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About \$1 trillion is spent on R&D in electronics, computing, and telcomm companies world wide. The U.S. spends about one-third of that amount, according to *The Economist* (January 3, 2009). But while R&D in the U.S. and Europe grew by less than 2 percent between the years 2001 and 2006, the R&D committed to by China grew by 23 percent. Apparently, the most significant growth has been seen in South Korea, where Samsung, in 2007, spent more on research and development than IBM. This column in *Decision Line* has occasionally addressed technology issues in South-east Asia, so one might conclude that countries like South Korea and China would embrace any new technology with fervor. However, this month's column points out that not every technology is perceived to be useful by users in all countries. The authors Shim and Yang make an interesting argument about why countries that are so avidly pursuing new technologies may not adopt a resource such as Wikipedia. If you ever wondered about how people in other countries organize their knowledge and search for information, then read on. [Kenneth E. Kendall, Feature Editor]

Why Is Wikipedia Not More Widely Accepted in Korea and China? Factors Affecting Knowledge-Sharing Adoption

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In spring 2008, Jimmy Wales, a U.S. Internet entrepreneur and the founder of Wikipedia, had an interview with *Chosun Ilbo* (translation: *Korean Daily News*), one of the major newspapers with a daily circulation of over 2.2 million, regarding his philosophy of management of Wikipedia. The *Chosun Ilbo* reporter inquired an interesting question on reasons of Wikipedia's unsuccessfulness in Korea. He answered that one of the major reasons is another rival in Korea, Jisik iN (translation: Knowledge iN).

Jisik iN is a knowledge-sharing service provided by Naver, Korea's largest search engine. Jisik iN is organized by questions and answers, where any user can post question and provide answers. For example, the total number of questions registered in Jisik iN of Naver reached almost 80 million as of summer 2008. The current condition of Wikipedia

in Korea is quite different from that of Jisik iN. The total number of registered articles in Korea's Wikipedia totaled about 69,000 (as of July 2008), equivalent to 3 percent of the total Wikipedia articles written in English.

A similar instance occurred in China when Baidu Baike (a collaborative online encyclopedia provided by Chinese search engine, Baidu) triumphed the Chinese Wikipedia. About 50,000 new articles have been added every month since October 2005, totaling approximately 1.2 million articles on Baike Baidu as of July 2008. Tables 1 and 2 show the current status of Wikipedia and knowledge-sharing services in several countries.

There has been a virtual explosion in knowledge-sharing services over the past decade. Knowledge sharing of resources has been found to be important in the business world, in addition to the educa-

tional field. These numerous companies and organizations are increasingly relying on knowledge to survive, 'enabling' knowledge creation and knowledge sharing, while simultaneously attempting to retain as much of their knowledge assets as possible.

There exists a large amount of knowledge-sharing services across the globe and these services include everything from Wikipedia, Jisik iN, Baidu Baike, Knol of Google, Yahoo! Answers to classroom style lectures. Moreover, these knowledge-sharing services have become more advanced technologically, as the demands for these services render them to be more valuable in the competitive market.

Our research question is posed as "Why isn't Wikipedia is not as widely accepted in Korea and China, despite the early adoptive behavior of the Koreans and the Chinese of the new and emerging ICT?" This brings up a valid point as to why, despite the lack of empirical evidence, is the notion still embraced that being the first to enter a market always advantageous?

In general, language barriers and the lack of native language-written contents could be obstacles for Wikipedia in Korea and China. However, the language barrier issues alone do not clarify the weakness of Wikipedia in Korea and China, since Wikipedia had already provided independent services written in Korean

and Chinese. Interestingly, other web services, such as Google, do not mirror success stories in the two countries similar to that of Wikipedia. The following presents the current status of knowledge-sharing services and explains factors affecting their adoption.

Current Status of Knowledge Sharing Services

"You want to get an answer? Look for the answer in Jisik iN (translation: Knol-wege iN)." This simple phrase is just an advertising slogan of Jisik iN on Naver's Web site (Korean's search engine), but it clearly demonstrates the change of how knowledge can be created and trans-

Region	North America	Asia		Europe	
Language	English	Korean	Chinese	German	French
Founded in	2001.01	2002.10	2001.05	2001.03	2001.03
# of Articles (Million)	2.6	0.076	0.21	0.8	0.7
# of Users (Million)	8.07	0.048	0.52	0.63	0.47
Ranking	1	28	12	2	3

Sources: http://en.wikipedia.org/wiki/History_of_Wikipedia; http://meta.wikimedia.org/wiki/List_of_Wikipedias; <http://en.wikipedia.org/wiki/Special:Statistics>

Table 1: Current status of Wikipedia in several countries (as of July 2008).

