

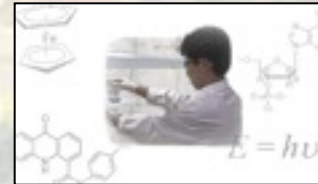
Stanford, Silicon Valley, & the Nordic Region



Stanford University

few people, many dollars

- The university opened on October 1, 1891.
- Seven schools: Earth Sciences, Graduate Education, Engineering, Graduate Business, Humanities and Sciences, Law, Medicine
- 1,934 regular academic faculty
- 6,927 undergraduate students from 52 countries
- 8,796 graduate students from 100 countries
- 2011-12 budget for sponsored research support was \$1.2 billion
- 84% from government sources



Stanford spin-offs

Over **2000 companies** started by faculty, students and alumni

Abrizio

ASK Computer Systems

Cisco Systems, Inc.

Dolby Systems

eBay

E*Trade

Electronic Arts

Excite, Inc.

Gap

Google

Hewlett-Packard

IDEO

Intuit, Inc.

Learning Company

Linked-in

Logitech

Mathworks

MIPS Technologies, Inc.

Nike

Netflix

NVIDIA

Orbitz

Octel Communications Corp.

Odwalla

ONI Systems

PayPal

Pure Software, Inc.

Rambus, Inc.

Rational Software

Silicon Graphics, Inc.

Sun Microsystems

Tandem Computers, Inc.

Taiwan Semiconductor

Tensillica

Tesla Motors

Trilogy

Varian Associates, Inc.

VMware

Whole Earth Catalog

Yahoo! Inc.

