

Digital Divides: Distance and Proximity in the Age of the Internet

Professor Ed Steinmueller

SPRU – Science and Technology Policy Research

University of Sussex

UK

Prepared for the Conference

‘ICTs and Inequalities: The Digital Divides’

Paris, 18-19 November 2004

By the very title of this conference we recognise that there are many digital divides ...

- Those who have access to advanced infrastructure and services and those without.
- Between designers and users of systems
- Between those that have developed the cognitive abilities to use ICTs and those who have not

The 'catalogue' of potential divides is large...

Is the Internet simply illuminating the 'fractured' quality of all societies?

- The 'inevitability' of division supports passivity
- Structural disadvantage is real
- The size of this disadvantage has a symmetric relationship to the advantages provided by being on the 'right side' of the divide
- It is therefore possible to overstate the disadvantage by over-stating the advantage
- We have had a very long period of over-stating the advantages

What does 'structural disadvantage' mean?

- Infrastructure quality differences
- Network usage costs
- Subscription and related fees for ISP connection
- Density of social networks supporting use

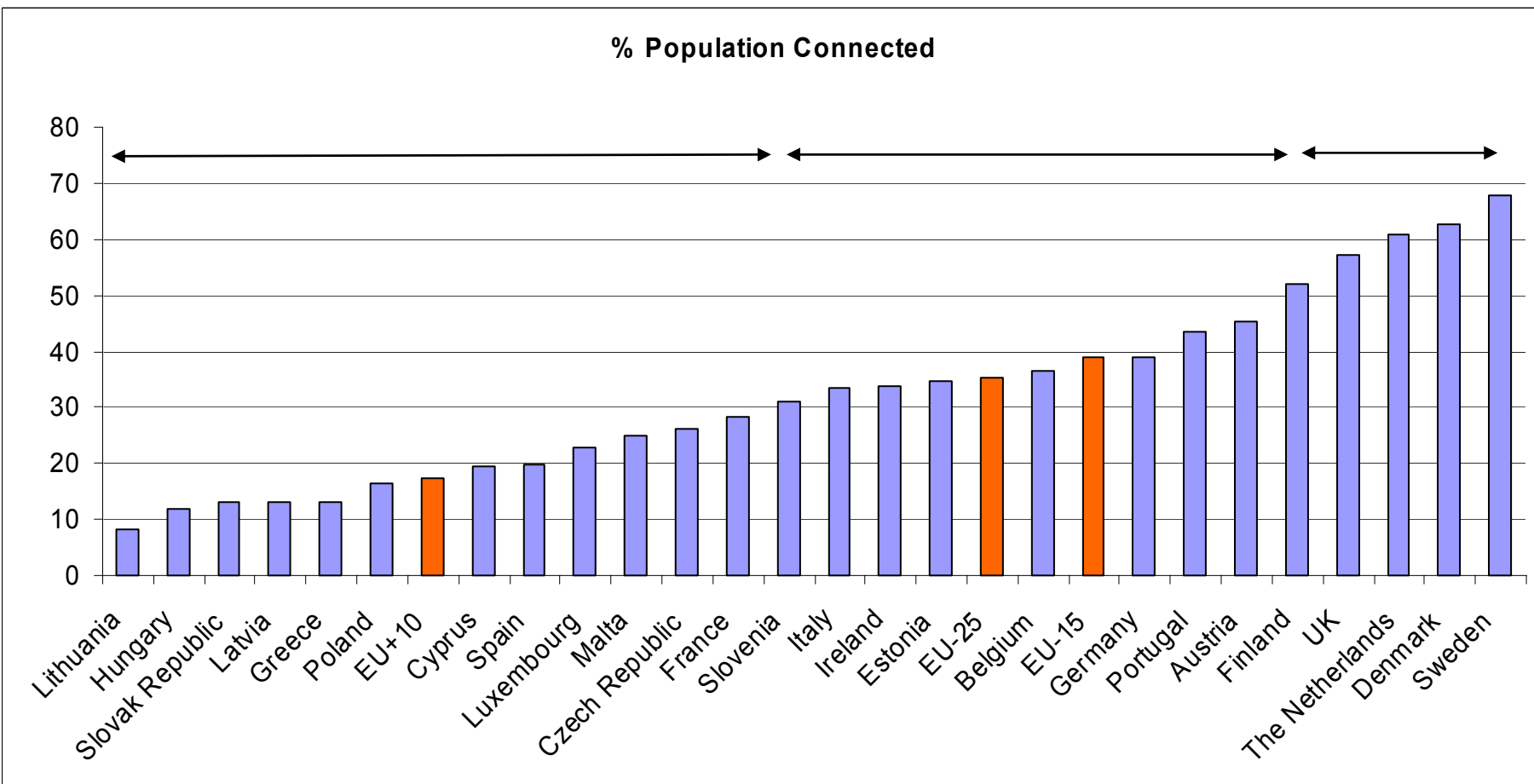
The 'Slowdown' in Growth

	Number of People Online (in Millions)			Compound Monthly Growth Rate	
	Mar-99	Mar-00	Sep-02	3/99 to 3/00	3/00 to 9/02
Africa	1.1	2.6	6.31	0.07	0.03
Asia/Pacific	27	68.9	187.24	0.08	0.03
Europe	40.1	83.4	190.91	0.06	0.03
Middle East	0.9	1.9	5.12	0.06	0.03
Canada & US	97	136.9	182.67	0.03	0.01
South America	5.3	10.7	33.35	0.06	0.04

Source: NUA Internet Surveys http://www.nua.ie/surveys/how_many_online/index.html

European disparities

Internet Users as Share of Population



Source: NUA, http://www.nua.com/surveys/how_many_online/europe.html, as elaborated by SPRU INK.

The Problem of Skills

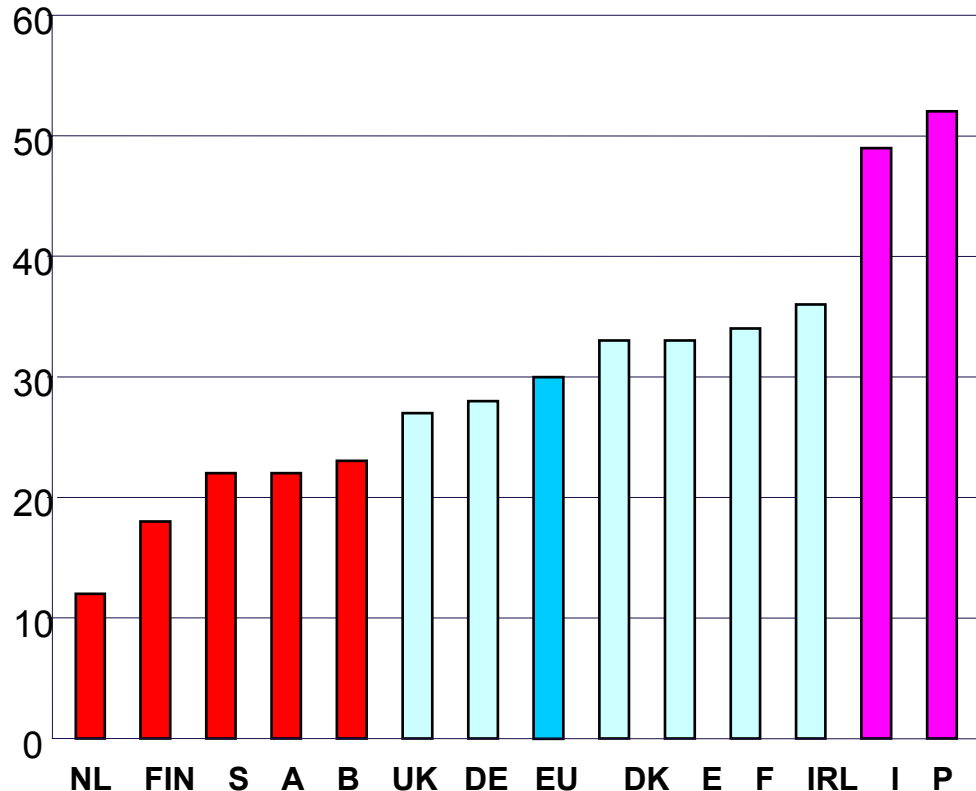
Where do skills come from?

To what extent can skills be self-taught?

New skills = new people?

