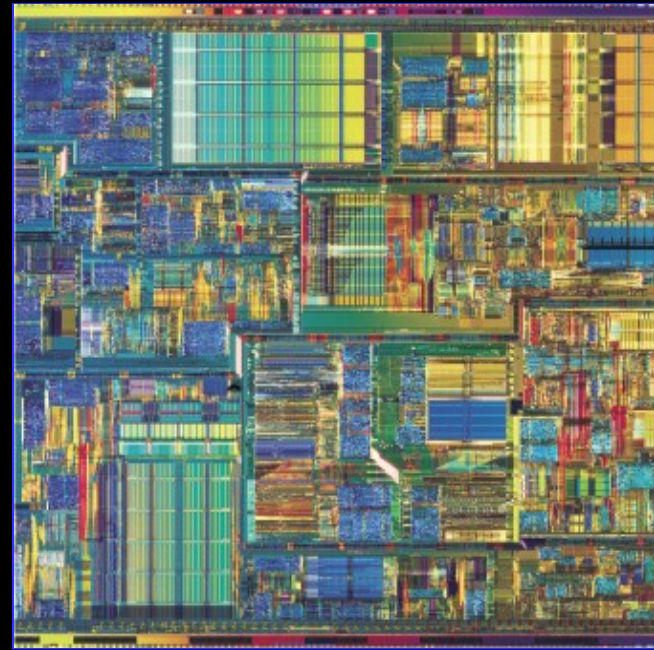




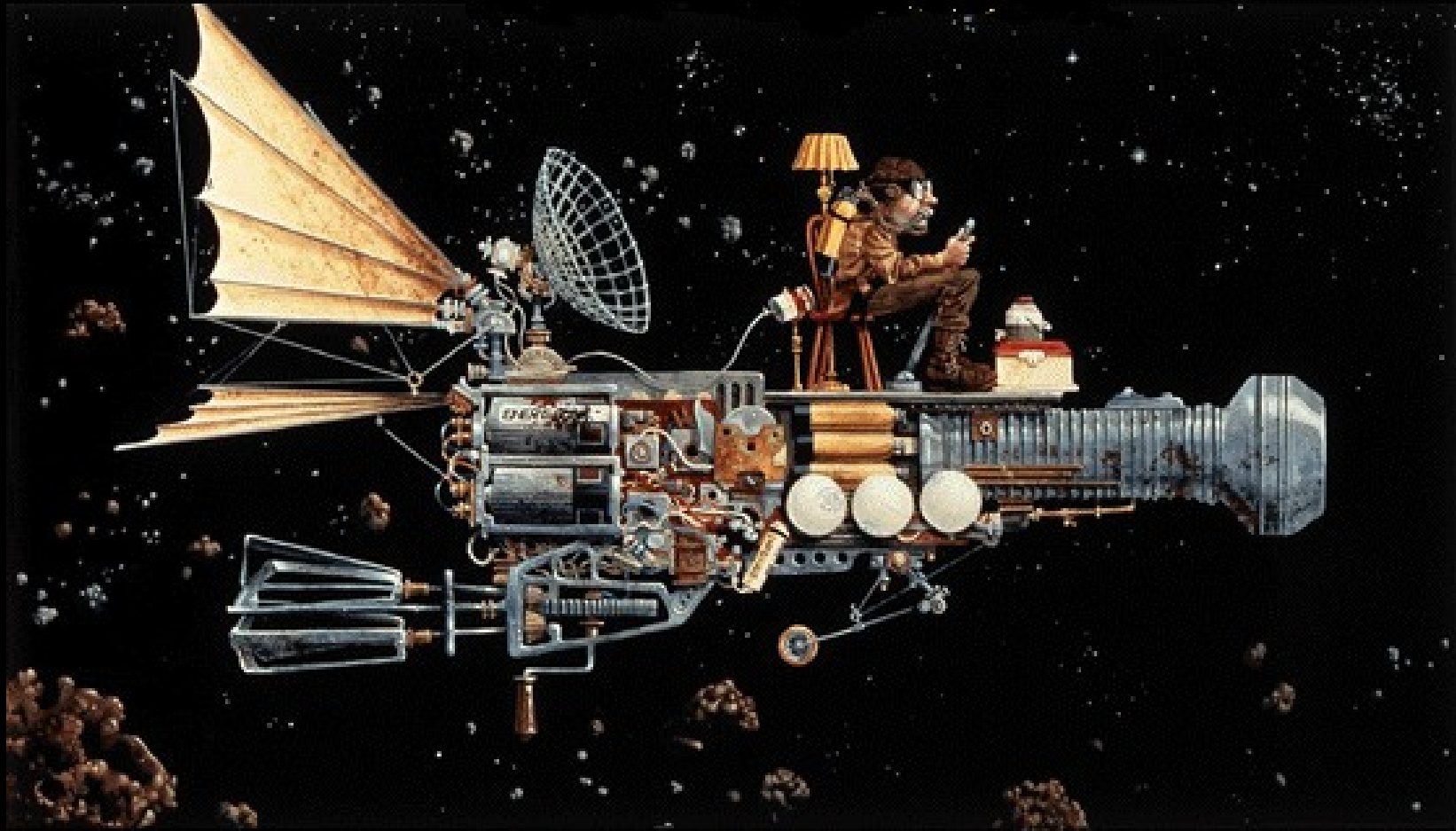
Alle sorgenti dell'innovazione: la conoscenza libera



