

Sustainable Openness

Designing Cyberinfrastructure for Collaboration and Innovation

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Ensuring openness

Openness is always under threat of closure:

Fragmentation

Appropriation

Exclusion

Openness is more successful for all, but closure can be more successful for some

The success of openness

Today's cyberinfrastructure depends on openness:

open standards processes (IETF)

open source software

The success of openness

Open source software has a big share of many parts of the cyberinfrastructure:

web servers (70%: apache)

mail servers (about 50%: sendmail, exim, postfix)

scripting languages (perl, php)

domain name system

The success of openness

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- scripting languages (perl, php)

- domain name system

... and on the user side, open source products have the #2 market position for web browsers (Firefox), office applications (OpenOffice), etc

The success of openness

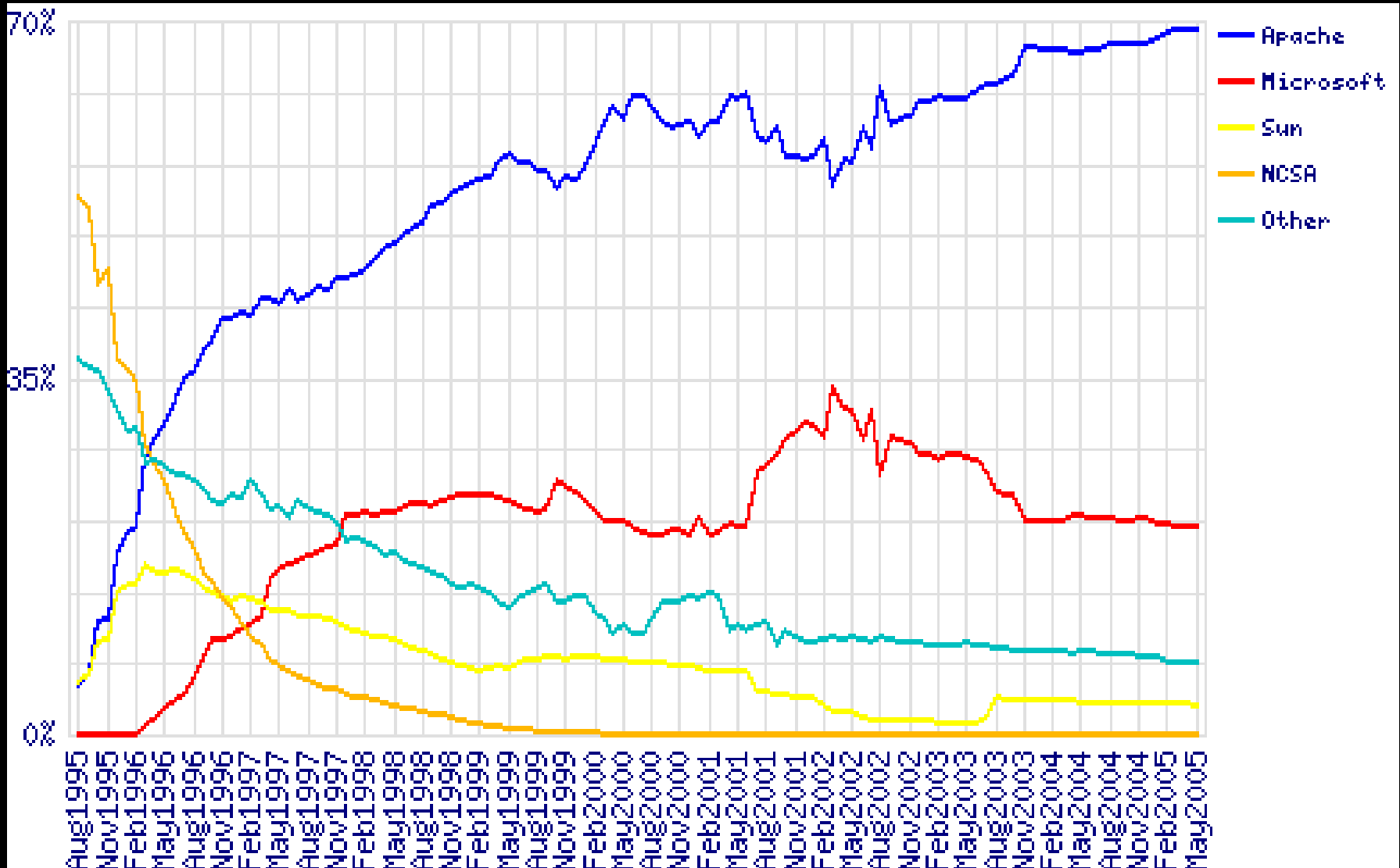
Emerging applications rely on open source