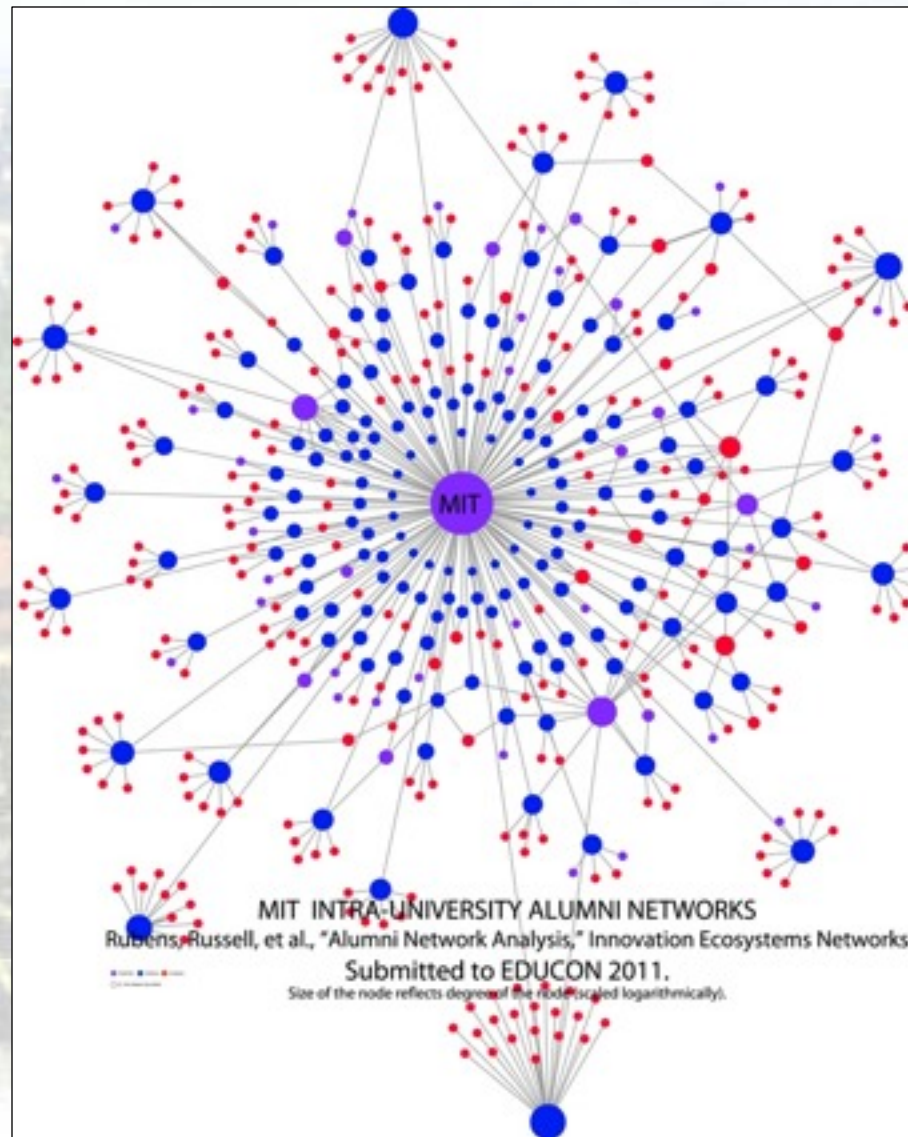
Coursera

Udacity

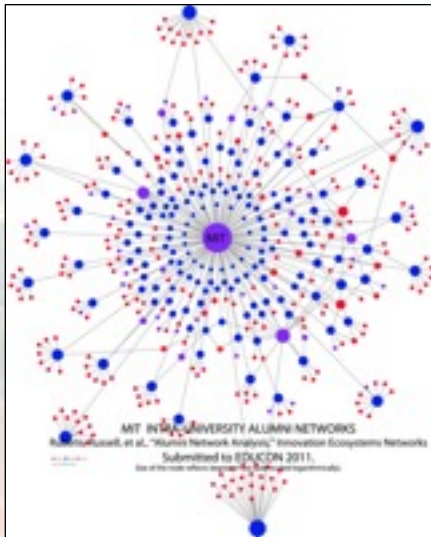
Spin-off activity



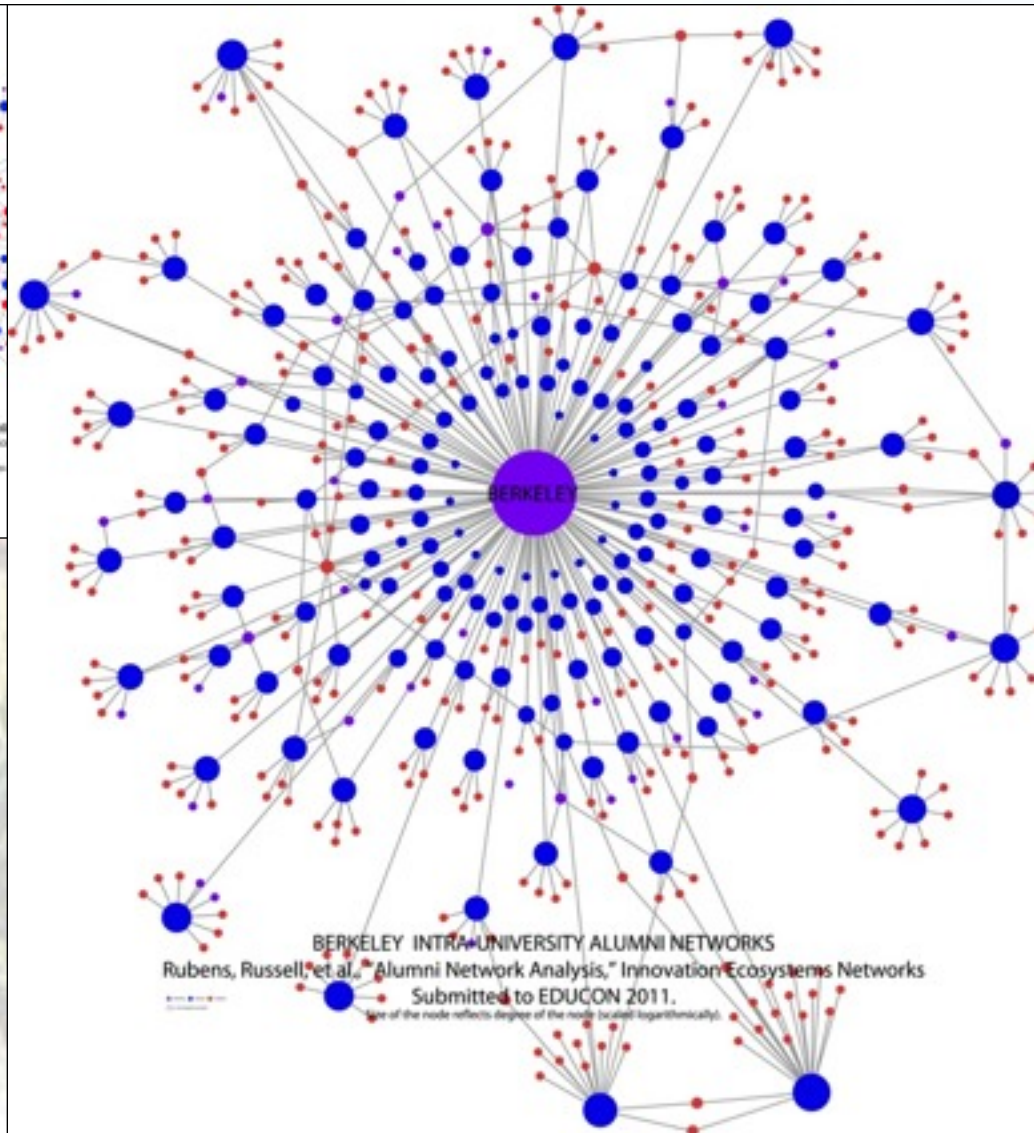
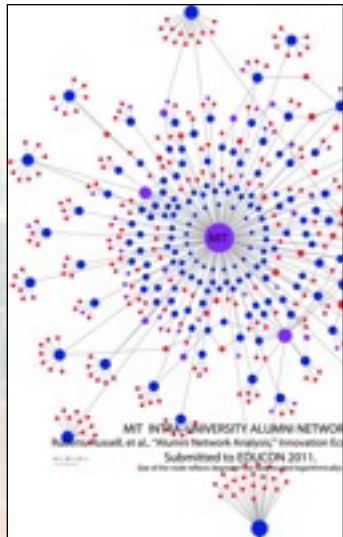
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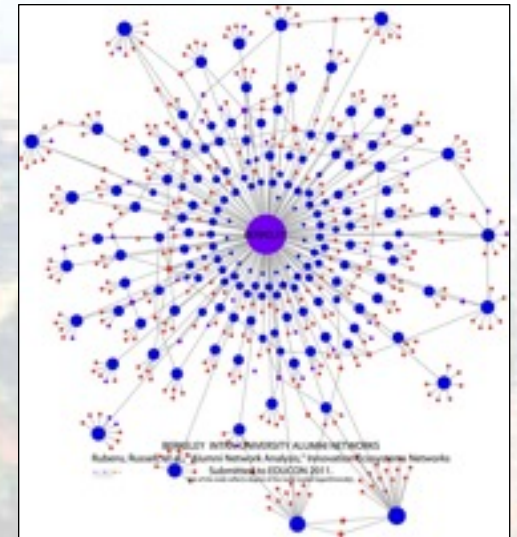
