

World Class Universities on the Web

A network graph view of Webometrics.info

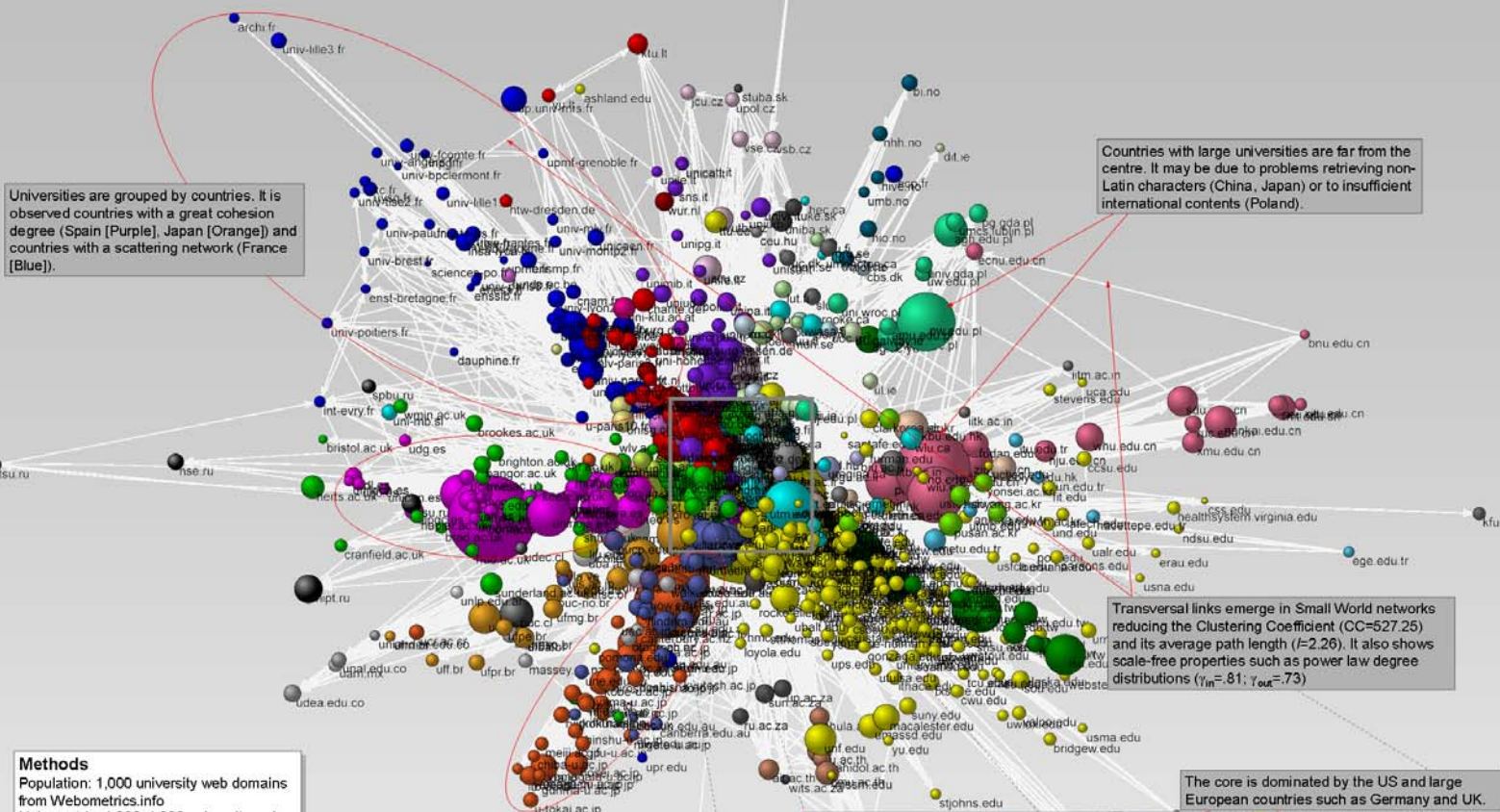
José Luis Ortega

jortega@orgc.csic.es



Isidro F. Aguillo

isidro@cindoc.csic.es



Universities are grouped by countries. It is observed countries with a great cohesion degree (Spain [Purple], Japan [Orange]) and countries with a scattering network (France [Blue]).