application servers (plone, zope)

“web 2.0” / AJAX

mobile VoIP (e.g. Truphone, rebtel, jajah)

Web server market share

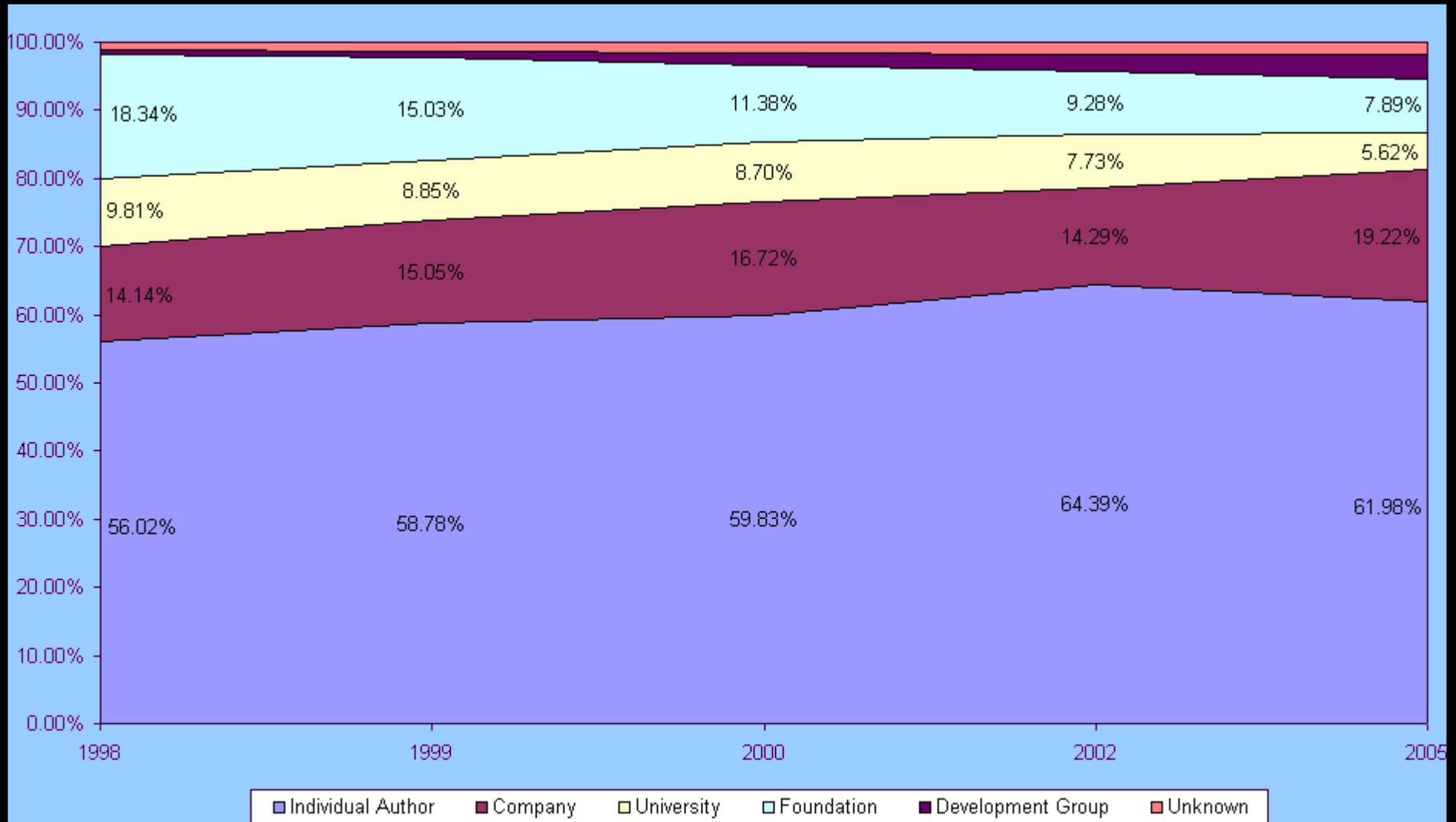


Source: Netcraft Web Server Survey, May 2005 - www.netcraft.com

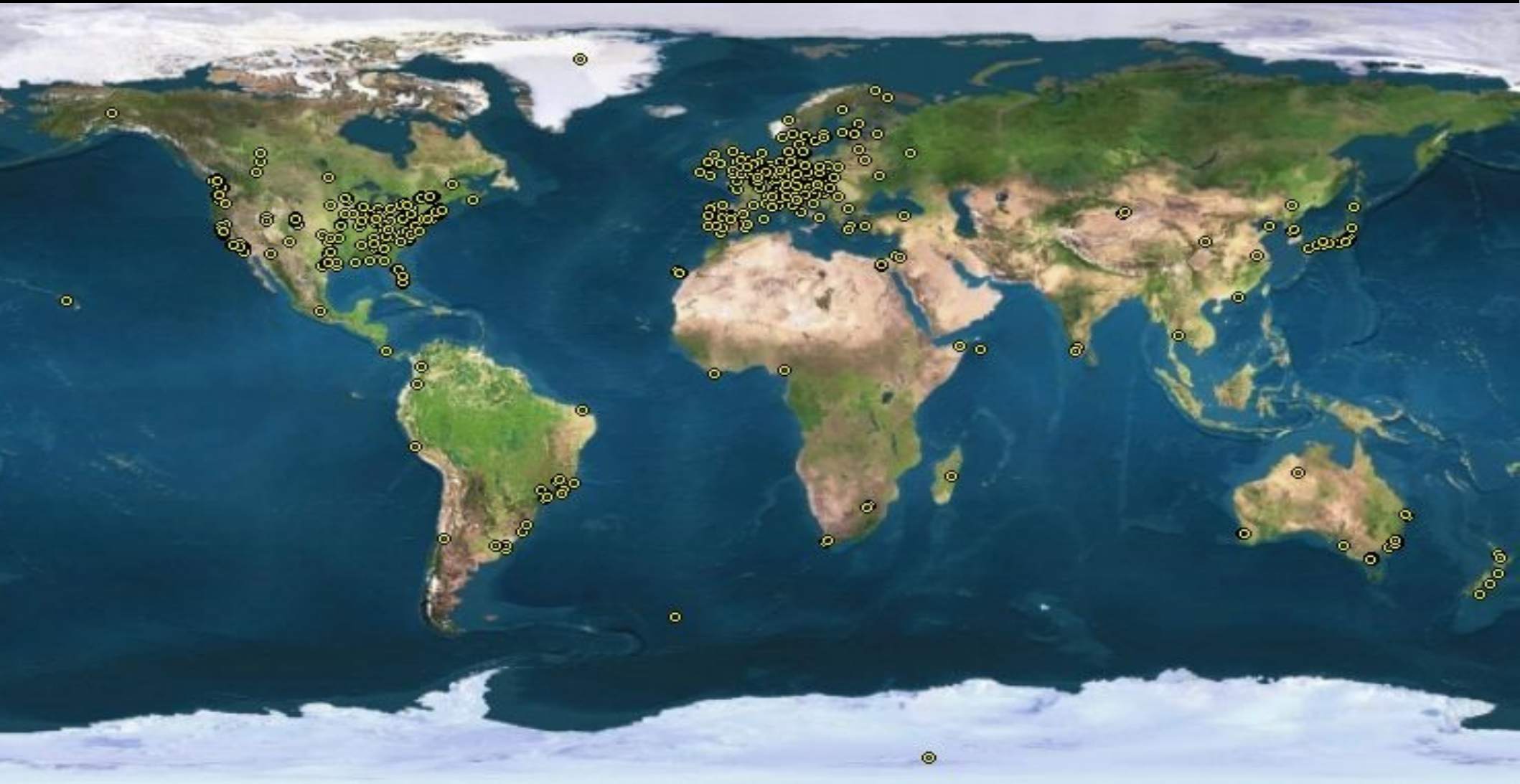
Open to whom?