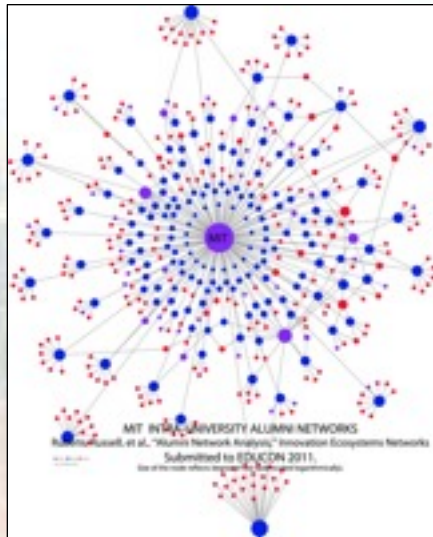
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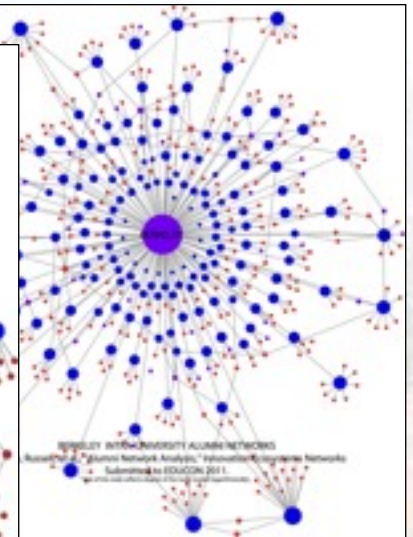
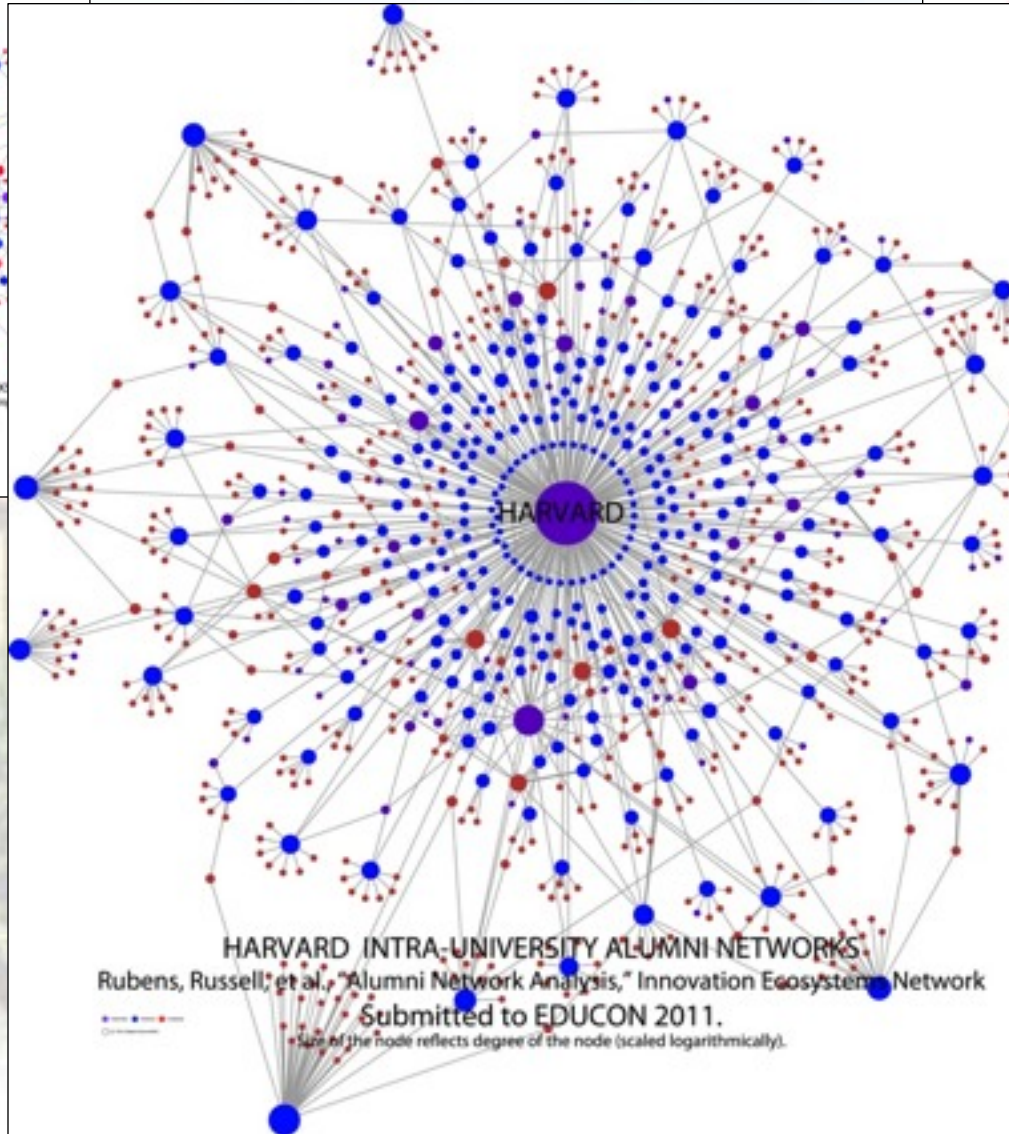
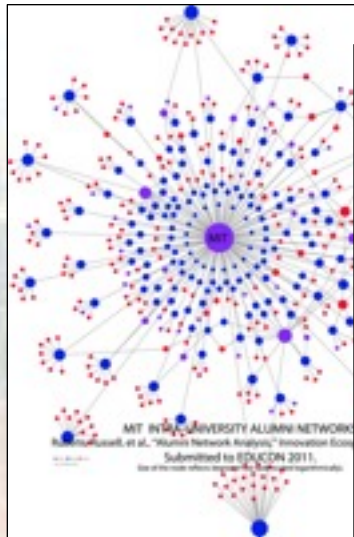