Skill and capability divides

Percentage of Women Mathematics and Computer Science Graduates, 1996/9



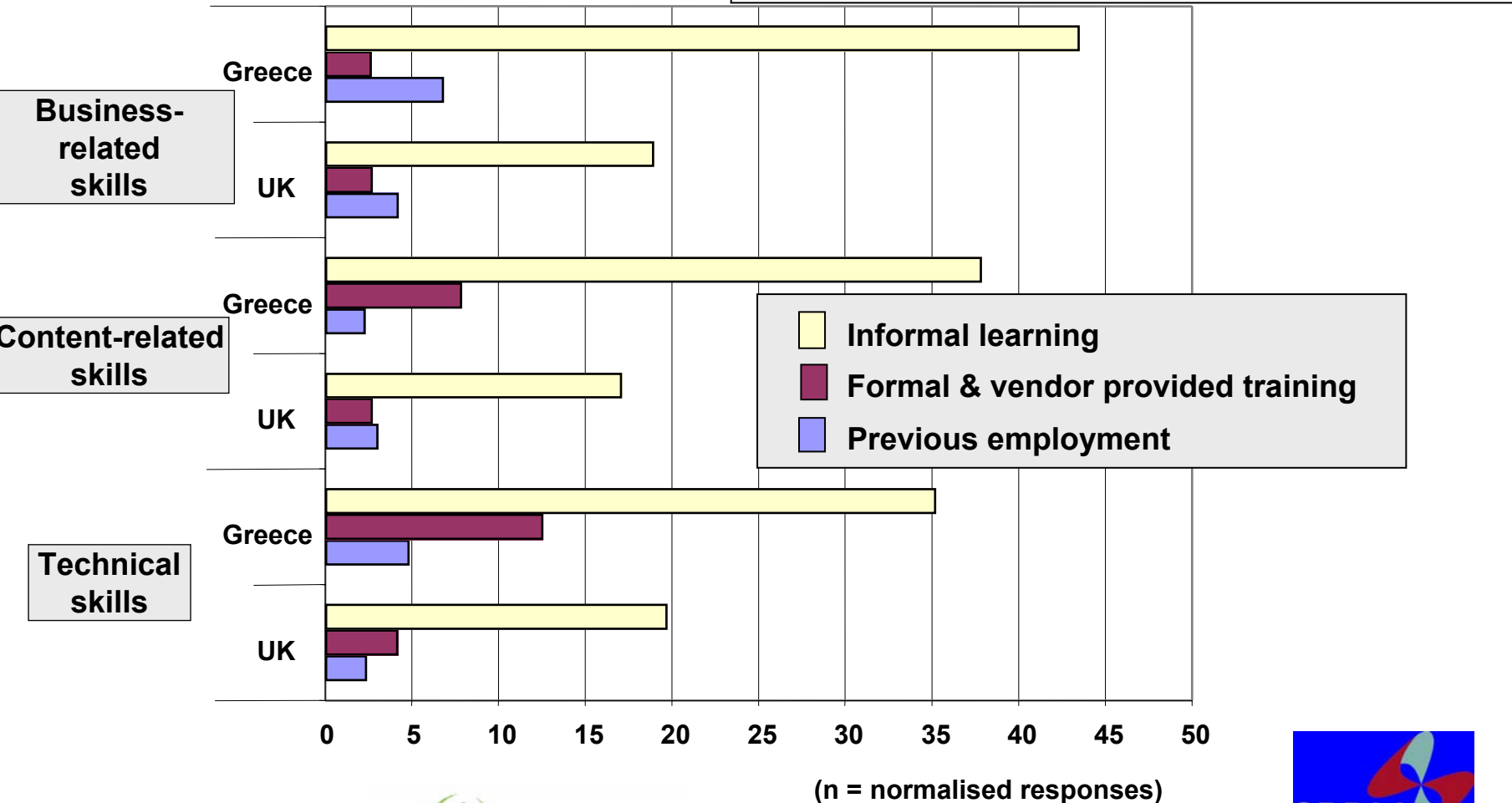
NL	The Netherlands
FIN	Finland
S	Sweden
A	Austria
B	Belgium
UK	United Kingdom
DE	Germany
EU	EU Average
DK	Denmark
E	Spain
F	France
IRL	Eire/Ireland
I	Italy
P	Portugal

