Culturally-appropriate Local Environments and a Global Internet

John C. Klensin
Internet Society

Reflecting on the Agenda

- Many papers seem to be about technology details
  - How to implement X
  - Experience with Y
  - A technology for Z
  - Making particular Internet tools more international

Are Those Answers to the Right Questions?

- Need to talk about
  - Culture
  - Language
  - Access to the network by
    - Non-English speaking
    - Non-Roman-alphabet using
    - Maybe not-keyboard-adapted
  - users ... and figure out what the problems are

What Problem is to be Solved

- Formulation of the problem is critical
- Getting distracted by the wrong issues
  - Wastes energy and resources at best
  - May result in the wrong conclusions

In Particular… Names

- Naming is a path to an end…
  - Navigation: Finding things if the name is known
  - Identification: Distinguishing one thing from another
  - Identification usually requires context
- Naming is not very interesting as an activity in itself, except…
  - For those who sell or broker names

In Particular ... Writing and Character Coding

- Generally, writing systems exist to support languages and text
  - There are some important exceptions, but they do not change the point that
  - Few users care about writing system except as a mode of expression

Character-Coding Systems

- Computer character-coding systems
  - Support encodings of writing
  - Usually necessary, but not sufficient, for culturally-reasonable text display
- Good text display, with proper design requires
  - Page description formats
  - Image display
  - Layout-specific markup

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Making Internet Facilities Accessible Globally: The Real Issue

- Content and Access in every language

- Presentation appropriate to culture

- No user-level advantage to particular cultures or languages

Internationalization and Localization

- Internationalization is a set of tools and a principle
  - Except in those ways, no one cares but technicians
  - The tools facilitate multicultural access
  - They are not sufficient and not the only possible mechanism
- People want what we call localization

Localization

- Adaptation of systems to local needs
  - Language
  - Culture
  - Local terminology and conventions
- How local is "local"?
  - Country?
  - Village?
  - Neighborhood?

Localization in a Global Context

- Localization is hard work, but straightforward if
  - Language and culture are understood
  - Coding exists or can be created for writing and display of content
- and
  - One does not care about simultaneously interacting with a global environment

Within a Culture...

- Do not need agreed-upon international conventions
  - May help to build on the experience of others, but
  - Some of that experience may not be relevant
- Large numbers of peoples and cultures whose names for themselves are just "the people"
  - No confusion until they interact with others

If Cultural Preservation is *the* Priority

- All of the traditional advantages of isolation apply
  - Internationally-incompatible local conventions prevent "contamination"
  - Communication, across boundaries, aids
    - Development
    - Integration with the rest of the world
    - International trade and commerce
    - ...but maybe one does not want that

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A Global Network

- If, by contrast, one's goal is
  - A global network – of people and technology
  - Maximizing international communications
- Then
  - Homogeneity is good
  - Common conventions, protocols, and language
  - Bad for maximum access and cultural preservation

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The Challenge

- Not
  - How to build the best, most localized, network possible   *...nor...*
  - How to build the best globally-integrated network

- But
  - How to balance local and global needs *...or...*

- How to layer a localized network on a global Internet and take advantage of it

What Do We Need from a Global Internet?

- Ability to access any resource from anywhere
  - Capability does not imply
    - desire to do so
    - ability to understand material
  - Restrictions may be applied (e.g., to keep children from inappropriate content) but
  - The network design and implementation should not be the restriction

What Do We Need from a Global Internet?

- The Ability to Find Material of Interest
- Navigation...
  - Search
  - Directories
  - Names
- All accessible in local languages

  ...but not always global

What Do We Need from a Global Internet?

- ## Ability to Innovate & Drive Commerce
  - internationally, not just domestically
  - without prior international agreement

- ## As close to real-time as possible

- ## Unrestricted by conversion gateways
  - Usually slow things down
  - Always lose information

Satisfying These Needs

- Requirements include
  - Predictable global resource namespace
  - Predictable global address space with few or no intermediaries
- But do not require that these be end-user-visible

Network Resources and Presentation

- Protocol terminology seen by user
  - History in Internet applications implementations
  - Known bad idea for 35 years
  - But easy for implementers
    - `https://www.example.com/myco/cgi-bin/snd/36445-bkks-yzcf-5kzz` is not user-friendly in any language or culture
    - `https://www.xn--e1afmkfd.xn--j1aef/myco/cgi-bin/snd/36445-βκκσ-υζχφ-5κζζ` or `https://xn--v01baa.xn--vv4b11d.xn-ok0b606b/`엠와이씨오/씨지아이-비아이엔/에스엔디/삼육사사오-비케이케이에스-와이젯씨에프-오케이젯젯 are probably worse (and only partial).