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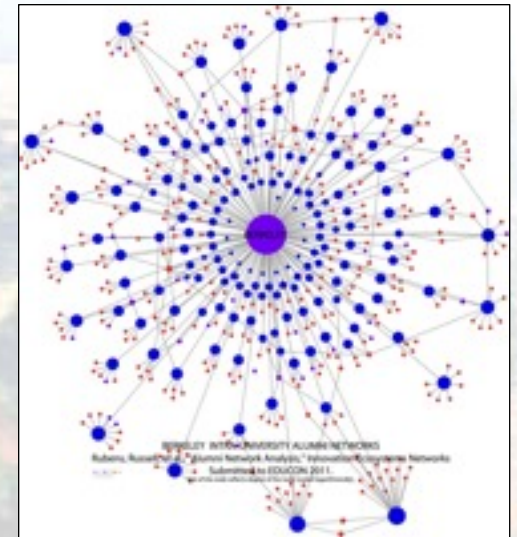
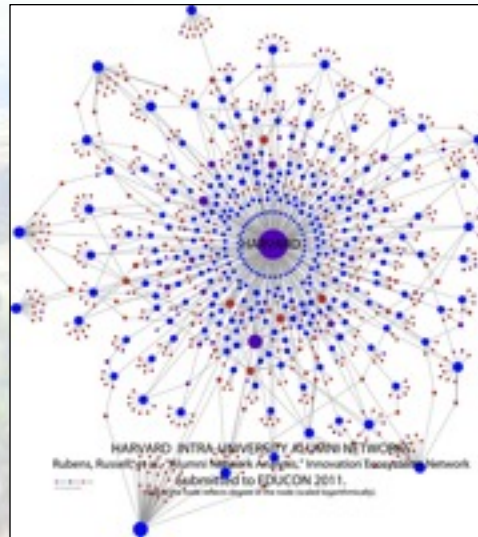
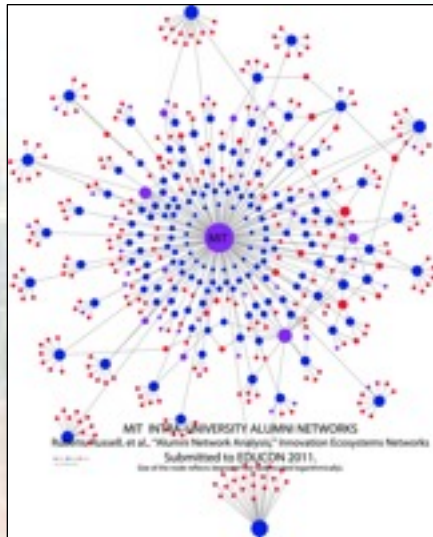
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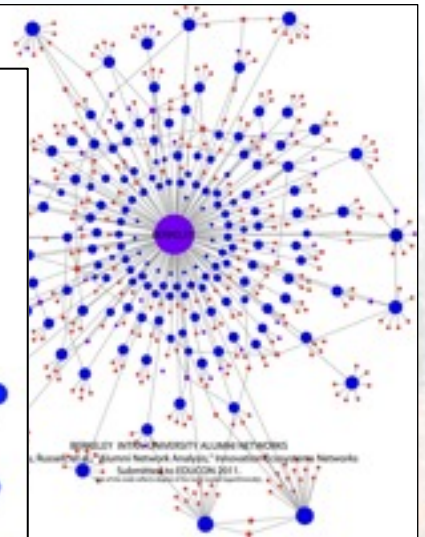
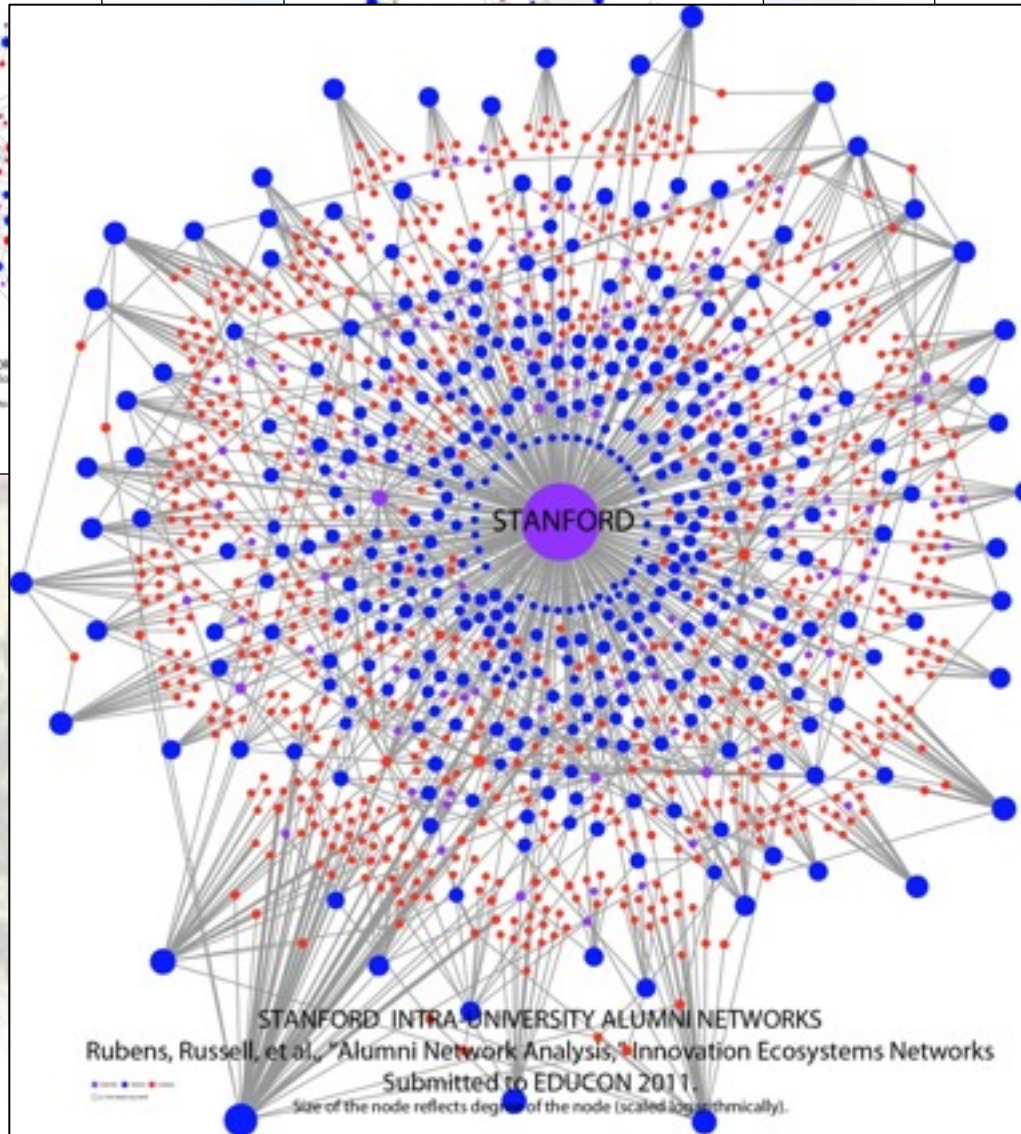