Unlike most standards processes, open source is open to independent individuals in practice, not just organisations

Who writes open source?



Who writes open source?



Locations of Debian GNU/Linux leaders/maintainers

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Open processes

Join and participate

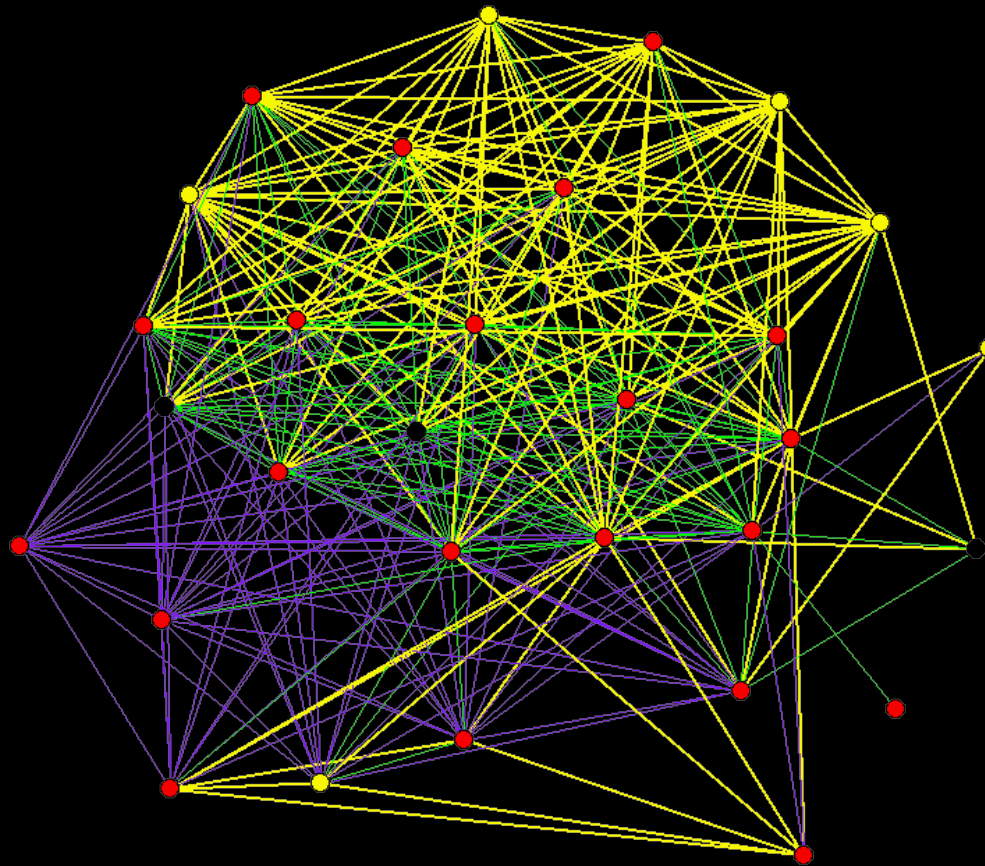
Adapt

Monitor the process openly

Ensure inflow of new participants

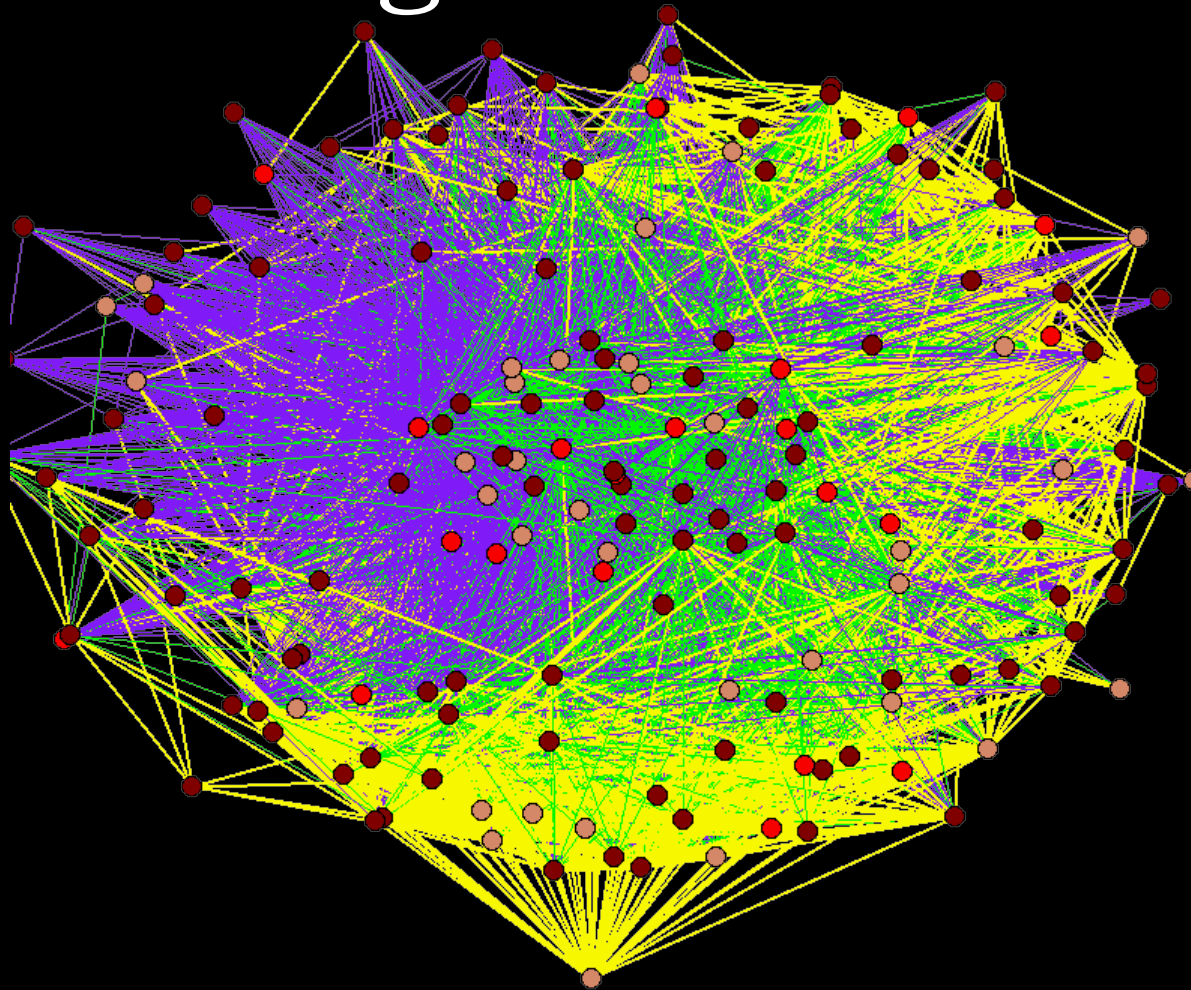
Ensure sustainability of the open process

