



# Asian E-Business: All Dressed Up And Ready To Go

The Internet Take-off and Web Babelization in Asia

by Rose Lockwood



In spite of market fluctuations, economic rollercoasters and threats of recession, the Internet revolution has taken root in Asia. Governments in the region have been racing to install broadband infrastructure, deregulate the telecoms industries and build “cyber” hi-tech parks to accommodate Internet and IT entrepreneurs: Cyberport in Hong Kong and Cybercity in nearby Shenzhen, Cyberjaya in Malaysia’s Multimedia Super Corridor near Kuala Lumpur, and another Cybercity near Jakarta in Indonesia. There is a special “IT zone” in southern Seoul; Singapore was wired with high-speed cable before any of these cyberparks were even founded, and the government subsidizes accommodation and facilities for technology entrepreneurs. The Indian government supports more than a dozen software technology parks, administered through the STPI agency, which also has offices in San Jose in Silicon Valley.

### Market Readiness

These mostly public-sector initiatives have paid off in many ways for the emerging e-business markets in Asia, providing connectivity and infrastructure to support access to and use of the Internet for business in the region. Key take-off factors—Internet penetration, availability of broadband, entrepreneurial resources—define the most promising markets, while barriers such as prohibitive access charges constrain e-business development in others. So far Japan and Korea (data is for South Korea only) score highest in the Asian e-business readiness stakes, with their well established infrastructure and large numbers of Internet users. Singapore, Hong Kong and Taiwan rank in the second tier. Although their relatively small populations limit B2C opportunities, they compensate with other advantages—strong infrastructure in Singapore, a well developed engineering base in Taiwan, an entrepreneurial investment culture in Hong Kong. China and India, with their vast geographies and huge populations, face more hurdles, but even here signs of take-off are evident.

In major Asian markets, expansion of broadband access to the Internet is inversely proportional to the size and distribution of Internet populations. Japan, China and India, for example,

all have less than 2% of their Internet populations connected to broadband services, while Hong Kong, Singapore, and Taiwan all have 5% plus on broadband (Korea has 3%).

Access charges are another gating factor for e-business development in

it in Asian languages, users still have to use English (or Roman) characters to access these non-English sites. Until 1998 few people had considered how Internet users in Asia could be provided with Web site addresses expressed in their own language

| Internet Penetration-Key Asian Markets |                                     |
|--|-------------------------------------|
| % of population with Internet access   | Markets in Asia                     |
| 25% or more                            | Singapore, Korea, Hong Kong, Taiwan |
| 15%                                    | Japan                               |
| 10% or less                            | China, India                        |

Source: Data on Asia Internet infrastructure is from [geomarkets.com](http://geomarkets.com) (2001).

Asia. Geomarkets measures access charges as a % of per-capita GNP; this is, roughly speaking the average proportion of income spent on Internet access. By this measure, Singapore, Hong Kong, Japan and Korea score highest (with rates under 1%), while rates in China (5%) and India (10%) are prohibitive. With large undeveloped sections of the Indian and Chinese economies, the high average charges conceal pockets of connected and progressive development in high tech centers such as Bangalore in India.

### Babelization of the Asian Web

The robust growth of the Asian Internet has created many language challenges, as well as new technology to improve access to the Web in Asian languages. Japanese Internet users were the first large-scale buyers of machine translation (MT). By the mid 1990s hundreds of thousands of English-to-Japanese MT installations were giving Japanese users at least some access to the overwhelmingly English-language resources of the Internet; it would be several more years before speakers of European languages had the similar MT services, such as AltaVista’s Babelfish. As the cultural diversity of the Web increases, so also does the linguistic diversity of its resources, and though there is still an imbalance in favor of English, the Web is now truly multilingual.

The rise of the Asian Web has caused a predictable—if not widely anticipated—domain naming issue. Even though there is now plenty of non-English content on the Web, much of

characters, rather than the “Roman” script used by English and most European languages. In that year, a project at the University of Singapore began to test non-English equivalents of the suffixes .com, .net and .org. Technology was developed and shared with relevant Network Information Centers (NICs—these are the bodies that administer country domain names) in the region.

The Singapore initiative eventually led to the creation of a commercial company, i-DNS.net, and here the story gets complicated. In response, the public NICs in China (CNNIC) and Taiwan (TWNIC) created their own Chinese naming systems; JPNIC now has a similar project for Japanese. The i-DNS technology was licensed to a number of different Internet address registrars, and a competing initiative—the Multilingual Domain Name Testbed—was started by VeriSign in the US; VeriSign now provides registration in more than 60 languages and scripts. According to the Far Eastern Economic Review, more than two million addresses in scripts other than English have been registered with dozens of different registration companies worldwide.

### In Search of Standards

There is a problem with multiple registries for these non-English domain names. Without a standard technology supporting multiple character sets, and an agreed common registry for names, the universal accessibility of Web content is threatened. A user may



not have the right browser software for different versions of non-English characters, and even worse the same name can be registered with multiple agents. Two users requesting the same address could be directed to different sites—a serious challenge to the ubiquitous access that is the essence of the Web.

Theoretically, the Internet Corporation for Assigned Names and Numbers (ICANN)—through its subsidiary the Domain Name Supporting Organization (DNSO)—should have authority to specify how these new non-English names are managed and registered. ICANN is a non-profit, private-sector corporation formed by a coalition of the Internet's business, technical, academic, and user communities. In practice, although ICANN is multinational and represents a broad constituency, it is perceived by many (especially in Asia) as US-focused, or even biased toward US/European interests. It claims, as justification for its own initiatives toward internationalizing domain names, that "although the percentage of the world's population that can read Roman characters is increasing, billions of people *still cannot*" implying, perhaps, some inex-

orable trend toward a wider and wider acceptance of Roman characters.

For Asian Internet users, and those using the hundreds of languages that don't employ Roman characters, multilingual multi-character-set support of Internet addresses is an immediate objective, and a problem that needs to be solved for the long-term. Governing bodies in many Asian markets insist that they should have control over the destiny of their languages on the Web, and multilingual naming has become a political issue with competing interests from national "owners" of certain languages, and the communities of speakers that may be geographically distributed.

Meanwhile, publishers and e-businesses serving the fast-growing Asian Internet markets must take interim measures, and develop strategies for Web addressing that accommodate the multiple paths users may take to their sites. Managing an appropriate architecture of multi-language addresses will be an increasingly important aspect of multilingual Web publishing.



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