Norberto Patrignani
Accademia dell'Hardware e Software Libero "Adriano Olivetti"

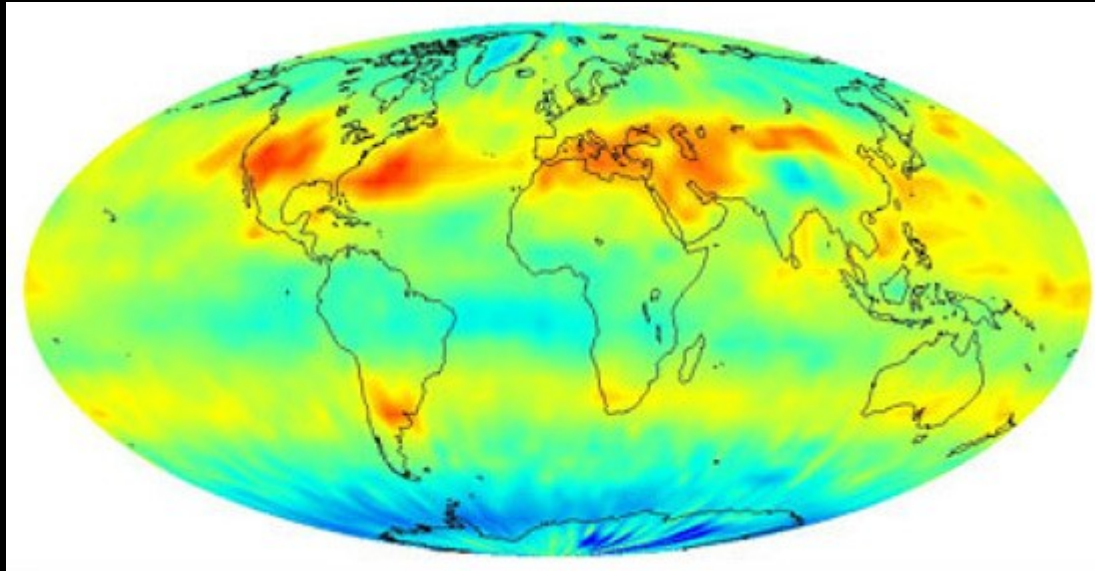
Ivrea, 30 Giugno 2011
IVREA 2.0 - Innovation Day





