

# Draft WGIG Issue Paper on the Multilingualization of Internet Naming System

This paper is a 'draft working paper' reflecting the preliminary findings of the drafting team. It has been subject to review by all WGIG members, but it does not necessarily present a consensus position nor does it contain agreed language accepted by every member. The purpose of this draft is to provide a basis for the ongoing work of the group. It is therefore not to be seen as a chapter of the final WGIG report, but rather as raw material that will be used when drafting the report. This draft working paper has been published on the WGIG website for public comment, so it will evolve, taking into account input from governments and stakeholders.

## 1. Issue

### 1.1 Growth of the Internet using a single international language.

The Internet was first started and developed from ARPANET in the United States. Ever since 1990, it has flourished with tremendous speed and is now a critical factor in the basic Information Communication Technologies (ICTs) as basic infrastructure.

Development of the Internet has changed how we live and how we do business. From this development, people have gained unprecedented benefits from the Internet. However, the primary development to date has taken place mainly in one language, English, which results language barriers in non-English speaking countries and for non-English speaking users. This has contributed to a gap in information and access to information between English and non-English speaking countries. In turn, in some non-English countries this has contributed to the lack of integration of the Internet and the ability to fully maximize the Internet for economic growth.

Not just a resolution to digital divide and associated economic gap, Multilingualization of Internet has been also believed to increase the diversity of culture and serve special interests of different peoples. It is specially important for indigenous peoples, for whom the Internet is a potentially valuable tool for preserving traditional languages and, knowledge. No one seems to argues the importance of the cultural diversity and its profound implication benefited from Internet multilingualization. This paper presently focuses on the multilingualization of Internet Naming System, one of

the areas which should be addressed under the slogan of the Internet multilingualization..

## 1.2 Increasing but incomplete support of the Internet for other languages

The methods for multilingual access to Internet resource currently available are: IDN(Internationalized Domain Name), Keyword lookup, Keyword search, and Directory services<sup>1</sup>.

IDN(Internationalized Domain Name) is designed to use the multilingual characters as well as English alphabet, numerical character and some symbols without any modification to existing DNS systems. However, it presently does not allow the TLDs to use the multilingual characters, which is still on the table of debate for further improvement.<sup>234</sup>

Keyword lookup is a kind of website address service that directs users to an appropriate website when a keyword is typed into the browser's address bar. It is known to be capable of handling native characters of the various languages. From the technical point of view, there are two types of keyword lookup services. One is a client-side-based service like IDN which requires users to install a plug-in software on each browser, while the other one is a server-side-based service which needs some modifications to DNS lookup functions.

Directory and Keyword search are the services enabled by various search engines. The former utilizes pre-registered databases and the latter utilizes databases that accumulate website contents.

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<sup>1</sup> Native Name Seminar during APRICOT(Asia Pacific Regional Internet Conference on Operational Technologies) 2005 will address the related issues methods.(<http://www.iak.ne.kr/nativename/2005/kyoto3.htm>)

<sup>2</sup> <http://www.icann.org/meetings/kualalumpur/captioning-idn-workshop-21jul04.htm>

<sup>3</sup> <http://www.icann.org/meetings/capetown/captioning-idn-workshop-01dec04.htm>

<sup>4</sup> <http://www.minc.org/events/carthage2003/>

## **2. Attribution to category**

It is evident that more people will become more actively engaged in the Internet population if Internet address system allows Internet browsing in their own local language from current English based domain name system. Considering that there are more than 60 percent of non-English speaking people around the world, it shows how important it is to have Internet address systems in local languages. This will create more convenient Internet environment with localized Internet addresses and will enhance the generalization and globalization of the Internet. Thus, this issue is attributed to the category and mission “Access for ALL”.

## **3. Assessment of risk and problem: what works, what doesn't, where are the risks**

As noted in the preceding chapter, there are a number of multilingual access methods for content on Internet. Each of those has their own inherent merits and demerits. In this paper we presently focus on those two types of services, IDN and keyword lookup, which functions or to be intended to function as the Internet address.

### **3.1 What Works?**

The first form of multilingualized Internet name is IDN(internationalized Domain Name) which has the structure of “Name in local language” + “.” + “English TLD” (e.g., 삼성전자.kr). The resolution for IDN is based on the distribution of client software. IDN has been commercialized in China, Japan, Korea and others. Through the effort from many sectors of Internet community, the global technical standard has been established.

