequently than when U.S. exporters deal with foreign distributors from LC cultures
Singh, Zhao, et al. (2003)	WS from China (HC) are high on WS HC dimensions (e.g., soft sell approach, aesthetics), whereas WS from the United States (LC) are higher on WS LC dimensions (e.g., hard sell approach, terms of purchase)
Cyr and Trevor-Smith (2003)	Different preferences for navigation and search capabilities and links in U.S., German, and Japanese WS can be explained by HC/LC communication styles
Singh and Matsuo (2004)	WS from Japan (HC) are high on WS HC dimensions (e.g., soft sell approach, aesthetics), whereas WS from the US (LC) are higher on WS LC dimensions (e.g., hard sell approach, terms of purchase)
Cho and Cheon (2005)	WS from Eastern countries (HC) employ less consumer-message and consumer-marketer interactivity. It can be explained by implicit elements in communication messages of HC cultures
Hermeking (2005)	"Soft sell" appeals (indirect approaches) in HC communication cultures versus "hard sell" appeals (direct approaches highlighting product features with explicit information and competitive persuasion) in LC cultures
Singh, Kumar, et al. (2005)	WS from France (medium HC) are high on WS HC dimensions (e.g., soft sell approach, aesthetics), whereas WS from the United States and Germany (LC) are higher on WS LC dimensions (e.g., hard sell approach, company prestige)
Singh, Zhao, et al. (2005)	WS from Japan and China (HC) are high on WS HC dimensions (e.g., soft sell approach, aesthetics), whereas WS from the United States and India (LC) are higher on WS LC dimensions (e.g., hard sell approach, terms of purchase)
Singh, Fassott, Zhao, et al. (2006)	Empirical support from Germany, China, and India that HC/LC cultural adaptation leads to better perception of WS effectiveness
Würtz (2006)	WS of LC culture can be described as very transparent sites (consistent structure). Most HC sites, in contrast, depend on links and information described by a limited amount of text, and sometimes with an illustration. This gives a less transparent overview of the content in the HC as compared with LC WS

*(continued)*

**Table 1. (continued)**

<i>Study</i>	<i>Findings</i>
Suh et al. (2007)	Korean WS contain more dynamic elements than Australian WS. It can be explained by HC/LC communication styles
Sinkovics, Yamin, and Hossinger (2007)	WS from the United States, the United Kingdom, and Germany (LC) are higher on WS LC dimensions (e.g., hard sell approach, terms of purchase) than Latin American WS (HC), but no difference found for HC dimensions
Liao et al. (2008)	People from LC communication cultures think that rational appeals for the products and services are important, and tend to employ direct, textual, factual, and analytical argumentation in advertising and marketing
Nantel and Glaser (2008)	WS designers from Finland (LC culture) developed country-specific WS and adapted the design and the information content of WS for the Japanese (HC culture) according to Hall's findings

*Note:* HC = high context; LC = low context; WS = Web site.

specifications, performance, photos) than Web sites from HC communication countries.

*Hypothesis 1:* Web sites from companies in LC communication countries score higher on (a) information accessibility, (b) attractiveness of navigation interface, (c) contain more corporate information, and (d) more product information cues than Web sites from companies in HC communication countries.

HC communication requires more context-related cues, some of which are related to the business partner (e.g., gender, age, in-group, etc.), leading to more personalized business communication. Digital Internet communication is not a substitute of face-to-face communication for HC communicators who need more direct, face-to-face socialization to create personal acquaintance. Therefore, we hypothesize that Web sites from companies originating in LC communication countries will provide more transaction cues (i.e., contract-related content, such as product prices or stock availability) and more online relationship-related content (i.e., possibility to register, buy online, and have access to customized information) than those of HC communication countries.

*Hypothesis 2:* Web sites from companies in LC communication countries score higher on transaction cues and online relationship than Web sites from companies in HC communication countries.

## B2B Web Site Languages: The Role of Language in DIBC

English is the language of international business. However, it is often a second language as most speakers are nonnative. For 380 million people in the “inner circle” of countries, English is a “primary” or native language, and there are 1,300 million in the “outer circle” of countries in nonnative settings (Ammon, 2000). Despite the sometimes deceitful impression that English will increasingly be used everywhere for all occasions, people still speak widely different languages in everyday interactions in most of the world, with less than one million speakers on average for the 6,800 languages spoken in the world (Ardila, 2007).

Babcock and Du-Babcock (2001) when presenting their “Model of Language-Based Communication Zones in International Business Communication” argue that “previous research has operated on the assumption that all participants within an international business communication setting function as fully proficient users of all languages being spoken, with no accounting for communication difficulties based on varying levels of language proficiency” (p. 372). In this section, we investigate the relationship of HC-LC communication styles to the English language, that is, to what extent the use of multilingual B2B Web sites, operationalized by the number of language versions for particular Web sites, is related first to HC-LC communication styles and second to English being the native language of the home country of a B2B supplier.