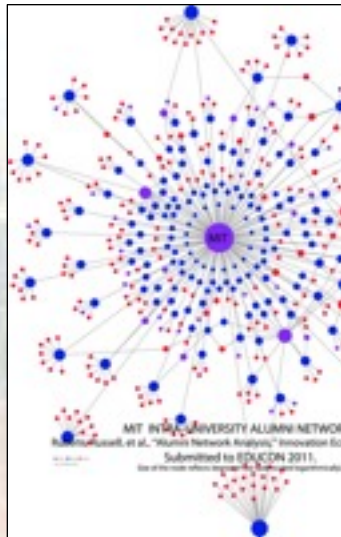
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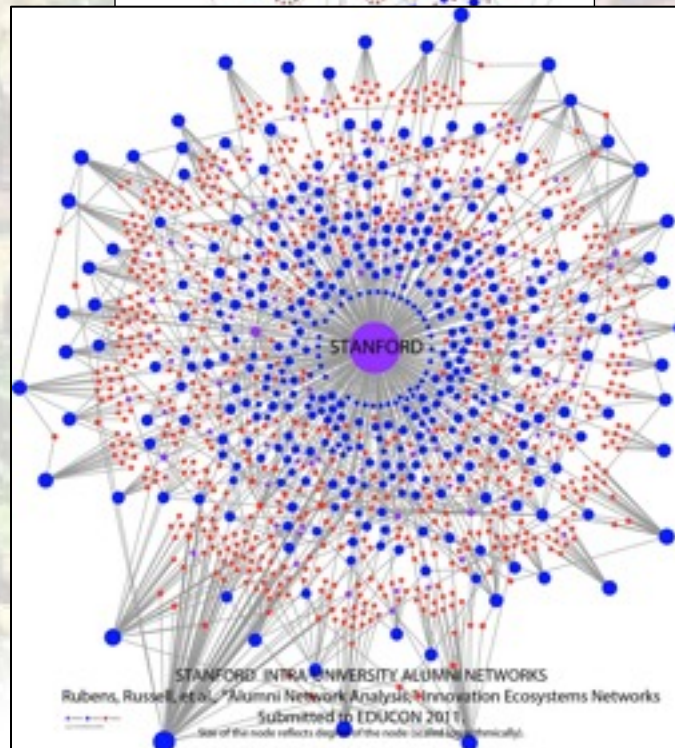
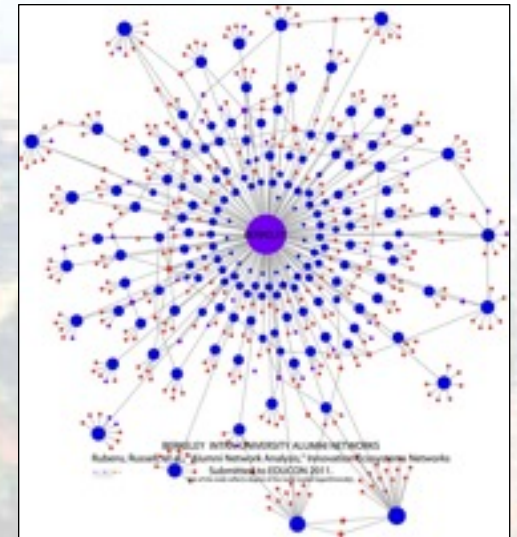
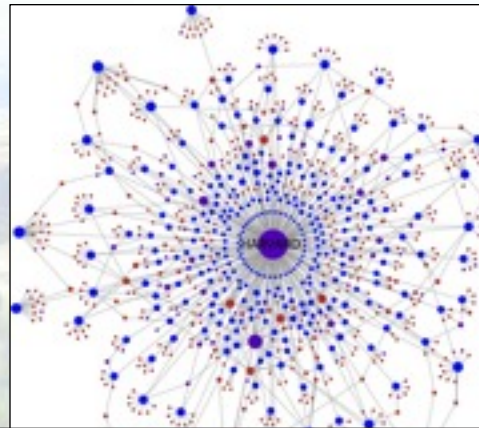
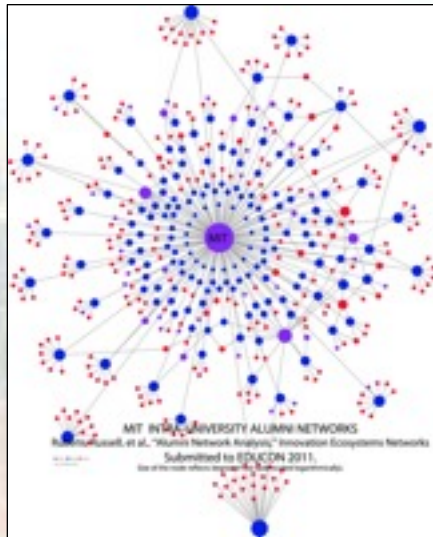
Spin-off activity