Source: Eurostat, Education Across the European Union: Statistics and Indicators as elaborated by J. Millar at SPRU INK

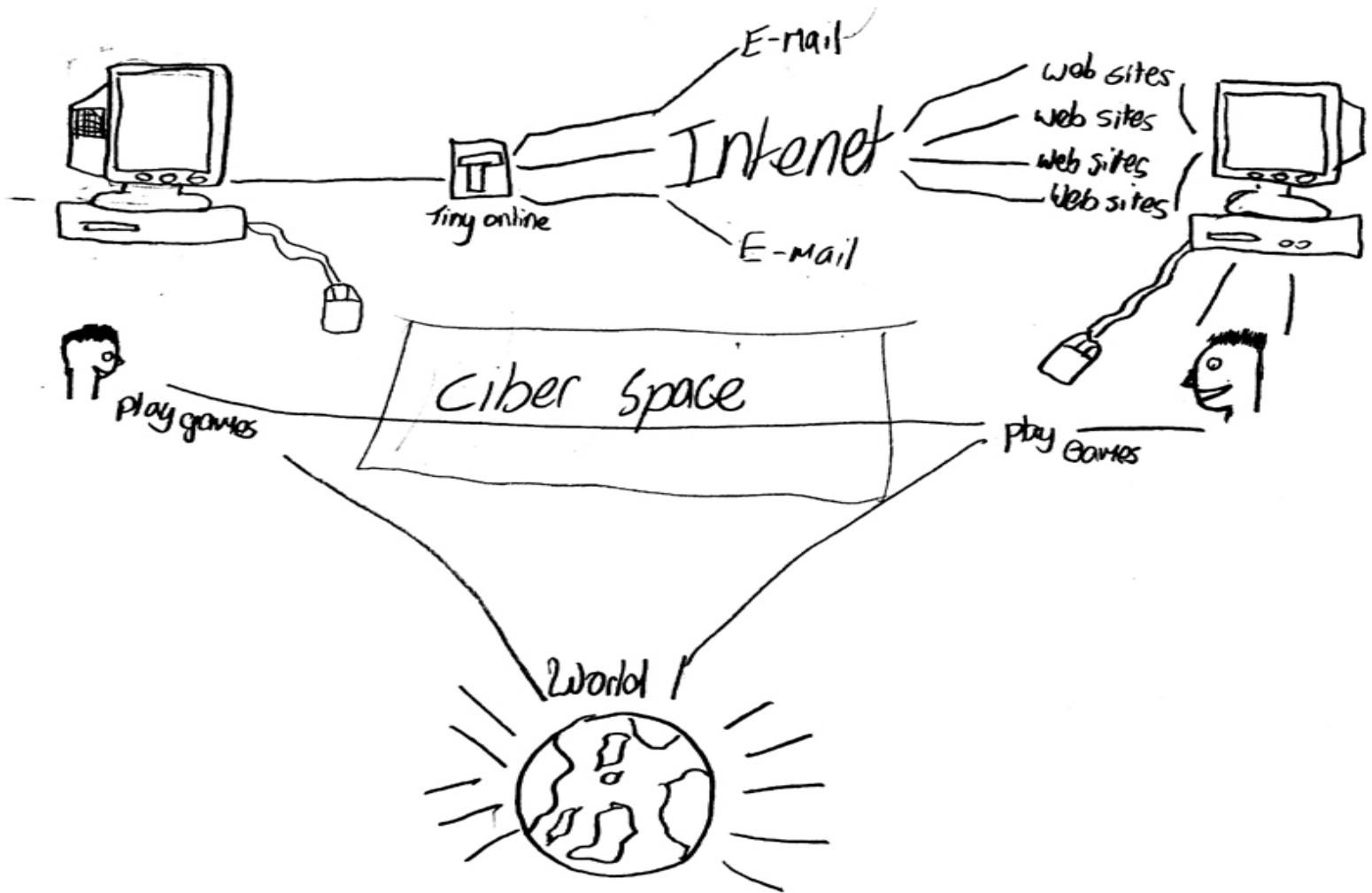
Emerging skill profiles ..