*Languages and HC/LC communication styles.* Hall’s theory of LC-HC communication cultures is based on his background as a cultural anthropologist, on his field studies of Indian cultures, and his pioneering work with U.S. diplomatic services. It is related to other cultural patterns relating to time (monochronism-polychronism), relationships, and interpersonal distance, which are beyond the scope of this article. Hall seems not to view language as strongly related to HC-LC communication styles when he states in *Beyond Culture* (1976) that “The problem lies not in the linguistic code, but in the context, which carries varying proportions of the meaning. Without context, the code is incomplete since it encompasses only part of the message” (p. 86). However, later in the same chapter about “Context and Meaning” (chap. 6), he speaks about the linearity of language (with the English language implicitly in mind) and gives many examples related to the U.S. decontextualized legal system (e.g., in U.S. courts: “Answer the question, Yes or No” [p. 107]. On the other hand,

Hall gives HC examples based on the Chinese language and writing system as an art form as well as on the way French courts tend to contextualize trials, French culture being a HC-LC *mélange* (Hall's terminology). However, being a cultural anthropologist, not a linguist, he seems to overlook how deeply language structure is related to the HC-LC divide. Many Asian languages use no gender, little or no personal pronouns, do not conjugate verbs and provide locutors with a relatively undersignified text, which requires much information from the context for the message to be understood by the receiver.<sup>3</sup> Similarly, a semi-HC language such as French avoids repetitions of the same word for the sake of elegance and therefore uses synonyms or pronouns at the direct expense of preciseness and clarity. Meaning is supposed to be understood from context. French people communicating in English must forget the sacred rule they have learnt not to repeat words, especially in writing. The—supposed—synonyms are misunderstood by English speakers (readers) who do not understand why different words-concepts are used. In very HC languages such as Japanese and Chinese, gender and number as well as person are often understood from the context. The subject, especially if "I," will often be omitted in Japanese, whereas in Chinese verbal forms will not change with time, gender, and person. Conversely, LC languages are often overcoded to make messages even more explicit. When a German locutor says "*Ich mache,*" the first person singular is both in the personal pronoun *Ich* (*I*) and in the ending (*e*) of the verb, which applies only to the first person singular in the present and active tense. In the view of the authors, HC-LC communication styles are partly related to language structure. Indo-European languages on average favor low- to medium-context communication, whereas many Far East languages such as Chinese, Japanese, Thai, or Vietnamese favor HC communication.

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Despite the sometimes deceitful impression that English will increasingly be used everywhere for all occasions, people still speak widely different languages in everyday interactions in most of the world, with less than one million speakers on average for the 6,800 languages spoken in the world.

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Communication in LC languages, especially English, is more universal because it requires less contextual cues to be understood. Context as defined by Hall is essentially qualitative and related to five sets of disparate categories of events: subject or activity, situation, status, past experience, and culture (Hall, 1976, p. 87). In HC communication, the challenge is not only that there is more context but also that the context is specific to particular cultures and languages. As a consequence, it may be more difficult to communicate across different HC language-cultures<sup>4</sup> than for an HC person to communicate with people from LC language-cultures.

HC communicators need *their* native language because it tends to be strongly associated with particular contextual cues, familiar to them. However, these contextual cues are unfamiliar to communicators from other HC cultures. HC communicators may feel uneasy communicating with other HC business people (i.e., also HC communicators, however not within *the same* context) whereas they may paradoxically feel more comfortable interacting with LC communicators. For HC business communicators, it may be easier to adapt to LC communication style rather than to multiple and divergent HC styles. Conversely, LC communicators often tend to assume that language is relatively neutral and instrumental (Sussman & Johnson, 1993). Because LC communicators are used to relatively precise and explicit messages, they tend to perceive translation and interpretation as a matter of technique for which dictionaries provide good lexical equivalence. LC communicators tend to assume that language professionals, both interpreters and translators, can do a fair job at reconstructing understandable target texts in a large number of foreign languages. We assume, therefore, that HC communication will lead on average to choose one's own home-country language plus English, thus limiting language versions to two. Conversely, LC communication is favorable to developing more language versions for the *same* B2B Web site. We hypothesize that LC (HC) communication results in more (less) Web site language versions.

*Hypothesis 3:* Web sites from companies in LC communication countries have more Web site language versions on average than Web sites from companies in HC communication countries.

*English as the typical LC language for international business.* Because of the dominance of English (a typically LC language) as the *lingua franca* of International Business (Charles, 2007; Louhiala-Salminen et al., 2005), language versions for industrial supplier Web sites may be limited to English only. Among other LC language-cultures (German, Dutch, Finnish,

and Scandinavian languages), English has a special status because of its widespread use as a second language especially in business settings. Therefore, B2B Web sites from countries where English is the native language are likely to be less concerned with the need to develop multilingual Web sites than B2B Web sites from non-English-speaking LC countries as well as HC countries. In fact, most U.S. managers speak only English, whereas Japanese or European managers are often bilingual and sometimes multilingual (Sussman & Johnson, 1993; Ardila, 2007). Sussman and Johnson present empirical data that highlight the linguistic provincialism of the largest English speaking country in the world. For instance, in a study of 1,500 senior executives conducted by Korn-Ferry International, only 19% of U.S. executives emphasized the importance of foreign language training compared with 64% of foreign executives. Foreign language enrollment in U.S. higher education has decreased from 16.1% in 1960 to 8.6% of total enrollments in 2002 (Welles, 2004). B2B companies from English-speaking countries tend to assume that everybody in business understands English as the legitimate *lingua franca*. Therefore, they tend not to invest in different Web site language versions. We hypothesize, therefore, that there are fewer language versions in Web sites from English-speaking countries.

*Hypothesis 4:* Web sites from companies in English-speaking countries have fewer Web site language versions on average than Web sites from companies in non-English-speaking countries.

#### Alternative Explanations for Differences in B2B Web Site Design and Content: Firm Demographics and Industry-Related Variables

Factors other than country and cultural variables are alternative explanations for diverging B2B Web site design and content, mainly corporate demographics and industry-related variables. Such factors have been shown to bear an influence on business communications (Uljin et al., 2000; Varner, 2000). They are likely to account for differences in B2B Web site design, especially demographic factors related to company size (e.g., number of employees, sales figures). Company size is considered a factor by Varner (2000) in her conceptual model of intercultural business communication. Larger companies have more means than smaller ones to invest in the visual interface of B2B Web sites. Being larger, more established, and therefore more self-confident, they are also more prone to disclose



corporate information. However, it can be argued that they are less inclined to do online business than smaller companies who need to close deals as efficiently as possible, given their limited reach in terms of distribution outlets (Quelch & Klein, 1996).