Monitoring: the Linux kernel



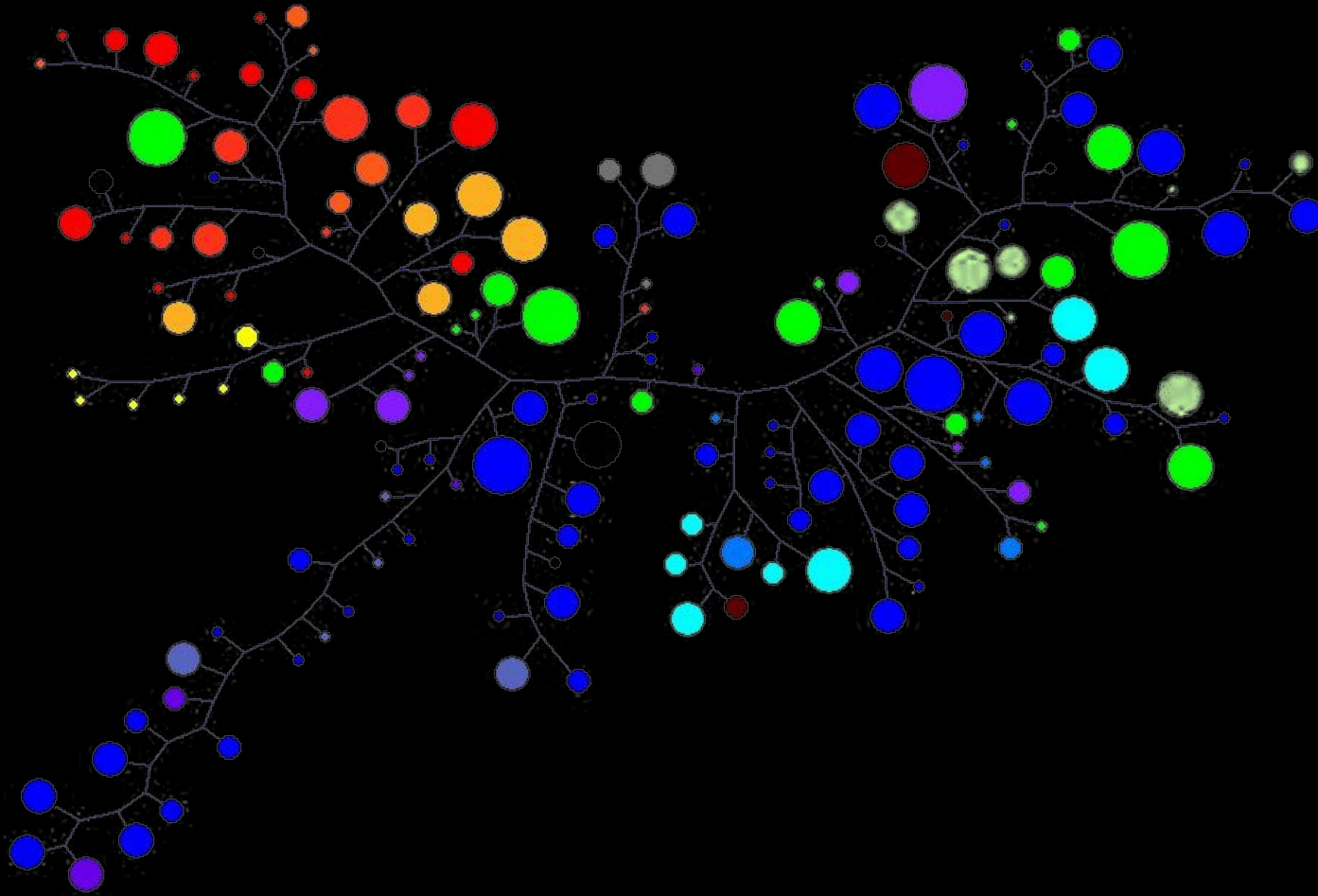
Linux kernel v1.0. 1994. 158 authors. Nodes are 30 modules. Arcs represent **common authors**, **code dependencies**, or **both**

