The History of Internationalised Domain Names (IDN)

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Beginnings – early 1998

- The IDN Movement first started in a big way in 1998 with the first working implementation of a “primitive” ASCII conversion encoding – UTF5 at the Internet R&D Unit of the National University of Singapore March 1998.
- Expansion into an APNG commission July 1998
- Formation of an Asia Pacific testbed in various countries in Asia, 2H 1998
- Working Demo at IFWP August 1998 Singapore
- Explosion of interest - end 1998
Pre-1998 IDN motivations

- UTF-5 and 0TLD paper by Martin Duerst was one of the earliest attempt to articulate a workable solution to the lack of multilingual feature in the DNS – motivation: academic proof that IDN possible in the DNS (1996/1997)
- Wider pre-1998 motivations were multilingualism at its core, which is revisited in ITU in a big way through the WSIS today in 2004
A Multilingual Internet

- 1995 – Tamil Internet, Multiple language on one webpage; Chinese script email;
- 1996 – PoemWeb-anthology of south-east Asia poems in four languages on the Web; Tamil script email
- 1997 - Trilingual Sinhala-Tamil-English webpages INET’97; TamilWeb -- World’ 1st Tamil Internet Conference
- 1998 - Java Applet Multilingual Keyboard Input system GIME
Multilingual Internet activity

- 1994 - multilingual web browser project; multilingual conference in Tsukuba
- 1995 - Chinese script website; Chinese content email; auto-Script-to-Image conversion, Malay website Kampungnet, etc
- Website for hearing impaired deaf students to learn sign language
- 1996 - PoemWeb-anthology of south-east Asia poems in four languages on the Web
- 1997 - TamilWeb; World’ 1st Tamil Internet Conference
- 1998 - Java Applet Multilingual Keyboard Input system GIME
So what is the Problem?

- Multilingual Content - ‘babelisation’ has taken place
- Remember the Joint ISOC/Alis Babel project in 1996
- Label?
Labels

- Domain names eg. www.yahoo.com
- Email addresses eg. tinwee@pobox.org.sg
- URLs eg. http://www.apng.org/
- Keywords or Common names eg. Realnames™
- ENUM
- Can they be multilingual too?
Multilingual Internet labels – is that possible?

- http://ヤフー.会社.日本/
- Telnet to 中山大學.教育.台灣
- FTP to 大學.日本
- Email 黃大文@太平洋.网络.新加坡
- Yes indeed!
- Our solution was to implement Unicode → UTF5 as the earliest form of the by now well-known IDNA standards of ASCII Compatible Encoding (ACE) using Punycode (2003)
IDN – internationalization of the DNS

- 1998 - March-May - Solving the final barrier to widespread adoption of Internet in non-English speaking communities: Internationalization of the Domain Name System (IDNS)
- 1998 – 2nd half - Asia Pacific testbed by APNG
  Dec 1998 BIX Pte Ltd sponsorship
- 1999 Research Grant by IDRC of Canada IDN for IPv6
- http://www.apng.org/old/commission/idns/
iDNS

- 1999 iDNS project by the IRDU, NUS became NUS Spinoff Company i-DNS.net International Inc. through funding by General Atlantic Partners. James Seng, my former student as CTO.
- 2000 - more than 10 implementations dozens of companies
- IETF IDN Working Group
- 2000 - more than 10 implementations dozens of companies
- IETF IDN on standards track
- iDNS for IPv6 project funded by IDRC (Canada) completed
History

iDNS Project (National University of Singapore)

iDNS Working Group at APNG

Testbed Period

JPNIC, KRNIC, CNNIC, HKNIC, SGNIC, MYNIC, THNIC, TWNIC

Entry of Commercial Groups

i-DNS.net, Netpia, etc. first companies to take up challenge

Many companies offering half-solutions by 2000

Interoperability Issue became urgent
Formation of MINC

- Multilingual Internet Names Consortium - MINC
- International organisation
- More than 20 founding members
- Initiated in Seoul Korea
- Founding period in July 2000
Principles for adoption of multilingual domain names worldwide

• Minimal Changes to Current DNS system
• Must not break existing structure and hierarchy
• Support all languages
• Support as many encoding as desired
• Avoid ambiguity - uniqueness
• Work everywhere for everyone
Advice

- Follow IETF process
- Seek International Consensus
- Minimise disruption or protocol changes
- Avoid confusion
- Harmonise solutions
- Adopt simplest solution
Aims of MINC

• International Forum and Platform
• Increase awareness
• Promote concept of multilingual names
• Technical coordination
• Help the industry
• Promote understanding
Some founding members

- Companies: I-DNS.net, NSI Registry, Netpia,
- Academic & Research: KAIST, NUS
- Investors: GA Partners
- Authorities: JPNIC, KRNIC etc
Why do we need multilingual names?

Natural (Cultural identity)  
Use local language for local message

Example:
Write an address in Japanese when you write in Japan.

Romanized characters are difficult to many people

Example:
ellementary school children,  
people with less education
The Vision of IDN

– Solving the final barrier to widespread adoption of Internet in non-English speaking communities
– Reducing the digital divide specifically in non-English speaking communities
– To give all Peoples of the World the best chance to succeed in the Internet world and in E-Commerce and in the Future of the Digital Knowledge Age
IDN nay-sayers

- Technically not possible – proven it works
- No demand and no interest - plenty
- No service providers – plenty came
- No organisation – MINC, ICANN, etc
- No standards – RFCs of IETF
- Not Interoperable – Interop testing
- No Language Tables – MINC tables
- No legitimacy – rights of community, who gets to decide on my language? Us!
  → language empowerment groups
No vehicle?

- MINC and language groups
- ICANN
- ITU
- WSIS
- UN
- ???
I can or I CAN Not?

- Challenges no longer just technical
- Policy
- Politics
- Diplomacy
- Statesmanship