To control for corporate demographics, we examine the impact of company size (i.e., number of employees). More language versions could be available for larger companies with more resources and international operations. B2B companies producing equipment may have more language versions because of the need to interact with customers to tailor offers more than B2B companies that turn out standardized industrial commodities.

The degree of R&D intensity is likely to have an influence on international business communication and consequently on the design and content of B2B Web sites (Ulijn et al., 2000). High-tech industries may be expected to be more sophisticated in Web site design and more prone to provide contract- and relationship-related content rather than informative content only. In line with Hanson's (2000) classification of the degree of Web site sophistication into "simple publishing," "interactive," and "personalized" (i.e., Web pages customized to unique needs), we expect high-tech industries to develop more interactive and personalized Web sites. Finally, we also include GDP per capita as a control variable because differences in levels of economic development across countries might account for some of the variance in B2B Web site design and content.

## B2B Web Site Design and Content

B2B Web sites are marketing tools allowing companies to communicate with their potential and current clients in two ways. On the one hand, Web sites can help companies provide clients with information regarding the company and its products. On the other hand, Web sites can facilitate transactions with clients and possibly reduce transaction costs.

To provide clients with information, companies first have to be easily identifiable on the Web. Search engines like Google, databases, and online business directories such as Alibaba.com make it easier for customers to find potential suppliers (Wilson & Abel, 2002). Access to corporate Web sites is often based on URLs using the "companyname.com" syntax (Lord & Collins, 2002). After having attracted potential buyers to their Web sites, companies need to be able to communicate with them. As e-commerce language is assumed to be English (Jones, 2007; van der Merwe & Bekker, 2003), it is essential for internationally operating B2B suppliers to have at least an English version of their Web site. However, adding other language

versions may be an important competitive advantage when targeting non-English-speaking foreign markets (Wilson & Abel, 2002). Web sites also need to be designed in a way that is visually attractive for visitors. The graphical quality and visual appearance of pages is paramount to making user perception as positive as possible. Interface, appropriate and coherent use of colors and texts, entertainment, and multimedia features all influence user appreciation of Web sites (Chakraborty, Lala, & Warren, 2003; van der Merwe & Bekker, 2003). Well-designed and efficient search engines help customers quickly find what they are looking for (van der Merwe & Bekker, 2003). Web sites have to run correctly, quickly, with no broken links, no blank pages with "under construction" status, and no trouble for reaching pages after clicking on links. Furthermore, to enhance the perceived usefulness of site content and technical features, Web sites have to be well organized and easy to navigate (Chakraborty et al., 2003).

As a rule, Web sites always contain information about the company. They can be used to describe organizations, their positioning vis-à-vis target audiences, as well as their financial status and their contributions to the community or to environmental development (Lord & Collins, 2002). Technical and industrial standards followed by companies as well as quality labels and certifications obtained from official certification bodies can be displayed. Companies may also list references of successfully managed past projects and the names of corporate customers previously served, to reduce buyer transaction uncertainty (Håkansson, Johanson, & Wootz, 1976). Web sites can also contain information about the company's products. Listing and accurately describing products offered is a key element of content on most Web sites. Lord and Collins (2002) found that product presentation is the most important criterion for buyer purchasing decision and that 91.3% of the suppliers they surveyed included product presentation on their Web site. Nevertheless, simple product presentation may not suffice to convince buyers. Industrial buyers can encounter difficulties assessing their precise needs in terms of products, technologies, and/or services when they are uncertain about which solutions are technically and/or economically adequate for them (i.e., what Håkansson et al., 1976, call "customer need uncertainty"). To reduce need uncertainty, companies may provide downloadable databases containing information on product specifications and use (Berthon, Ewing, Pitt, & Naude, 2003). B2B Web sites may also present product quality assessment through scientific tests and certification (Lord & Collins, 2002), or information that customers consider valuable input from suppliers to make the right purchasing decisions (Chakraborty et al., 2003).

Web sites may also help companies to initiate and later on manage transactions with clients. The first step toward transaction is for suppliers to provide prices on their Web sites. Failing to provide a price could lead buyers to defaulting to competitors as this is the second most important criterion for customers (Lord & Collins, 2002). Moreover, Internet development has made customers more savvy and more oriented to and capable of bargaining (Wilson & Abel, 2002), which highlights the importance of presenting price lists, and possibly volume- and/or loyalty-related rebates. In addition, several choice assistance devices, such as "Tip of the Week," online guides, Web bots, and intelligent agents can be added to Web sites to facilitate comparative searching and make buyer choice easier (Berthon et al., 2003). Rapid technological improvements in Internet and information technologies enable sellers to provide detailed information about stock availabilities and delivery delays for each product (van der Merwe & Bekker, 2003).

Company Web sites may be tools for managing customer relationships by using e-mail to communicate with customers (Deeter-Schmelz & Norman Kennedy, 2004) or by creating virtual private networks to exchange information and/or goods (Wilson & Abel, 2002). As a whole, real-time and interactive communication helps firms retain customers while being competitor focused, as well as respond quickly to changes in the marketplace (Tse & Chan, 2005). Moreover, it has been shown that the more interactive a Web site is the more visitors appreciate it (Ghose & Dou, 1998). Companies may extend Web site functionality by providing online purchasing features. The online buying option facilitates and accelerates purchasing processes and buyers may perceive less uncertainty concerning the order-handling process.