Sources of Web-manager's Skills

SPRU INK and Media@LSE, STAR Executive Briefing, 'Skills, Employment and the Digital Economy,' www.databank.it/sta



The younger generation

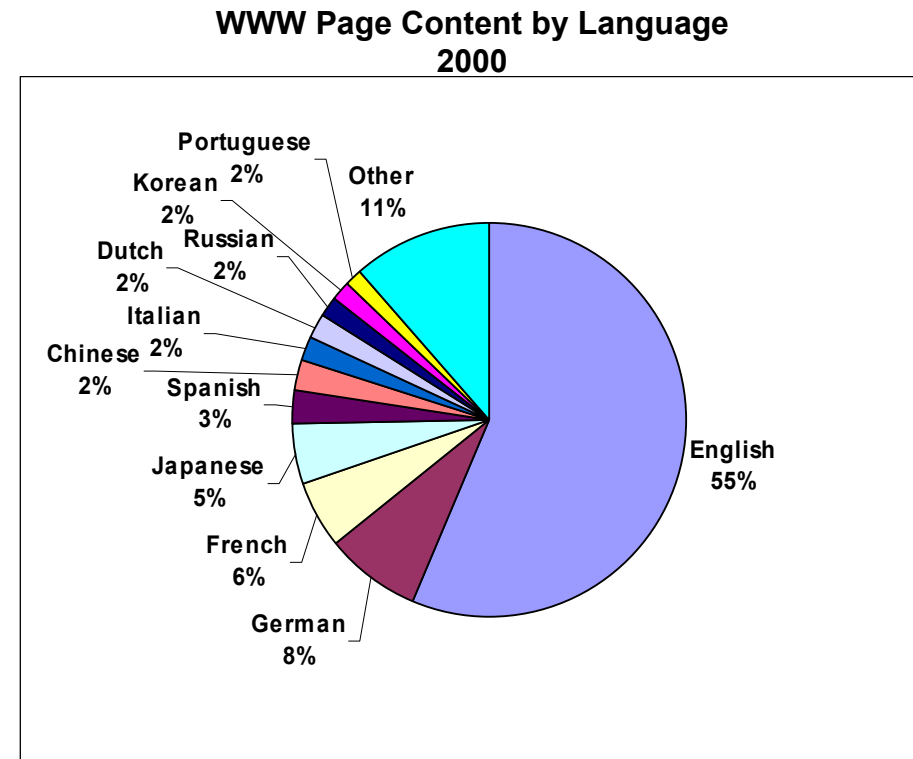
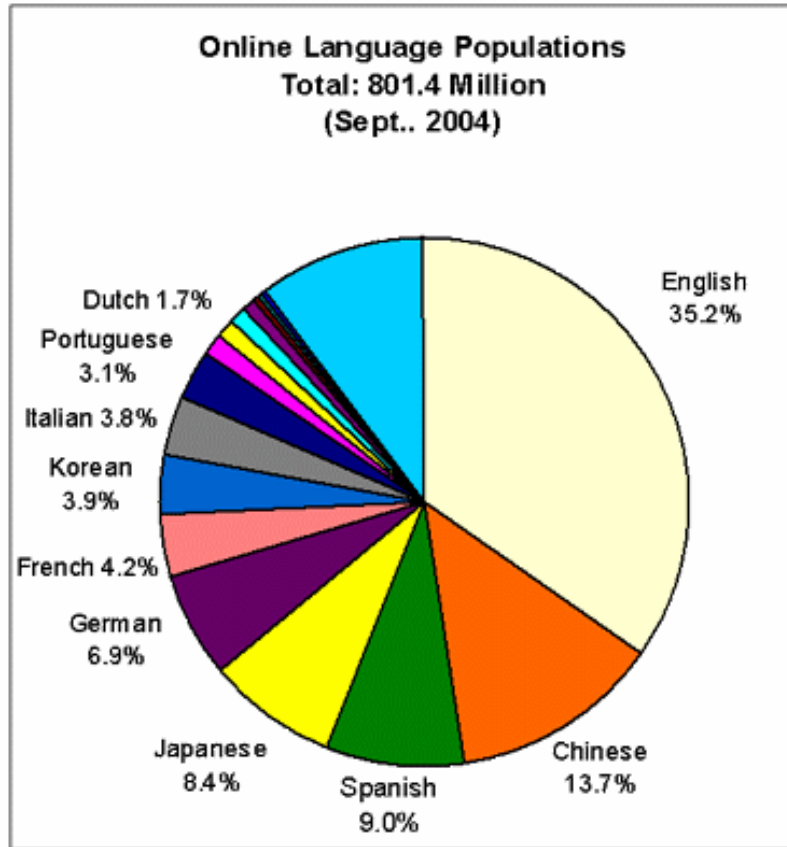


Language divides ..