Spin-off activity



Spin-off activity



The making of Silicon Valley



One and a half accidents - but mostly a lot of central planning!

- ◆ 1865: MIT opens as an “entrepreneurial university.”
- ◆ 1941- 45: Second World War effort allows the MIT model to work (and grow).
- ◆ 1945: Frederick Terman, returns to Stanford and becomes Dean of Engineering then Provost, and sets about re-creating Stanford in the MIT mold.
- ◆ 1950 onwards - Cold War years: Start of huge growth at Stanford and in the surrounding Santa Clara Valley, led by massive government funding.
- ◆ 1956: William Shockley (inventor of the transistor at Bell Labs) moves to Mountain View, California to found Shockley Semiconductor Laboratory.
- ◆ 1957: Eight key engineers leave the company to form Fairchild Semiconductor.
- ◆ 1968: Robert Noyce and Gordon Moore leave Fairchild to found Intel.
- ◆ 1971: A journalist renames the region “Silicon Valley.”
- ◆ 1972: Kleiner Perkins moves into offices on Sand Hill Road.
- ◆ 1980: Apple IPO raises \$1.3BN. VCs, law firms, and startups move in.



Silicon Valley - the secret sauce(s)

- ▶ Geographically concentrated, very active **human network**
 - ▶ Researchers, business leaders, entrepreneurs, funders
- ▶ High density of some very big technology companies
- ▶ Powerful, wealthy university (Stanford) with a **culture** of involvement with industry and of entrepreneurial spinoffs ("**Entrepreneurial science**")
- ▶ Nearby world class, **large** state university (Cal Berkeley)
- ▶ Good **local supply** of skilled employees (San Jose State University)
- ▶ Culture of risk taking and **acceptance of failure**
 - ▶ The world sees Silicon Valley as a location of great successes
 - ▶ Here we know it is a location of a great many "failures"
- ▶ Easy access to "free" advice and assistance **at the start**
- ▶ Massive amounts of **government funding** for **basic** research
- ▶ Large amount of **private funding** to **exploit** the research
- ▶ A highly **fluid** workforce
 - ▶ You can change employer without having to move your home
- ▶ **Anyone** can play
 - ▶ Admittance and acceptance are based entirely on your ideas and abilities
 - ▶ You are only as good as your latest idea
- ▶ Attractive place to live, good climate, **tolerant and accepting culture**

Stanford and Europe

SOME NEW RESEARCH

The Role of the
San Francisco Bay Area
in European Innovation



Analysis of EIT ICT

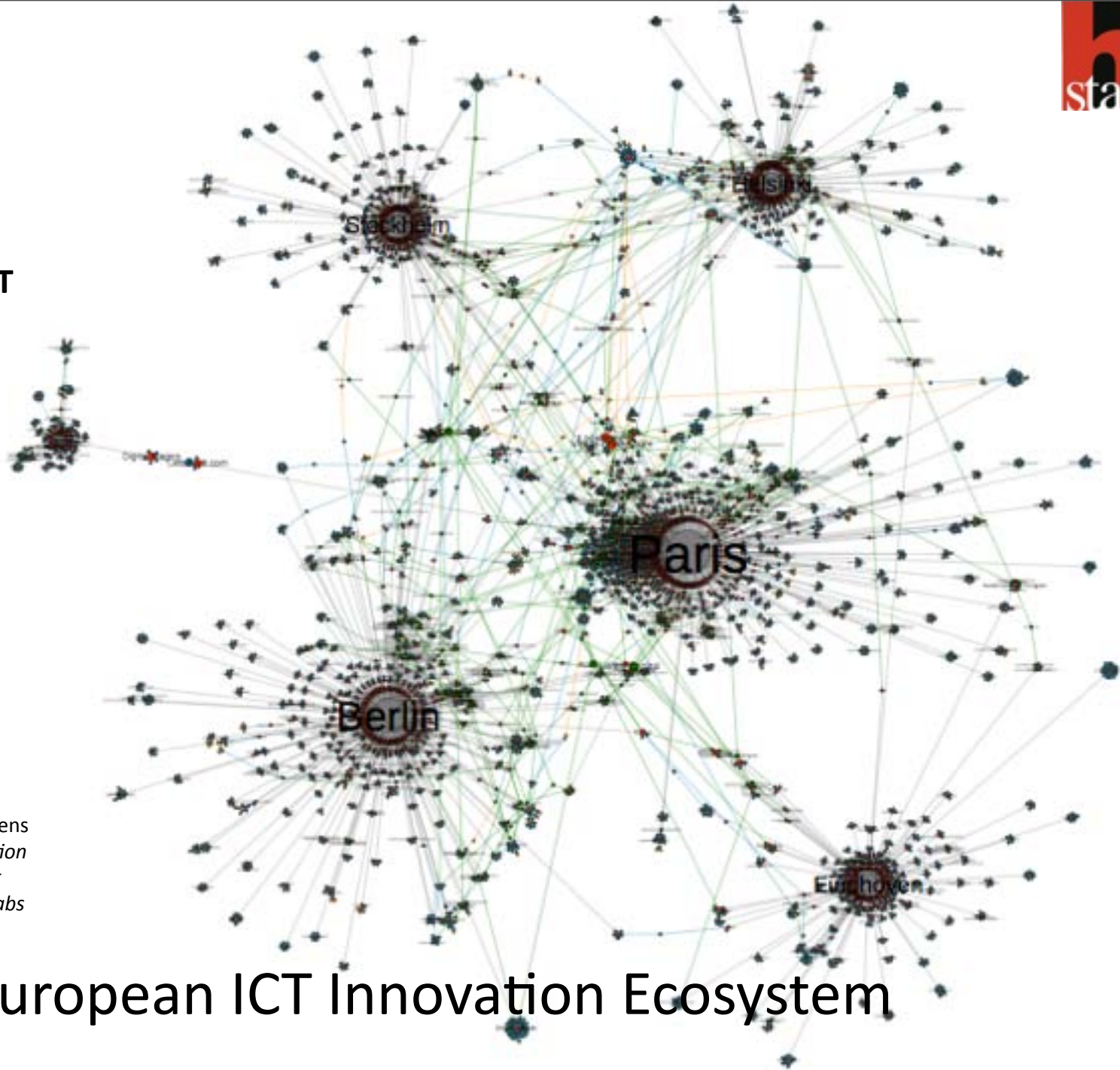
Labs (Paris, Berlin, Stockholm, Helsinki, Eindhoven, Trento).

individuals: blue

companies: red

investors: green

universities: orange



Still, Huhtamäki, Russell, Rubens
(2012). *Transforming Innovation
Ecosystems Through Network
Orchestration: Case EIT ICT Labs*

European ICT Innovation Ecosystem



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“... we were intrigued by the fact that in all of our findings, in which we were concentrating on Europe, Silicon Valley actors and their importance in connecting European actors was observed. For example, the presence of Intel Capital (financial actor) and Harvard and Stanford (educational actors) was perceived through our visualizations as well as through the metrics that are the basis for the visualizations.