Maintaining and enhancing newly established relationships are core activities for suppliers to consolidate their customer base (Parvatiyar & Sheth, 2000). To develop relationships, customization can help suppliers obtain further information about their customers and adjust offerings accordingly. As a result, companies are better able to raise customer satisfaction and hence performance (Tse & Chan, 2005).

Transactions and payments need to be secured. As many buyers are still uncomfortable with purchasing on the Web (Wilson & Abel, 2002), protection of customer privacy or corporate identity (van der Merwe & Bekker, 2003), credit and payment possibilities (Barratt & Rosdahl, 2002), and storage and transmission of transaction-related information are crucial issues (Chakraborty et al., 2003). Moreover, Web sites may be powerful tools for companies to reassure customers about their delivery capabilities (van der

Merwe & Bekker, 2003). The ability to effectively manage delivery-related information is a privileged avenue for developing collaborative relationships with customers (Fiocca, 1982).

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As a whole, real-time and interactive communication helps firms retain customers while being competitor focused, as well as respond quickly to changes in the marketplace

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## **EMPIRICAL SETTING**

### Content Analysis of Web Site Design and Content Features

To investigate the research hypotheses, we use a content analytic approach (Weber, 1990) by developing a research instrument that describes Web site information content, graphic design, and interactive features. Content analysis is a widely used data collection technique in the field of business communication (e.g., Adkins, Thornton, & Blake, in press; Deumes, 2008)<sup>5</sup> and in the e-commerce literature (e.g., Baack & Singh, 2007; Burgmann et al., 2006; Cho & Cheon, 2005).

The coding instrument is based on the corporate Web site literature, with a special focus on B2B companies (see section B2B Web site design and content above). It is presented in Table 2. Web site design and content are subdivided into coding categories classified into two dimensions: *information* and *transaction*. On the one hand, information categories are related to the design of the Web site (e.g., Web site interface, presence of a search engine) or informative content that is not related to any contract and unilaterally emitted by the supplier (e.g. corporate information, references). On the other hand, transaction categories are contract-related content emitted by the supplier (e.g., providing product prices, stock availability) or related to interactive digital relationship between the supplier and the customer (e.g., possibility to buy online, register online and have access to customized information). The coding categories each include individual coding criteria derived from the sources mentioned in Table 2. The table also shows how individual coding criteria are rated and presents the level

**Table 2. Operationalization of Coding Categories for Web Site Design and Content**

<i>Coding Category</i>	<i>Operationalization (Coding Category Criteria)</i>	<i>Source</i>
Information accessibility	Ease of access to Web site with search engine Access to company site with "companyname.com"	5-point*** Yes/no*** Lord and Collins (2002), Wilson and Abel (2002)
Web site interface	Language • Web site is exciting • Web site is entertaining • Web site looks appealing	7-point*** 7-point* 7-point* 7-point*** van der Merwe and Bekker (2003), Wilson and Abel (2002) van der Merwe and Bekker (2003), Chakraborty et al. (2003)
Web site navigation	Search engine Presence and efficacy of Web site search engine Web site works well	5-point*** 5-point* van der Merwe and Bekker (2003) van der Merwe and Bekker (2003)
	Web site update Quality and recency of Web site update	5-point* van der Merwe and Bekker (2003)
	Web site structure • Web site pages are consistent • Web site is easily readable • Guiding visitors step-by-step in Web site	5-point*** 7-point*** Yes/no** van der Merwe and Bekker (2003), Chakraborty et al. (2003)
Company information	Company information Supplier financial status	Berthon et al. (2003) Lord and Collins (2002), Berthon et al. (2003) Lord and Collins (2002)

*(continued)*

**Table 2. (continued)**

<i>Coding Category</i>	<i>Operationalization (Coding Category Criteria)</i>	<i>Source</i>
Standards and certification	Number of ISO standards for which supplier is certified	Håkansson et al. (1976)
References	Information about relevant/exemplary deals	Håkansson et al. (1976)
Community activities	Information pages about supplier's corporate social responsibility actions	Lord and Collins (2002)
Job opportunities	Details about job opportunities offered by supplier	Lord and Collins (2002)
Newsletter	Newsletter registration available	Lord and Collins (2002)
Distribution	Information about distributors and their location	Lord and Collins (2002)
Product cues	Number/organization of links to other Web sites for information or comparison purposes	Lord and Collins (2002)
Product information	Amount and accuracy of product information	Lord and Collins (2002), van der Merwe and Bekker (2003), Berthon et al. (2003), Chakraborty et al. (2003)
Transaction cues	Degree of price information available online	Lord and Collins (2002), Wilson and Abel (2002)
	• Tips for product use	Berthon et al. (2003)
	• Tips about product end-uses and applications	Yes/no *** Yes/no ***
	• Software for assessing customer needs and guiding choice	Yes/no ***

(continued)

**Table 2. (continued)**

<i>Coding Category</i>	<i>Operationalization (Coding Category Criteria)</i>		<i>Source</i>
Stock and availability	Level of information about stocks and product availability	5-point*	van der Merwe and Bekker (2003), Puschmann and Alt (2005)
Guarantee	Product quality guaranteed?	Yes/no***	van der Merwe and Bekker (2003)
Online relationship	Possibility to have online interaction/ relationship with supplier	5-point***	Deeter-Schmelz and Norman Kennedy (2004), Wilson and Abel (2002)
Online buying	Possibilities offered to order and pay online	5-point***	Lord and Collins (2002), van der Merwe and Bekker (2003)
Customization	Possibilities offered to register online and have access to customized information after login	5-point***	Wilson and Abel (2002), Deeter-Schmelz and Norman Kennedy (2004), van der Merwe and Bekker (2003), Tse and Chan (2004), Chakraborty et al. (2003)
Secure transaction	Degree of customer privacy and security when performing transactions online	5-point***	van der Merwe and Bekker (2003), Barratt and Rosdahl (2002), Chakraborty et al. (2003), Wilson and Abel (2002)
Logistics	Logistics services offered by supplier	5-point***	van der Merwe and Bekker (2003)

Intercoder reliability (IR): \*.85 < IR < .90. \*\*.90 < IR < .95. \*\*\*IR > .95.



of intercoder reliability (IR). Coders were 50 business students at a Western European university. Each Web site was independently coded by two coders. IR is assessed by using a per-criterion-agreement method (Kassarjian, 1977), and is greater than .95 for 75% of the coding categories with no category less than .85.