Monitoring: the Linux kernel



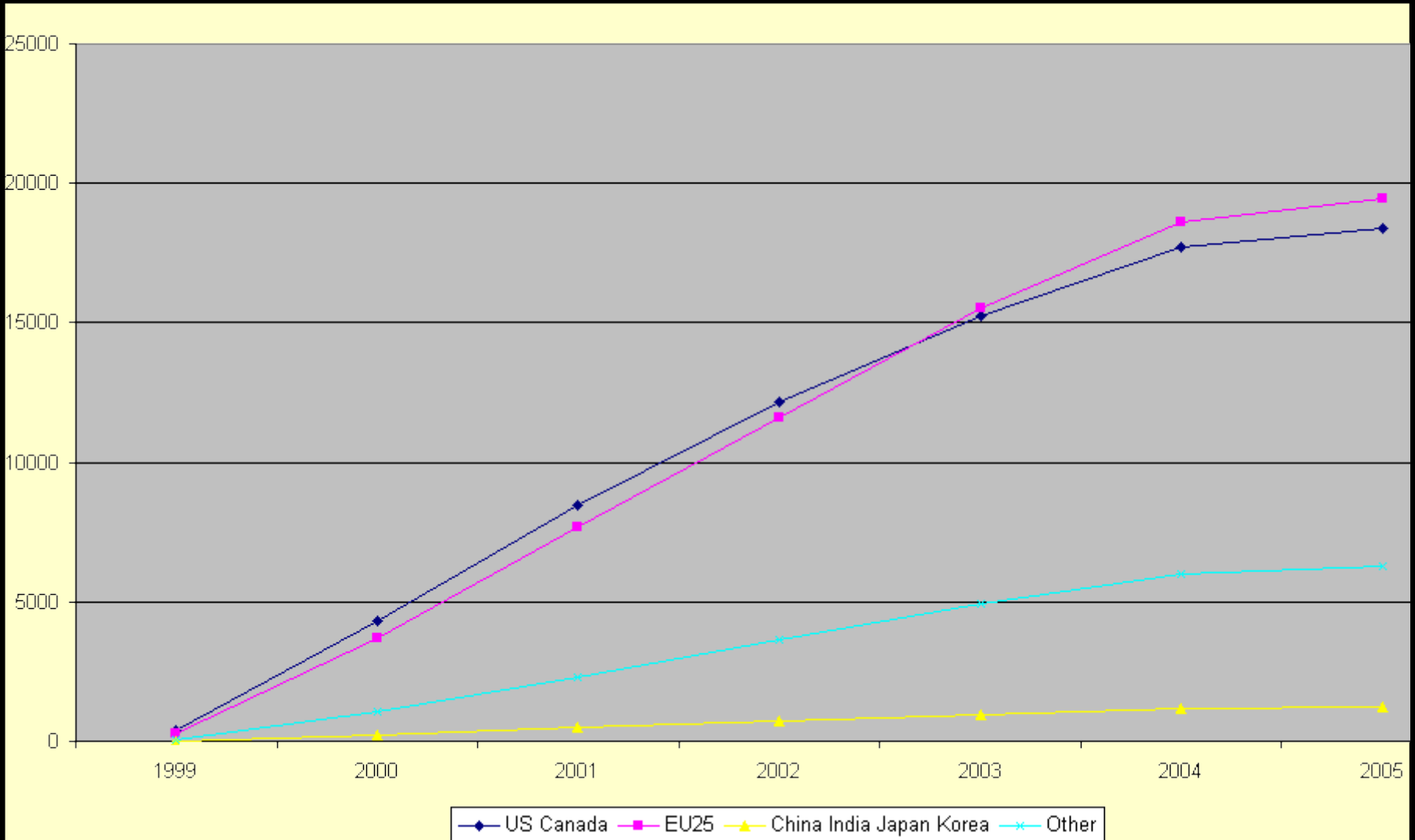
Linux kernel v2.5.25. 2002. 2263 authors. Nodes are 169 modules.
Arcs represent **common authors**, **code dependencies**, or **both**

Monitoring cliques



Apache web server, 2004. Circles are modules, coloured by type. Cluster tree shows developers' self-organisation into groups.