European ICT Innovation Ecosystem



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European ICT Innovation Ecosystem





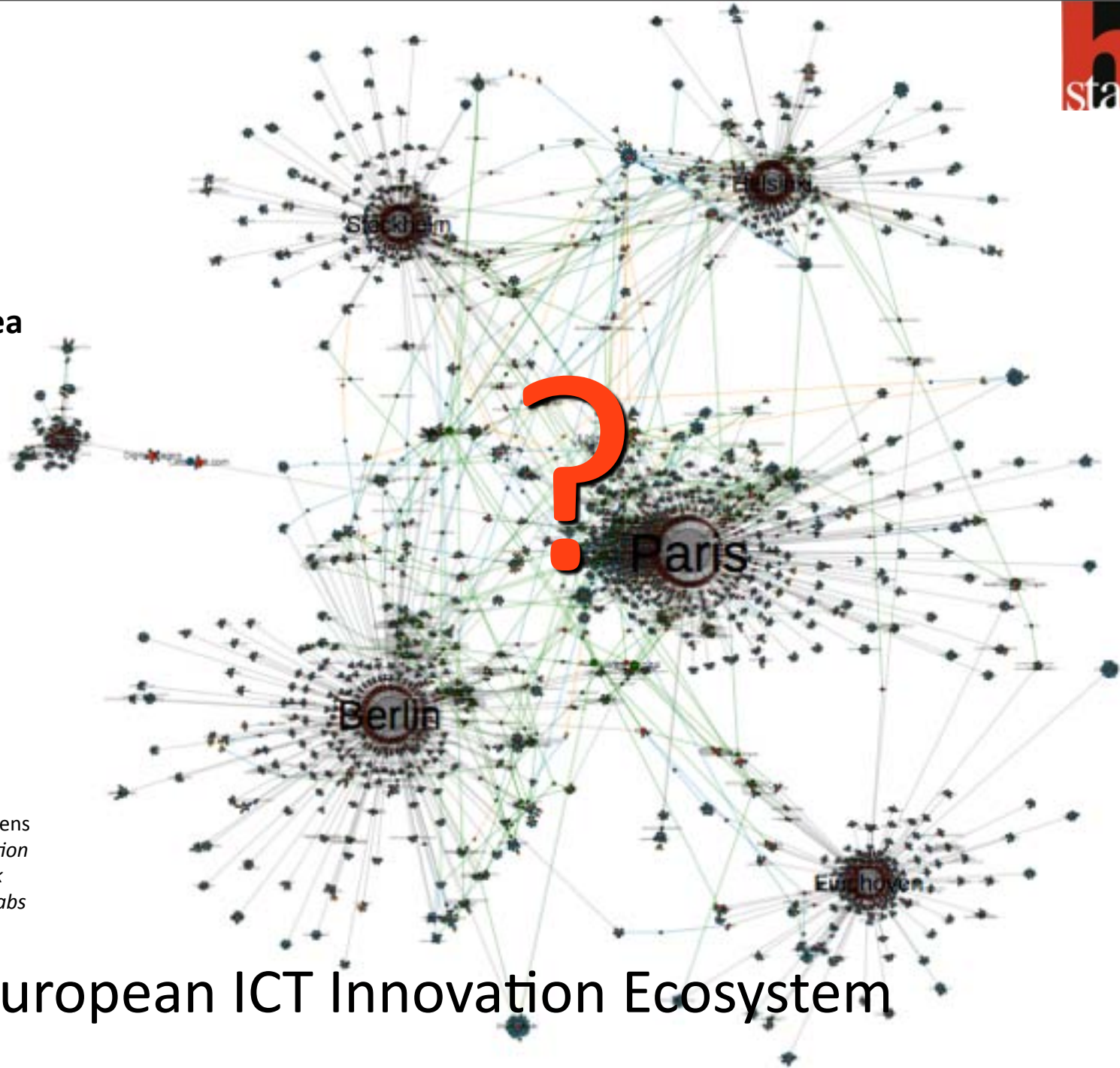
Adding San Francisco Bay Area as “a seventh EIT ICT Labs node”

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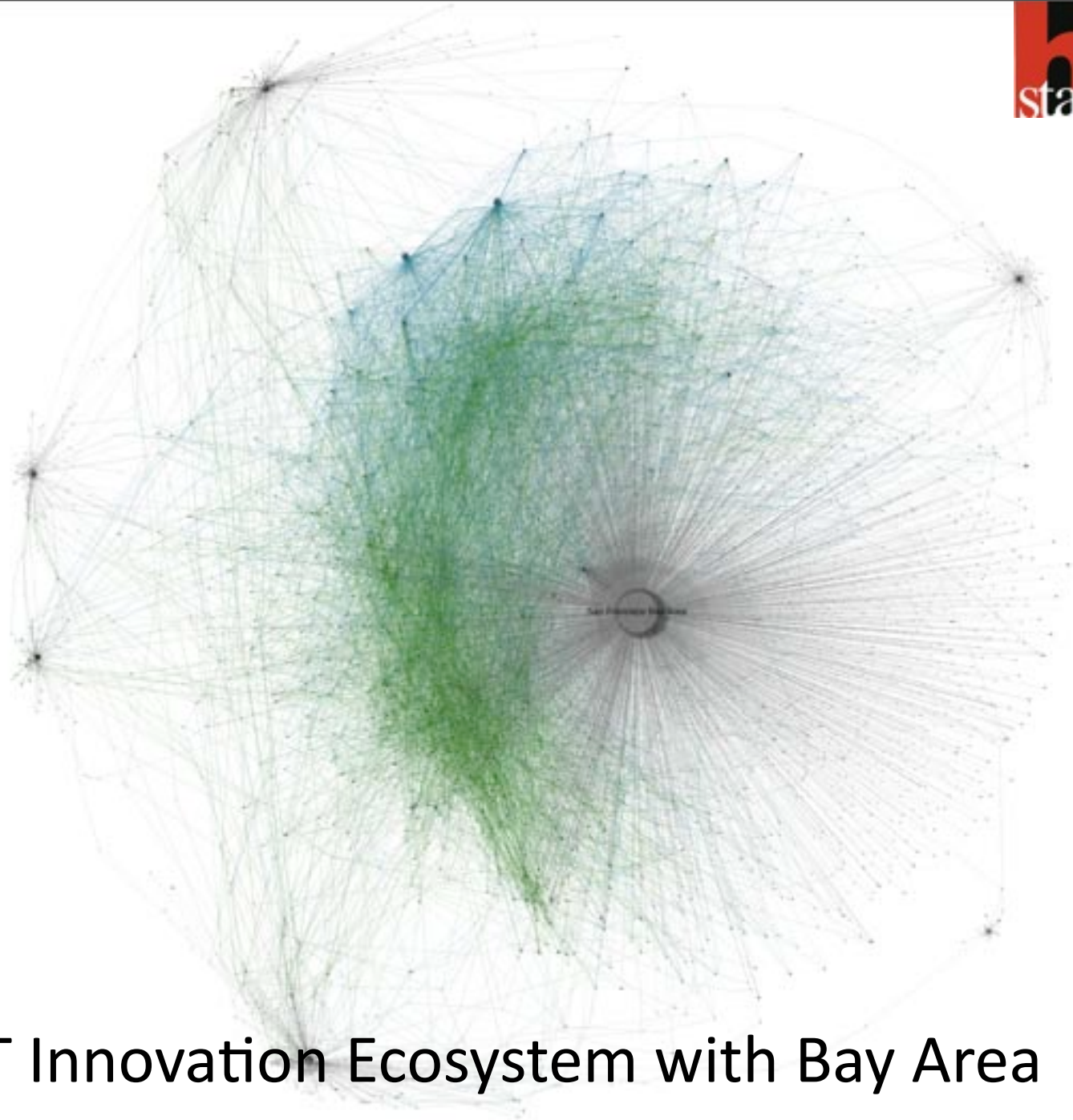
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European ICT Innovation Ecosystem with Bay Area