### Web Site Sample

The base population is based on English-version Web sites from industrial suppliers worldwide. To be consistent in terms of home country and culture, we selected B2B companies that have only one Web site (i.e., a single Web site design reflecting their home country and culture, possibly with different language versions), therefore eliminating multinational companies with many different country or divisional Web sites. Thus, all Web sites were coded based on their English version. Coders were instructed to select only Web sites that had an English version. Other languages were only checked to inform the coding category related to language versions. The B2B Web site sample cannot be probabilistic because we have no knowledge of the base population. Our project was to generate country and industry representativeness by using large online B2B directories, diversified both in terms of national/cultural origin and industry types. The companies were selected from two online business directories: [www.alibaba.com](http://www.alibaba.com) for the first half of the sample and [www.europages.com](http://www.europages.com) for the second half. In all, 20 different product categories with large numbers of suppliers were selected. To randomly select the sample, 1 out of every 5 or 10 companies in the directory was selected, depending on category size. The usable sample contains 597 B2B Web sites from 57 countries. This sample includes firms from China (14.7%), India (8.2%), the United States (5.7%), the United Kingdom (8.9%), France (9%), Italy (11.2%), and Germany (6.7%). Companies are mostly small- and medium-size enterprises; 54.1% of the firms have fewer than 50 employees and 4.5% more than 1,000. Moreover, 14.9% of the companies have sales less than \$1 million, and 9.2% more than \$50 million. A detailed sample composition is provided in Table 3.

### Operationalization of HC/LC Communication Styles and Corporate Demographics

The HC-LC context construct has been operationalized by a classification of the 57 countries in 5 categories in terms of level of context in

**Table 3. Corporate B2B WS Sample Demographics**

<i>Region</i>	<i>Country of Origin</i>	<i>Number of WS</i>	<i>Percentage</i>	<i>Region</i>	<i>Country of Origin</i>	<i>Number of WS</i>	<i>Percentage</i>
Asia	China	88	14.72	Europe	U.K.	53	8.86
	India	49	8.19		France	54	9.03
	Taiwan	16	2.68		Spain	18	3.01
	Japan	2	0.33		Italy	67	11.20
	Malaysia	14	2.34		Germany	40	6.69
	Thailand	7	1.17		Turkey	17	2.84
	Hong Kong	1	0.17		Czech Republic	8	1.34
	Korea	9	1.51		Scandinavia	15	2.51
	Other Asia	23	3.85		Belgium	12	2.01
	U.S.A.	34	5.69		Other Europe	38	6.35
North America	Canada	6	1.00	Rest of the World	27	4.52	
<i>Number of Employees</i>	<i>Number of WS</i>	<i>Percentage</i>					
<5	22	3.75					
5-10	87	14.85					
11-50	208	35.49					
51-100	93	15.87					
101-500	123	20.99					
501-1,000	27	4.61					
>1,000	26	4.44					

(continued)

**Table 3. (continued)**

<i>Product (Equipment)</i>	<i>Number of WS</i>	<i>Percentage</i>	<i>Product (Commodities)</i>	<i>Number of WS</i>	<i>Percentage</i>
Fire fighting	50	8.33	Coating	50	8.33
Industrial lighting	50	8.33	Plastic pipes	40	6.67
Printing machinery	40	6.67	Agricultural fertilizers	40	6.67
Paper machinery	40	6.67	Ink, solvent and pigment	28	4.67
TV and radio broadcasting	40	6.67	Computer keyboards	20	3.33
Intercoms	31	5.17	Iron bars	20	3.33
Diamond cutting tools	30	5.00	Bicycle parts	20	3.33
Auto heating and air conditioning	22	3.67	Integrated circuits	20	3.33
Elevators and lifts	20	3.33	Shock absorbers	19	3.17
Sensors and temperature-sensing device	10	1.67			
Storage carts and trolleys	10	1.67			

*Note:* B2B = business-to-business; WS = Web sites.

communication (low, low-medium, medium, medium-high, high). It is based on Edward Hall's works (1960, 1966, 1976) as well as the following references, which classify countries in terms of HC versus LC communication: Adair and Brett (2005), Aydin and McIsaac (2004), Cateora (1983), Chaisrakeao and Speece (2004), Dozier, Husted, and McMahon (1998), Kim, Pan, and Park (1998), Nevgi, Tella, and Nishimura (2008), Salleh (2005), and Würtz (2006). The classification was discussed between the authors and validated with colleagues specialized in international/cross-cultural research in management. Table 4 presents the classification of the 57 countries as regards HC versus LC communication as well as the number of Web sites analyzed per country, whether English is an official language in that country (1) or not (0), the number of official, nationwide business languages (*de jure* or *de facto*), and the average number of language versions for that country's Web sites.