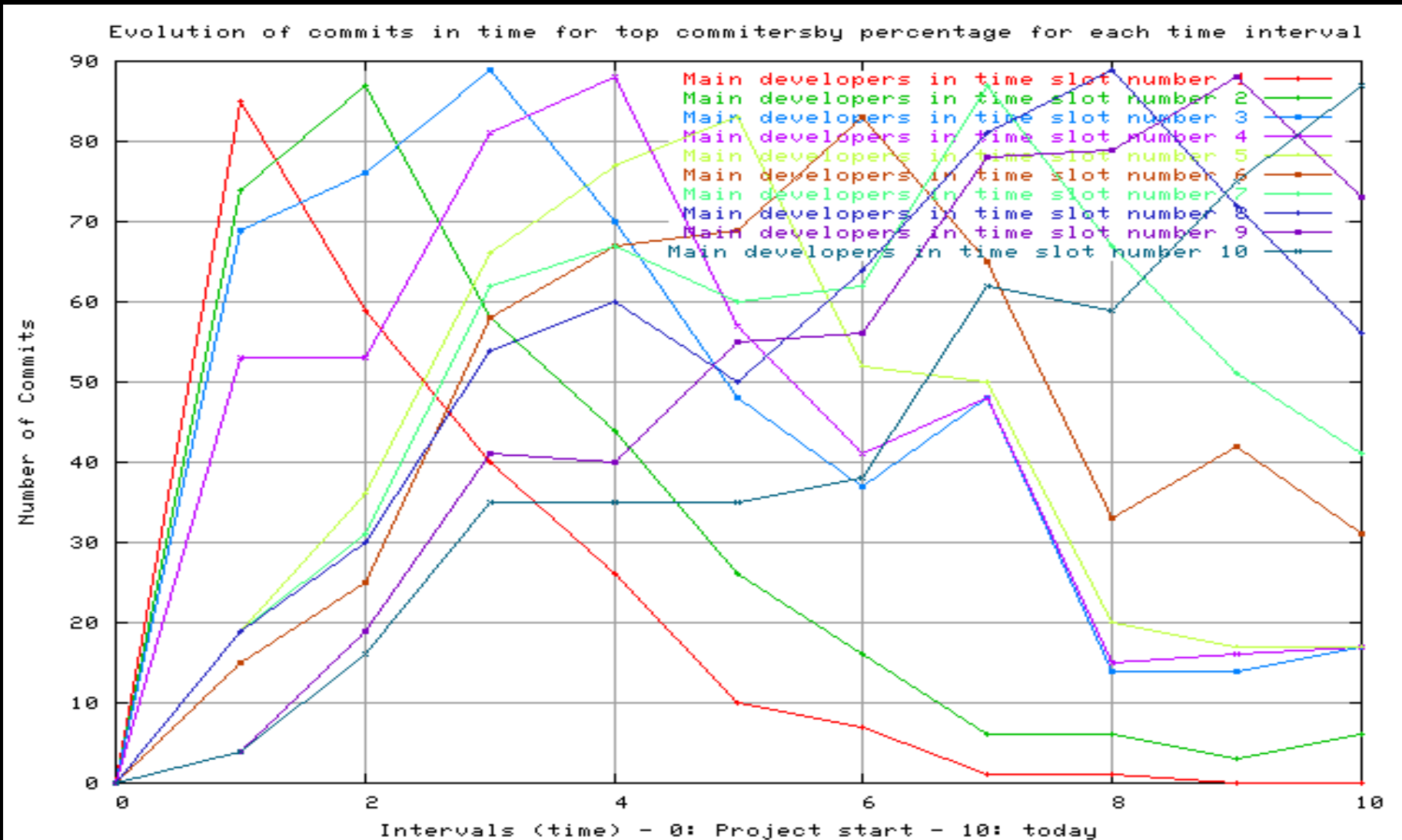
New participation



Globally active core developers (“committers”) by region, Sourceforge

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Cycling through generations



Tracking generations of “core” contributors in FreeBSD over 10 years

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Openness and economic effect

Define open standards based on their economic effect:

Ensuring a fully competitive market in producers of technology, even if a natural monopoly arises in the technology itself

Open process, open source: it works in fact, even if it doesn't work in theory?

Thank you

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FLOSS Project

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