Human Sciences & Technologies Advanced Research Institute

STANFORD UNIVERSITY

H-STAR Research Focus

Research on **people and technology** — how people **use** technology, how to better **design** technology to make it more usable, how technology **affects people's lives**, and the **innovative use** of technologies in research, education, art, business, commerce, entertainment, communication, security, and other walks of life.

Funded research in 2011-12: ca \$20M

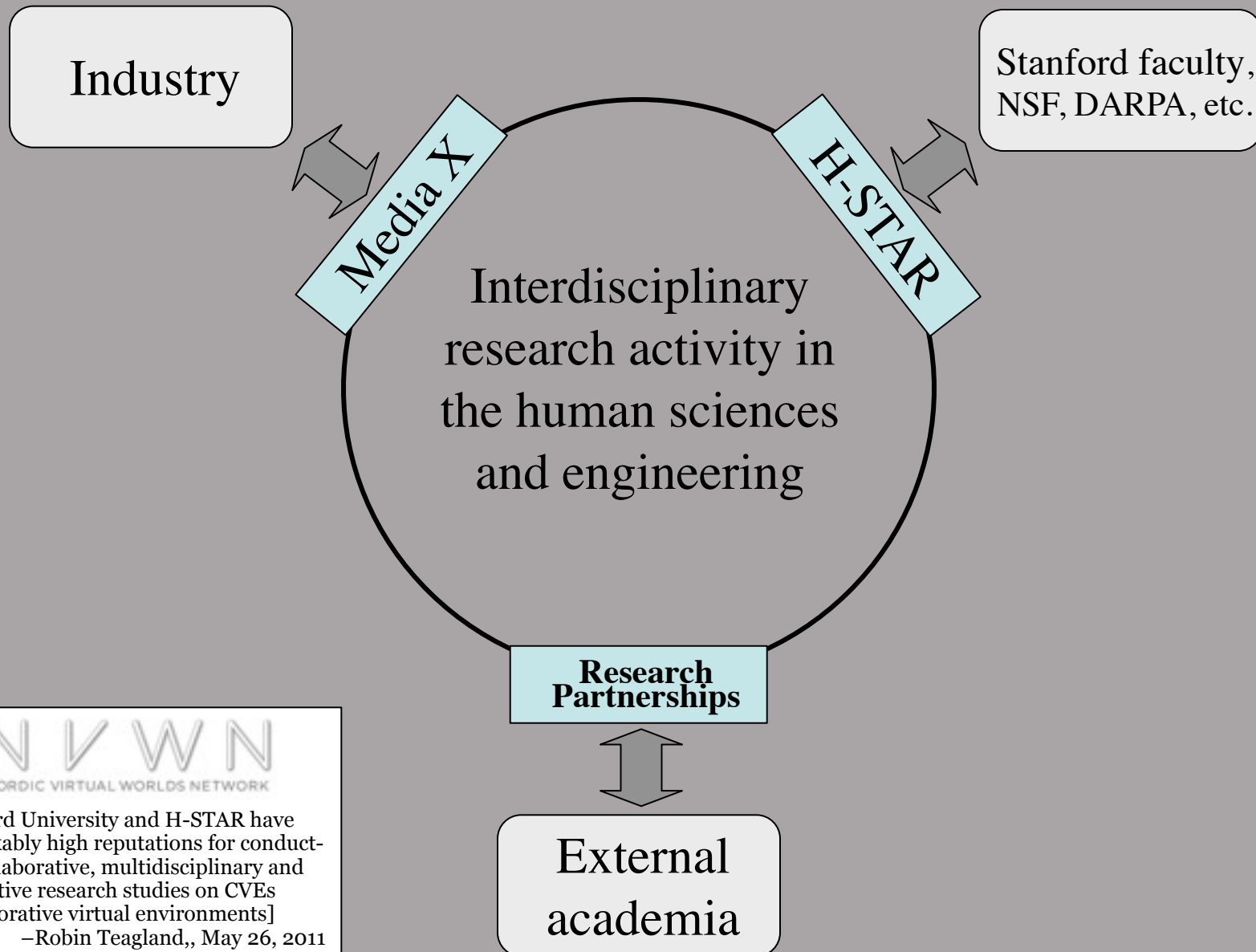
H-STAR seeks partnerships with university consortia, regional development organizations, government research labs, etc.



Recent/current H-STAR Partnerships

- Danish university system – funded by DASTI
- Finnish CICERO Research Network – funded by Tekes
- Tallinn University of Technology, Estonia
- Pending: Tartu University, Estonia
- A number of individual, twelve month partnerships

The three gateways to H-STAR research activity



N V W N
NORDIC VIRTUAL WORLDS NETWORK

Stanford University and H-STAR have remarkably high reputations for conducting collaborative, multidisciplinary and innovative research studies on CVEs [collaborative virtual environments]

—Robin Teagland,, May 26, 2011



<http://hstar.stanford.edu>



Human Sciences & Technologies Advanced Research Institute

STANFORD UNIVERSITY

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