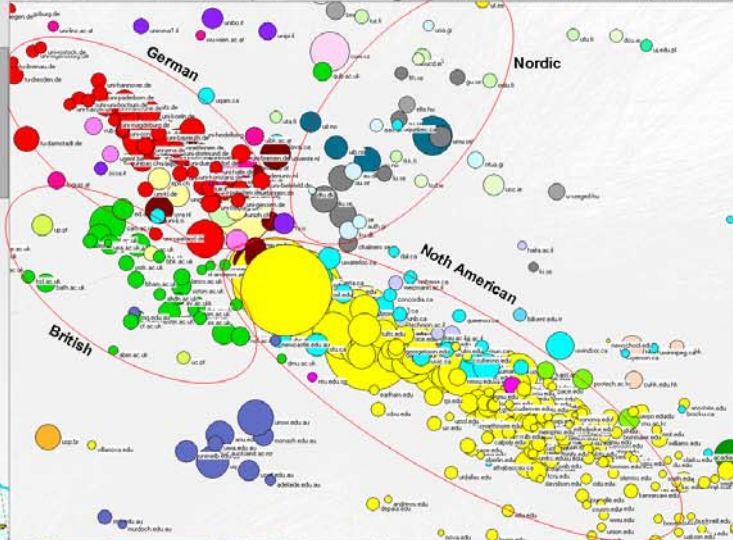
Countries with large universities are far from the centre. It may be due to problems retrieving non-Latin characters (China, Japan) or to insufficient international contents (Poland).

Transversal links emerge in Small World networks reducing the Clustering Coefficient (CC=527.25) and its average path length ($\bar{l}=2.26$). It also shows scale-free properties such as power law degree distributions ($\gamma_{in}=81$; $\gamma_{out}=73$)

Methods
Population: 1,000 university web domains from Webometrics.info
Links matrix: 1,000x1,000 university web domains from **YAHOO!** SEARCH
Attributes:
• Size: number of web pages
• Colour: country
Layout:
• Energy: Fruchterman-Reingold
• Cut-off: ≥ 50 links
Software: Pajek 1.02

The core also shows linguistic and cultural relationships. So, four clusters are detected:
• German
• British
• Nordic
• North American

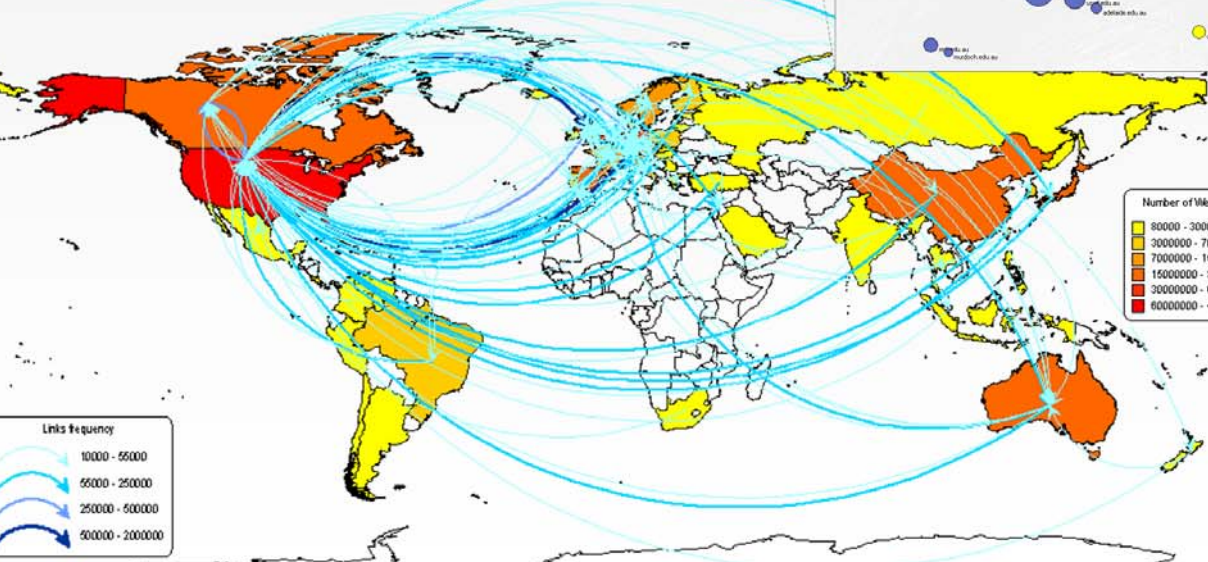
The core is dominated by the US and large European countries such as Germany and UK.



North America and Europe are the regions where most web pages are located, followed by China, Japan and Australia.

Links flows are mainly established between the US and EU countries. Other link flows are set up between the US and East Asian countries and Australia.

Notice the absence of African countries (except South Africa) and Middle East countries (except Arabia Saudi)



Number of Web Pages

- 80000 - 3000000
- 3000000 - 7000000
- 7000000 - 15000000
- 15000000 - 30000000
- 30000000 - 60000000
- 60000000 - 400000000

Links frequency

- 10000 - 55000
- 55000 - 250000
- 250000 - 500000
- 500000 - 2000000

Methods
Population: 53 countries from Webometrics.info (1,000 universities)
Links matrix: 53x53 countries from **YAHOO!** SEARCH
Layers:
• Classes: Jenks' natural breaks
• Hutch map: number of web pages
• Flow map: number of links
Software: MapViewer 6