## DATA ANALYSIS AND FINDINGS

Hypotheses 1 and 2 stated that company Web sites in LC communication countries would score higher than those in HC communication countries on the information and the transaction dimensions, respectively. We, therefore, examined correlation between (a) company scores on the different Web site design and content dimensions presented in Table 2 and (b) their scores on the HC/LC communication scale according to their country of origin (see Table 4). Results provide support for both hypotheses: companies originating from countries lower on the HC/LC communication scale score higher on the information and transaction dimensions of Web site design and content. Conversely, Web sites from HC countries are less accessible through a search engine,  $r(597) = -.238, p < .01$ ; are less easy to read,  $r(597) = -.166, p < .01$ ; provide less information about their financial situation,  $r(597) = -.099, p < .05$ , their products,  $r(597) = -.098, p < .05$ , and their prices,  $r(597) = -.108, p < .01$ ; and offer less interactive opportunities,  $r(597) = -.167, p < .01$ . Detailed findings are presented in Table 5.

We tested Hypotheses 3 and 4 through regression analysis, with the number of language versions for each Web site as the dependent variable. The independent variables were first, whether the Web site was from an English-speaking country (dummy variable: 1 for English-speaking countries, 0 for non-English-speaking countries), and second, the HC/LC score of the Web site's country of origin. Company size, industry (equipment vs. commodities), R&D intensity, and GDP per capita were added as control

**Table 4. Classification of Countries According to Levels of Low- Versus High-Context Communication Style**

Country	Low-Medium						Medium-High						High											
	Low		Medium		High		Medium		High		Low		Medium		High									
	WS	EN	LG	LV	Country	WS	EN	LG	LV	Country	WS	EN	LG	LV	Country	WS	EN	LG	LV					
Denmark	3	0	1	3.0	Australia	9	1	1	1.0	Croatia	1	0	1	2.0	Algeria	1	0	2	1.0	China	88	0	1	2.0
Finland	5	0	2	1.6	Austria	1	0	1	3.0	Cyprus	1	0	2	1.0	Bolivia	1	0	1	1.0	Hong Kong	1	1	2	2.0
Germany	40	0	1	2.6	Belgium	12	0	3	2.1	Czech Republic	8	0	1	3.0	Brazil	1	0	1	3.0	India	49	1	2	1.4
Luxembourg	2	0	2	4.0	Canada	6	1	2	1.7	Estonia	2	0	1	1.5	Egypt	2	0	1	1.0	Indonesia	2	0	1	1.0
Netherlands	1	0	1	2.0	Israel	2	0	2	1.5	France	54	0	1	1.7	Morocco	1	0	1	3.0	Iran	2	0	1	1.0
Norway	2	0	1	1.5	U.S.A.	34	1	1	1.3	Greece	2	0	1	2.0	Peru	1	0	1	2.0	Japan	2	0	1	1.0
Sweden	6	0	1	2.4						Italy	66	0	1	2.5	Russia	1	0	1	2.0	Kuwait	1	0	1	2.0
Switzerland	4	0	3	2.8						Lithuania	2	0	1	3.5	Saudi Arabia	2	0	1	1.5	Lebanon	2	0	2	1.0
										Poland	13	0	1	3.5	Turkey	16	0	1	2.3	Macau	1	0	2	1.0
										Romania	3	0	1	1.7						Malaysia	14	0	2	1.2
										Slovenia	6	0	1	2.2						Nigeria	1	0	1	1.0
										South Africa	4	1	2	1.0						Pakistan	7	0	2	1.3
										Spain	18	0	1	2.6						Philippines	1	0	2	1.0
										U.K.	54	1	1	1.2						Singapore	3	1	2	1.0
																				South Korea	9	0	1	2.3
																				Syria	1	0	1	1.0
																				Taiwan	15	0	1	1.5
																				Thailand	8	0	1	1.3
																				United Arab Emirates	1	0	1	1.0
																				Vietnam	2	0	1	1.5

Note: WS = number of Web sites analyzed per country; EN = whether English is an official language in this country (1) or not (0); LG = number of official nationwide business languages ([http://en.wikipedia.org/wiki/List\\_of\\_official\\_languages\\_by\\_state](http://en.wikipedia.org/wiki/List_of_official_languages_by_state)); LV = average number of language versions for country Web sites.

**Table 5. Correlation Between Web Site Design and Content Categories and High-Context Communication**

	<i>Coding Category</i>	<i>Correlation With High-Context Communication</i>		
Website design	Information	Access with search engine	-.238***	
	accessibility	Companyname.com	-.077*	
		Language	-.151***	
		Web site interface	Web site is exciting	-.112***
	Web site navigation		Web site is entertaining	-.096**
			Web site looks appealing	Nonsignificant
			Search engine	Nonsignificant
			Web site works well	-.275***
			Web site update	-.168***
			Web site pages are consistent	Nonsignificant
			Web site is easily readable	-.166***
	Company information		Guiding visitors step-by-step	-.084**
			Company information	Nonsignificant
			Supplier financial status	-.099**
		Standards and certification	Nonsignificant	
		References	-.152***	
		Community activities	-.145***	
		Job opportunities	-.169***	
		Newsletter	-.167***	
		Distribution	-.178***	
Web site content		Product cues	Links	-.088**
	Product information		-.098**	
	Transaction cues	Price availability	-.108***	
		Tips for product use	-.094**	
		Tips about product end-uses	-.122***	
		Product software	-.120***	
		Stock and availability	-.095**	
		Guarantee	-.144***	
	Online relationship	Interaction/relation	-.167***	
		Online buying	Nonsignificant	
		Customization	-.104**	
		Secure transaction	-.075*	
		Logistics	-.159***	

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

variables. The regression equation is significant and explains 15.2% of the variance for the endogenous variable,  $R^2 = .152$ ,  $F(6, 584) = 18.59$ ,  $p < .0001$ . Other factors may explain the number of language versions of B2B Web sites. In line with Hypothesis 3, Web sites from companies in LC communication countries have more Web site language versions than

Web sites from companies in HC communication countries,  $B = -.270$ ,  $t(584) = -4.335$ ,  $p < .0001$  (i.e., the regression coefficient indicates fewer language versions for HC country Web sites). Hypothesis 4 is also supported because Web sites from companies in English-speaking countries have fewer Web site language versions than Web sites from companies in non-English-speaking countries,  $B = -.268$ ,  $t(584) = -6.790$ ,  $p < .0001$ . In line with our expectations, empirical findings show that the number of language versions for a B2B Web site significantly decreases with HC communication and with English being the home-country language. Among the control variables, only company size has an influence,  $B = .159$ ,  $t(584) = 3.956$ ,  $p < .0001$ . Other control variables, that is, industry (equipment vs. commodities), R&D intensity, and GDP per capita are not related to the number of B2B Web site language versions.