- Predominance of English content.
- English -- between *lingua franca* and Latin as common language
- Prospects for language engineering software and automatic translation, voice recognition.
- Reinforcement of English in scientific communities.

Internet users – WWW Language

User Languages versus Web Page Content Language



Source: Netz.TIPP.de <http://www.netz-tipp.de/sprachen.htm>

Source: Global Reach, <http://www.glreach.com/globstats/>

Other Traditional Indexes of Digital Divides

- Status differentials (the Internaut, Nethead, Wizards, Sages, etc.)
- Urban and rural divides
- Disabled and elderly
- Unemployed

All of which is to say – the Internet illuminates all of the fractures in our societies – these fractures define 'distance'

But is this all of the story? ...

'Lost in cyberspace?' – Find your way with ... the search engine story and portals for every interest

---But are these really what people want?

- The continued strengthening of chat and web messaging
- The growth of 'affiliation' and 'special interest' virtual communities including gaming
- 'Behind the gate' – the growth of password protected sites

The Dark Side

The need to communicate with others leads to some very questionable 'matches'

Assisted or group suicide

The extended 'hunting range' for the pedophile and other exploiters

Extremists of all persuasions ...

Proximity and Social Connection

Interest in online communities relative to the local density of people with similar interests

High degree of local interest can also provide a basis for 'interconnection' to others – the role of mediation

Trust is an issue, as is the continuation of interaction

Suggests the need to think specifically about 'epistemic' communities – those where a common purpose is served

Quarrels about 'Community'

A minimalist definition of a virtual community is simply that users are able to communicate with one another

How they use this capacity will vary enormously – use for a common purpose makes an epistemic community

It is very difficult, however, to gauge the value of interconnection to any of the individual participants

It is appropriate (in my view) to look at
persistence and intensity of interaction
emergence of 'authority' and/or norms
as a means to gauge whether a significant
number of people are 'engaged' in the 'community'

Examples of Epistemic Communities

Open Source Software

Open Source Techniques Applied to Other Tasks
– e.g. Wikipedia

Hobbyist and interest sites

Gaming communities

Others

Problems of Epistemic Communities

Membership authority – who can be excluded and how to define the community norm of social responsibility

Procedural authority – who gets to decide what is done

Emergence of hierarchy centred on founder and extending to lieutenants

Successful communities extend the control further but do not abandon hierarchy

Branching or 'fission' – the dynamics of maturity and decline

Specific Advantages of Epistemic Communities

Pre-constructed 'boundary objects' that can bring individuals into common discourse

Boundedness of purpose

Obvious need for authority to deal with disruption and conflict

Limitations of Epistemic Communities (1)

The weaker the purpose of the community (e.g. facilitated discourse or 'forums') the more likely that personality will become a central issue

- Selectivity bias – those with the time and inclination to 'interact' without consequence (action to follow words) aren't very attractive to others
- Quarrels over 'rights' to membership and influence of process are more likely and more deadly

Limitations of Epistemic Communities (2)

Outcomes that must take account of non-intrinsic interdependencies (e.g. that what is being created will have to 'fit' with other things) will be difficult to achieve

- Asymmetric information participants heightens conflicts over authority
- Suggests epistemic virtual communities better at creating variability than conformity

This is one basis for the persistence of hierarchical control and design 'authorship' -- here proximity becomes essential in several ways

Epistemic Communities as a Bridge for Digital Divides

Epistemic communities provide a motivation for 'joining' with others

Their purpose need not be 'universalist' as is the case with open source software – local purposes can work too

Epistemic communities require facilitation and leadership and this role is not yet rewarded in a systematic way

Getting better at building and maintaining such communities is one way to build a more inclusive Information Society