Another form of multilingualized Internet name is known as keyword lookup service which has “Name in local language” (e.g., 삼성전자) format. The resolution for keyword lookup service is based on the name servers or on the client software, depending on service provider. Keyword lookup service was first commercialized in Korea in 1999, and shortly after China and Japan.

### 3.2 What doesn't work?

IDN service started ambitiously but the market reaction was not adequate as it had been expected. Referring to the most recent statistics from [webhosting.info](http://webhosting.info), 74% of IDN registration throughout the world is concentrated on three countries: USA, Korea and Japan. In other words, IDN is not only lopsided, but also its growth is considerably slower than English Domain Name.

The multilingual process of IDN does not take place at the server side, but at the client side. This requires a client software to be installed on every individual's personal computer for the necessary function of converting multilingual code to ASCII code. It is becoming to a certain degree obstacles for flourishing the service. To alleviate this problem, many people proposed to have a built-in IDN client software in every browser which could contribute and assist to the deployment of IDN service. However, major browser companies such as, Microsoft has not yet put up a clear schedule for such an update<sup>5</sup>.

In addition, structure of IDN, "Name in local language" + "." + "English TLD" (e.g., 수원시청.kr) is not natural by looks to local peoples due to difference of linguistic culture.

e.g.,     http://수원시청             => natural

          http://수원시청.kr         => awkward to local people

Another point we need to take into account is that the current IDN in service cannot be considered to be fully internationalized, because we still need to add English TLD at the end and to use Latin characters to type the protocol name(http). This forces the users to change input method, which resulted in another inconvenient aspect of IDN.

It has been reported that, to mitigate this inconvenience, the Internet community, In some countries, has been pulling together and now gains the success gradually.

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<sup>5</sup> <http://www.icann.org/meetings/capetown/captioning-idn-workshop-01dec04.htm>

Particularly in China, the input methods that allow people to type out IDNs without shifting input method (press “Spacebar” for Chinese characters and “Enter” for ASCII letters, both “. ” and “. ” can be recognized by Chinese Domain Name system).

Another issue we need to address is that there is no policy yet on who should be entitled to make policy on linguistic issues, such as the table of character equivalences for each script and language. There have been complaints about the legitimacy of some ccTLDs establishing tables for languages used in other countries. The lack of globally agreed character tables might lead to incredible confusion, as domain names which would be equivalent under certain TLDs would not be equivalent under others.

The current policy approach by ICANN until now has been of “laissez-faire”, which each country and registry choosing its policies. However, some global policy is necessary, especially in the gTLD field. For example, consumers should not be asked to pay many times the registration fee to reserve all different variants of their names; in those languages which employ extended Western scripts, the opportunity of a sunrise period for existing registrants to register the “enhanced” (i.e., with proper accents or other marks) version of their names should be considered<sup>6</sup>. It is likely that, in the lack of universal access policies, gTLDs would not add support for “minority” scripts, as commercially it would not be of interest to them. All these issues require a more careful discussion of global policies on IDNs, before it is too late.

The necessity for keyword lookup service is growing and its market acceptance in some countries is quite successful, but the keyword lookup service standard is still at the stage of triggering and an international consensus on service is not assembled yet. Leading companies in each country are determining their own service concept independently. While they have been putting their efforts to reach a sort of compromise, they could not come up with the visible outputs.

For example of the service, Netpia.com Inc. (Korea) is providing the keyword lookup service under the name of “Native Language Internet Address (NLIA),” and

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<sup>6</sup>For example, the current registrant of “liberte.com” could be given priority over “liberté.com”.

they have developed their own version of the server-side-technology.

JWord is Japanese example for keyword lookup service provider based on the browser plug-in software. 3721.com in China is also a keyword lookup service provider which employs the same technology with Jword.

In the past, company called RealNames had launched the keyword lookup service on a global scale under the support of Microsoft. Microsoft then allowed built-in client function of keyword lookup service to Internet Explorer browser. But the service was suddenly discontinued due to partnership breakoff between RealNames and Microsoft. Not to speak of the ending of service, it also created uncountable loss to a number of innocent customers and users. This historical case would present us the importance of an accountable international and multilateral organization with regard to the Internet name services.