## DISCUSSION

The present study contributes to international business communication by offering a comprehensive view of how language and communication influence Web site design and content across 597 B2B Web sites from 57 countries. It presents a validation of the Haworth and Savage (1989) model of intercultural business communication, providing support for the application of this model—originally designed for interpersonal communication—to digital communication on Web sites. Web sites are shown to be influenced by the E/I ratio related to Hall's (1976) LC and HC communication styles. This study shows that the divide between explicit-LC and implicit-HC cultures is relevant for Internet-based business communication and highlights its consequences for both the content and the design of Web sites. It provides additional theoretical and empirical support to the literature that showed that design and content of Web sites in HC cultures differ from those of Web sites in LC cultures (Hermeking, 2005; Singh & Matsuo, 2004; Würtz, 2006). In addition, Ulijn et al. (2000) raised the question of the possible reluctance of cultures preferring an implicit-HC communication style to communicate over the Internet. The present study shows that HC communication style may be detrimental to the design of B2B Web sites, making them less readable, less effective in the use of colors and graphics, and less interactive for the global audience. Overall, our data show that B2B Web sites are primarily designed as unilateral digital communication channels, with sender-prepared content and relatively little (possibly none) feedback from the receiver. Therefore, the risk of ethnocentrically resorting to one's own communication style is significant for Web site designers.



Additionally, the present study investigates the choice of corporate language in B2B Web site communication. Findings show that industrial companies, although being global B2B suppliers, do not offer a large number of languages on their Web sites, with an average number of 1.9 language versions across the sample. Furthermore, this research empirically confirms the influence of HC versus LC communication styles on language diversity. Web sites from companies in LC countries have more Web site language versions than Web sites from companies in HC countries. Results also confirm the power of English as the global *lingua franca* and the major role English plays in B2B communication through Web sites (Charles, 2007; Louhiala-Salminen et al., 2005). Confirming this bias, our empirical findings show that Web sites from companies in English-speaking countries have fewer Web site language versions than Web sites from companies in non-English-speaking countries. However, nonnative English speakers may feel more comfortable with their own native language and therefore prefer a Web site in their own language rather than one Web site in English. This can lead to communication misunderstandings (Babcock & Du-Babcock, 2001; Varner, 2000) when Web site information from English-speaking countries is decoded by nonnative English consumers in a process that involves an implicit and unconscious translation into their own language.

Despite its limitations, Hall's framework applies to online communication and is useful in analyzing different forms of online business communication (Hermeking, 2005; Würtz, 2006). Most studies relating culture to business communication and media use, display correlations that are significant and in the predicted direction, despite being statistically relatively weak (Ess & Sudweeks, 2006). As emphasized by Ess and Sudweeks (2006), these results both confirm and identify the limitations of Hall's work.

### Managerial Implications

This study has different managerial implications for companies based in three country clusters: (a) HC cultures, (b) English-speaking LC cultures, and (c) non-English-speaking LC cultures. B2B companies from countries where communication is highly contextualized (HC cultures) should strive for Web site adaptation in terms of global business communication. Past research on Web site cultural adaptation showed that Web sites are perceived differently according to culture, and therefore need to be adapted especially as regards HC versus LC communication styles (Cyr & Trevor-Smith, 2004; Singh, Fassott, Zhao, et al., 2006). Companies from HC cultures should thus be more reflective and try to avoid ethnocentric design. LC is the default model in digital business communication because

the lack of face-to-face communication eliminates most—if not all—nonverbal communication, which Hall considers extremely important for the HC part of communication (what he calls “contexting”) to take place. With reduced context, there is little room for effective HC communication. From a normative point of view there are reasons to claim that LC should be the dominant model in digital business communication, because, being more precise, it reduces (but certainly does not eliminate) communication misunderstandings in DIBC. However, we have to remember that in addition to textual elements, there are also graphic and visual elements, which are evidently more typical HC communication elements. As a consequence, the normative stance in favor of LC communication should be kept within its limits.

However, because context qualitatively differs across HC countries, it may prove difficult for companies to adapt their Web sites to other HC countries (e.g., a Turkish or a Brazilian Web site adapted for the Chinese market). Web site adaptation may therefore turn into overbearing investments for HC industrial suppliers targeting other HC markets. It probably makes more economic sense to adjust the Web site to target markets in LC cultures. In addition, these companies should also involve LC country designers in the process of designing Web sites that are adapted to key corporate customers from LC cultures.

B2B companies from LC communication English-speaking countries have Web sites that are more readable and provide more information. The next step would be to develop different language versions of their Web sites (the average number of language versions for this group is 1.3). Yet different versions mean additional investment in Web design. They may be reluctant to invest in further language versions, especially if they are unsure about which language(s) to choose among a selection of secondary *lingua francas* (e.g., Chinese, Spanish, French, German, Japanese, Russian; see Ardila, 2007). Another reason for the relative lack of different language versions could be the relative shortage of language competencies in English-speaking countries. Foreign language competencies are not considered essential in the United States (Sussman & Johnson, 1993) and foreign language enrollment in higher education is limited (Welles, 2004). However, immigration leads to increasing language diversity in many Anglophone countries, including the United States (U.S. Census Bureau, 2003). Therefore, companies could take advantage of linguistic diversity and the associated language competencies to develop different language versions of their Web sites.