There Must be Content

- Ability to navigate easily to things that do not exist

- Users do not want to navigate, they want to find things of interest

- Mechanisms for entering, transmitting, and presenting normal-language text
  - Internet elements have been in place for a decade
  - Local elements may be an issue

Local Elements

- Character coding
  - Good if part of single international standard – Unicode
  - But, for content, other possibilities if needed
- Keyboards
- Screens and Printers
- Localized Operating System
- Localized Applications
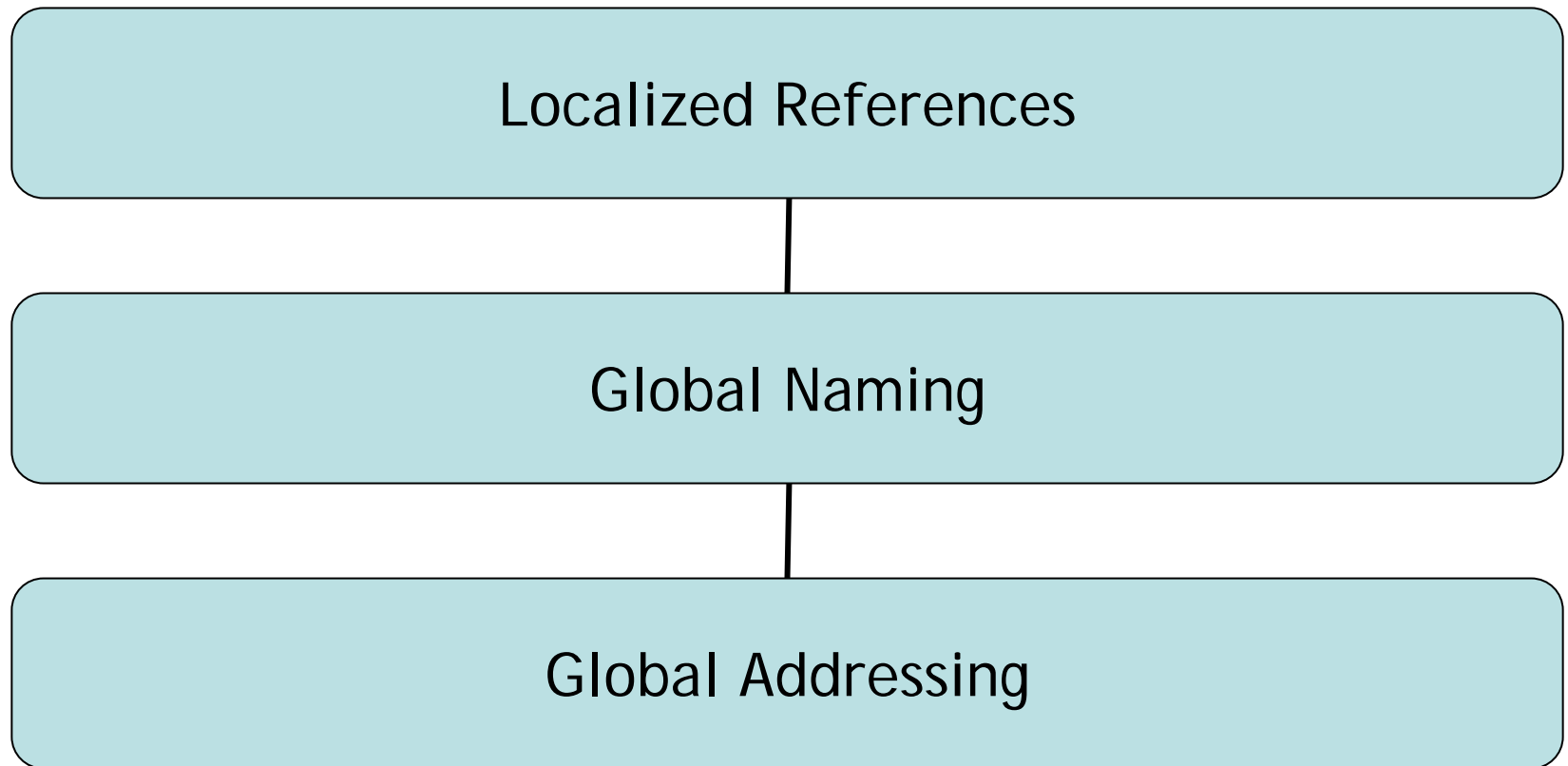
Lessons from the 1980s

- Network Protocols that are
  - Simple
  - Have few or no options
  - Announce any options in-band
- Are able to
  - Be implemented
  - Interoperate smoothly
  - Spread quickly if useful

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Complex Designs

- Often
  - do not interoperate well
  - require extensive coordination to deploy
  - take a long time and large investments to develop and deploy
  - take even more time to achieve smooth multi-vendor interoperation
- Rarely able to displace a simple, deployed predecessor even if superior.

Layering Works
...as long as it is not too complex

Localized References

Global Naming

Global Addressing

Thinking about Names

- Presentations to user are always abstractions

- Global naming is always a compromise with either

  - Culture and correctness   ...or...
  - Simplicity

- Local, user-appropriate, names/ references over specific global structure?

What About Domain Names and URIs?

- Names themselves
  - Do not get too excited
  - Good as mnemonics
  - Well-formed phrases, or even just words can be problematic
  - May be the answer to the wrong question
  - Users rarely use domain names (!)
- And URIs are a horrible user interface

Where to do the Work

- Many complex problems
- The most interesting and difficult ones go to the very roots of culture, cultural preservation, and languages
- Duplication of effort, or overlapping efforts, waste time and resources, even with coordination.
- If something is historically reasonably well handled in one place, should need compelling reasons to initiate overlapping work elsewhere.

Conclusions and Recommendations

- Local Content is critical

- Localization of Navigation and Facilities

  - Above, not instead of, global naming & addressing

  - Freedom to develop all the good local ideas possible

  - Get things right culturally without compromise with the rest of the world

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Local Users, International Context

- Users who switch contexts
  - need to understand them
  - good tools will help
- Preservation of a global network,
  - without gateways and information loss
  - without national profiles
  - is key to world communication and economic development

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