#### **4. Actors (who, with whom)**

##### 4.1 IDN

- ICANN: Name policy
- IETF: Technical standardization
- MINC: Service promotion and discussion forum for local players
- I-DNS: Initial technology initiator and service provider
- JPRS, KRNIC, CNNIC, HKNIC: Major steering actors
  - \* In China, IDN for ccTLD has been tested and applied independently.
- TLD registry: Service registries
- government: active especially in non-English speaking countries

##### 4.2 Keyword Lookup service

- Netpia: Korean Keyword Lookup service provider and associated solution provider
- CNNIC: Chinese Keyword Lookup service provider
- 3721 (Yahoo): Chinese/Japanese Keyword Lookup service provider
- ITU: Technical standardization (in progress)
- ISP (Internet Service Provider): providing server-based infrastructure for the

keyword lookup by patching multilingual S/W package to their own DNS servers.

- MINC: service promotion and discussion forum for local players

## **5. Governance Mechanism**

### 5.1 Status Quo

#### 5.1.1 IDN

IDN fundamentally holds the identical DNS governance mechanism. ICANN takes in share of the policy and IETF is responsible for the technical standardization. Under the supervision of the US government, ICANN is handling policies including confirmation of language code table, decision of supporting multilingual TLD, registration policy for script variants, etc. Currently, China, Japan, Korea, Hong Kong and Middle East countries are actively participating in such activities. And as mentioned above, IETF is handling the entire activities that are related to technical standards.

#### 5.1.2 Keyword Lookup Service

The keyword lookup service providers in each country are defining the nature of their own services and decide the service policies independently based on their own definitions. For instance, some companies show the search results associated with the meaning of keyword as well as the corresponding webpage, while others are more focused on the address concept and put 1:1 look-up service as number one priority.

To overcome conflicting issues and problems, there have been many efforts to reach the international consensus through discussions in MINC, APAN meeting and so on<sup>78910</sup>. However, there are no visible outputs so far.

### 5.2 Suggestions for governance alternatives alternations

#### 5.2.1 Principles

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<sup>7</sup> <http://www.iak.ne.kr/new/keyword/minutes/030827.htm>

<sup>8</sup> <http://www.iak.ne.kr/new/keyword/minutes/030318.htm>

<sup>9</sup> <http://www.iak.ne.kr/new/keyword/fukuoka/minutes.htm>

<sup>10</sup> <http://www.qgpop.net/2003fukuoka/AB.html#A1>

- a. As for multilingualization of Internet name, it is a policy issue rather than a technical issue to be tackled through international cooperation based on mutual understanding.
- b. The multilingual Internet names are the Internet address resources of each country, and the administration should fall under each sovereign state.
- b. An multilateral organization under the UN framework with the full participation of the private sectors and civil societies should make unified uniform policies to guide the deployment and administration of multilingual Internet names. And the existing organizations go on functioning for the technical coordination.
- c. The multilateral organization should be operated under the principles of democracy, transparency, openness and efficiency.
- d. In case we are unable to promote the use of multilingual Internet names through the appropriate measures. It is possible that the potential users of multilingual Internet names may choose alternative technical solutions that are not in line with the current technical criteria due to their urgent need.

#### 5.2.2 Proposals

- a. Given the complexity of the world languages, pilot project for IDN.IDN should be first implemented only in certain languages (e.g. the six working languages of UN, or the IDN-commercialized languages) so as to ensure the stable operation of the domain name system. After then it could be extended gradually to other languages.
- b. The ccTLD registry may choose independently the IDN languages (or choose a font combination in one language) for the ccTLD.
- c. Register the IDN mode of each ccTLD in punycode in the ICANN root server
- d. The prepared ccTLD registry may first apply to ICANN for the IDN registration services. Those who are not ready may apply after the completion of preparation.



- e. In the initial period of this project, it is suggested that each ccTLD set only one (or one group of) correspondent IDN ccTLD (e.g. IDN.cn). Adjustment and increase may be made on demand when practical experience has been accumulated.
  
- f. The multilateral organization supports the technical research and name-policy-related study on the Keyword lookup service. In addition, the organization provides the space of discussion among the keyword lookup service stakeholders including existing service providers.

## **6. Adequacy measured against criteria / benchmarks set out in Declaration of Principles.**

It meets all the criteria set out in Declaration of Principles: being multilateral, transparent and democratic, the Internet governance issue should be addressed in a coordinated manner and based on a multi-stakeholder approach.

Declaration of Principles sets out that the Internet should “facilitate access for all and ensure a stable and secure functioning of the Internet, taking into account multilingualism”. Plan of Action also sets out: in cooperation with the relevant stakeholders, to promote regional root servers and the use of multilingual domain names in order to overcome barriers to access.