Region	Asia		North America			Europe	
Language	Korean	Chinese	English			German	French
Service	<i>Jisik iN</i>	<i>Baidu Baike</i>	<i>Wikipedia</i>	<i>Knol of Google</i>	<i>Yahoo! Answers</i>	<i>Wikiwise</i>	<i>Vikidia</i>
Founded in	2002.10	2006.04	2001.01	2008.07	2005.12	2005.04	2006.11
# of Articles (Million)	80 (2007. 11)	1.28	2.6	N/A	66	0.0035 (2008.02)	0.04
Service Type	*	**	**	***	*	**	****

Service Type: * Portal-Based Q&A Service on General Areas
 ** Online Encyclopedia of Wiki Technology on General Areas
 *** Expert-Answering Service on Specific Areas
 **** Online Encyclopedia of Wiki Technology Focused on Specific Areas

Sources: <http://en.wikipedia.org/wiki/Wikiwise>; <http://en.wikipedia.org/wiki/Vikidia>; http://en.wikipedia.org/wiki/Baidu_Baike; http://en.wikipedia.org/wiki/Yahoo!_Answers; <http://kin.naver.com>

Table 2: Current status of knowledge-sharing services in several countries (as of July 2008).

ferred within Web 2.0 society. Before Web 2.0, knowledge was thought to be an idea attainable only by experts. However, after the advent of Web 2.0, the concept of knowledge has broadened to include the most valuable asset of users' expertise and connection—social networking elements, such as users' personal experiences and discussion groups.

Nowadays, all users can potentially become specialists on the Web by sharing their experience with others via online communities (Shim & Guo, 2009). These significant changes are encouraged by knowledge-sharing services such as Jisik iN, Yahoo! Answers, and many wiki-technology online encyclopedias represented by Wikipedia. Knowledge-sharing services are built on the concept of knowledge networking, which is a powerful combination of knowledge management and networks.

The rapid growth of Web 2.0 has greatly increased the ability to share knowledge. Numerous Web 2.0 communities involved in knowledge sharing have actually had an abundance of knowledge given. According to the Corporate-Eye website (<http://www.corporate-eye.com>), other programs, in addition to Wikipedia, include Scribd, Knol of Google, DocStoc, Squidoo, Ascend, and PDFGeni. Moreover, Cgair, an agricultural group, has recently been focused on sharing knowledge with less developed countries in order to give them the tools necessary to grow the crops needed for their survival. As the Internet continues to grow at a significant rate, knowledge sharing will allow important knowledge to be quickly disseminated.

Factors Affecting Adoption

There are several factors affecting ICT adoption. Adopting knowledge-sharing services site is no exception in this regard. The first factor involves human-computer interaction. Jisik iN is organized by questions and answers in which any Korean user can post questions and provide answers. Pertaining to Baidu Baike, it is easy for Chinese people to use

it, compared to Wikipedia. The specific (technical) search language method of Wikipedia is not usually understood by more Chinese people, given the sensitive phrases and information being blocked.

Language barriers and the lack of native language-written contents could be obstacles for Wikipedia in Korea and China. However, the language barriers cannot explain the weakness of Wikipedia enough, since Wikipedia already provided independent services written in Korean and Chinese in early 2000s. There are some considerations, such as mistrust of the cultural knowledge and simple national pride for the failure of Wikipedia in Korea and China.

A second factor affecting ICT adoption is behavioral. Most Asian enterprises and consumers are culturally similar in their penchant for fashion, brand-name retail items, and novelty purchases. The Korean consumers' behavioral patterns are those of "early adopters" of technology, which is critical when it comes to penetration and adoption of new tech gadgets (Shim et al., 2007). Also, the design and contents are a couple of important factors affecting the adoption of knowledge-sharing services. The question is how the design and contents correspond to users appropriately.

One of the reasons attributed to Wikipedia's unsuccessful attempts to launch in Korea can be revealed when one observes the design and contents of Jisik iN. The site corresponds to the needs of Korean consumers, through knowledge sharing, in addition to users' behavioral patterns.

A third factor affecting ICT adoption involves user's loyalty to first-movers. Users generally rationalize the decision to remain with the first brand encountered as long as the users' needs are satisfactorily met, unless they are presented with improved services or products. The first-mover company advantage is the concept that being first in the market gives it a competitive edge with a new product or service. By allowing users to have first exposure to the service, the first-movers have an advantage of

preemption of input factors, thereby gaining control of the resources. Given that the first-mover companies in the market, as pioneers, have to invest more in R&D and educating the market, there can be two obvious drawbacks to being the first-mover: cost and risk.

The first company in a particular market will not be able to benefit from knowledge of successes and mistakes of others. The second or third mover to the market can be successful, but being first can generate free publicity and valuable brand recognition so that users are generally locked in and/or tied to the first mover service (Rangan & Adner, 2001). In this regard, the Korean users experienced the success with its first-mover service, Jisik iN, compared to its competitor and second-mover service, Wikipedia.

Conclusion

While sharing knowledge was believed originally to be a major problem with the belief of scarcity of information, numerous Web 2.0 communities involved in knowledge sharing have actually had an abundance of knowledge sharing. Currently, knowledge sharing can be used in various fields such as in universities, corporations, government, and health-care settings (Kendall, 2008).

Several aspects of cultural differences, technological infrastructure, behavioral patterns, design, and contents play a role in determining the users' adoption or rejection of ICT. Also, more crucial than a first-mover entering the market is for companies to understand better the customers' needs, while innovating and evolving the products or services to become the dominant design. The knowledge-sharing service is no exception in this regard.

As mentioned earlier, Wikipedia's struggles in Korea and China show clear evidence that understanding of cultural differences, user's behavioral patterns, and overcoming the first mover's advantage in knowledge-sharing service can be key factors affecting on adoption of Wikipedia in both countries. In the

competitive environment, knowledge sharing is very critical for individuals and organizations to utilize as a means to gain competitive advantage.

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