B2B companies from LC communication, non-English-speaking countries are in the most favorable situation. As LC communicators, their Web

sites are readable and informative. In addition, their Web sites have more language versions (the average number of language versions for this group is 2.5), providing them with a competitive advantage against companies from English-speaking countries in terms of cultural adaptation (Wilson & Abel, 2002).

### Limitations and Future Research

This study has several limitations. Coders were from an LC country, leading to a possible bias when coding company Web sites from HC countries. As argued by Edward Hall (1976), "There is a paradox in investigating high-context behavioral responses with low-context methods . . . Western science, striving for replicability and rigor in methods is conducted with a view to eliminating context" (p. 125). Moreover, the design of the present study is cross-cultural (comparative) rather than intercultural (interactive). It is not based on intercultural encounters between business people or locutors from different cultural backgrounds. However, there is an intercultural aspect in the research design because coders from an LC culture analyze Web sites from both LC and HC communication cultures. The standard coding instrument provides for a systematic comparison of design and content elements. In addition, this study covered company Web sites from 57 countries. Such a number was rarely reached in previous cross-national research on Web site design. We believe it offers a representative picture of Web site design and content for most industrial countries, whether developed or emerging. Some countries (e.g., France, Italy, the United Kingdom) are overrepresented in our sample, whereas others (e.g., Japan, Thailand, Canada) may be underrepresented. Furthermore, large multinational companies are underrepresented in the sample, first because of the constraint to have a single corporate B2B Web site per company (multinational companies most often have multiple Web sites), and second, because global B2B supply is largely based on highly specialized small- and medium-size companies focusing on market niches. As shown by the empirical results, larger companies (including multinational companies but not exclusively) may develop Web sites that are more readable, more interactive, designed with an effective use of colors and graphics, and that offer more language versions than smaller companies because they have fewer financial constraints. Future studies should thus replicate the present study with different countries, with more companies from countries underrepresented here, and they should include multinational companies.

This study helps to better understand how companies use Web sites to communicate with potential and current customers, but it also raises several questions that should be answered by future research. As shown above, companies offer a limited number of language versions for their Web sites, a finding that can be partially explained by HC versus LC cultures and English as the national language. Yet only 15% of the variance in the number of language versions per Web site is explained. Most correlation coefficients between HC-LC communication styles and particular categories of Web site design and content are significant and in the predicted direction, despite being relatively small. Therefore, future research should explore alternative explanations. One explanation can be related to costs associated with Web site translation. Adaptation costs differ across target languages and country-markets for Web site localization (Sandrini, 2005). Therefore, future studies may investigate the actual issues associated with Web site translation and the reasons B2B companies spend so little on Web site language adaptation. Other reasons may account for the cautious attitude of B2B companies on Web site language adaptation. For instance, they may be afraid that foreign customers would browse in the supplier's Web site in their own language and infer that business interaction with the supplier is possible through e-mail or phone in the customer's language. The lack of foreign language competencies within the B2B supplier company, translation difficulties for highly specialized industrial terms, and the need for a shared understanding of technical and contractual words, may also explain why B2B companies are relatively reluctant to develop multiple language versions.

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B2B companies from LC communication, non-English-speaking countries are in the most favorable situation. As LC communicators, their Web sites are readable and informative. In addition, their Web sites have more language versions (the average number of language versions for this group is 2.5), providing them with a competitive advantage against companies from English-speaking countries in terms of cultural adaptation.

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## CONCLUSION

This research project, based on a content analysis of 597 B2B Web sites from 57 countries, shows that B2B companies only partially exploit the potential of the Internet as a tool for enhancing global business communication. Web sites are mainly intended to present informative contents to potential customers, but offer few features facilitating interactive relationship and online business. In addition, companies develop few language versions of their Web sites, often limiting them to their local language and English as the *lingua franca*. The underuse of Internet opportunities in developing global business communications is even larger for companies from HC communication cultures and from English-speaking countries. Companies from LC communication non-English-speaking countries are in a relatively better position, having more readable and informative Web sites and a larger number of language versions. Therefore, all B2B companies should develop their Web sites to make full use of the Internet as a global communication tool for doing business worldwide. Companies from HC communication countries should strive for Web site adaptation because LC communication is more adapted to global DIBC. Companies from LC communication English-speaking countries should focus their attention on developing more language versions of their Web sites.

## NOTES

1. We contrast cross-cultural (comparative) and intercultural (interactive) approaches. An intercultural research design is based on the study of intercultural encounters between business people or locutors from different cultural backgrounds. Our research design is cross-cultural because we compare Web sites from LC and HC communication cultures.

2. This is not the case of the interactive forms of Internet communication such as e-mail, chats, forums, and so on.

3. In Japanese, a verb has no ending to indicate person or number; there is no article used with nouns in most cases; one and the same form of a noun may mean both the singular and the plural form, and subject and object are often omitted if they are understood from the context (Association for Overseas Technical Scholarship, 1975).

4. We refer to language-cultures to refer to the case when countries and their national culture are deeply associated with a definite language (e.g., China and Mandarin, the United States and English, France and French, Germany and German, etc.).

5. A search on the *Journal of Business Communication (JBC)* Web site (<http://job.sagepub.com/>) based on the key words "Content analysis" shows that 553 research studies in *JBC* have used content analysis as data collection method.

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