"Low Tech", James Christensen, 1987

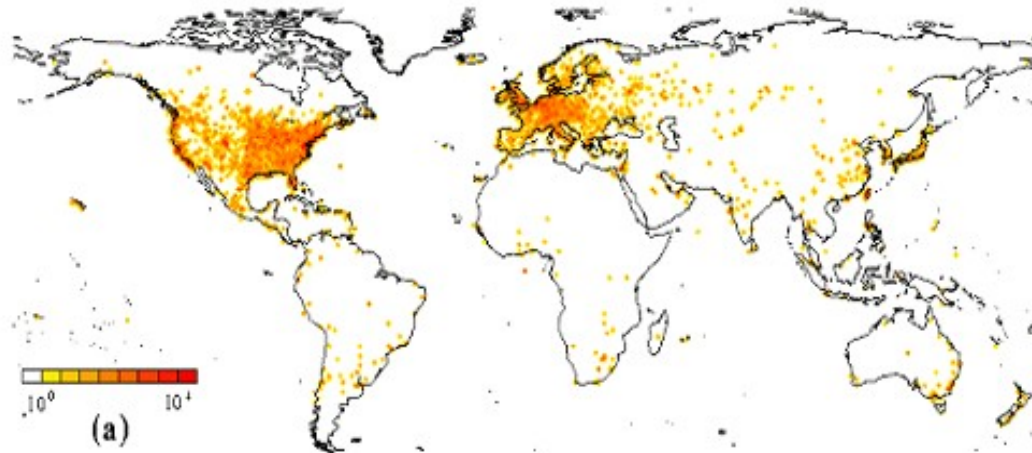
CO_2



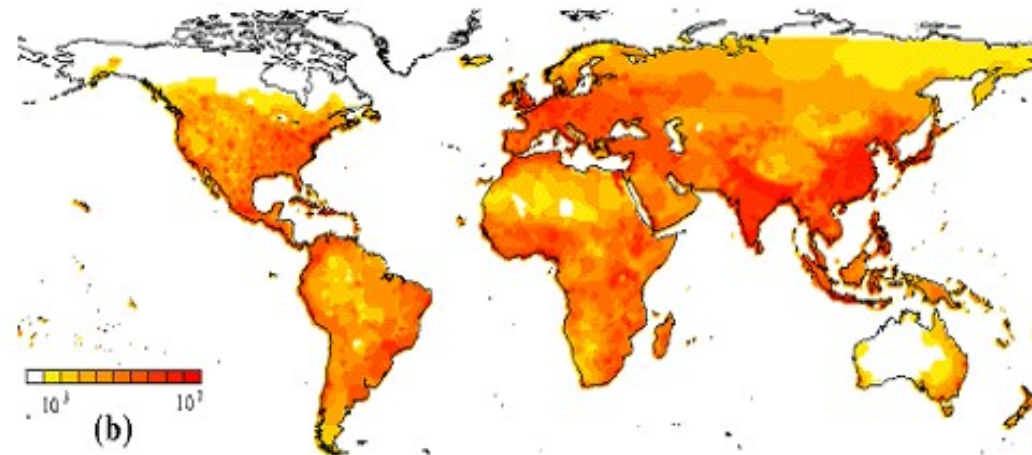
Source: NASA, 2008

Accessibility, Universal Access & Digital Divide

Router
density



Population
density



Egypt Influence Network

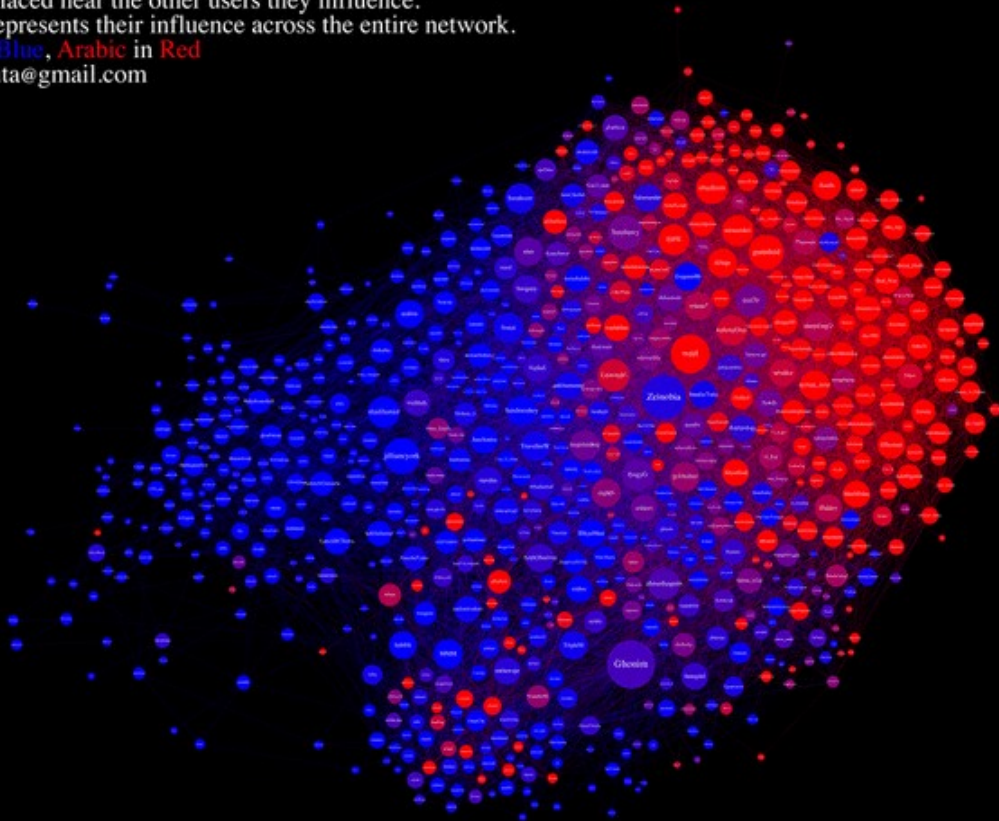
Twitter users are said to influence each other if they follow each other, shown with lines.

Users are placed near the other users they influence.

User size represents their influence across the entire network.

English in Blue, Arabic in Red

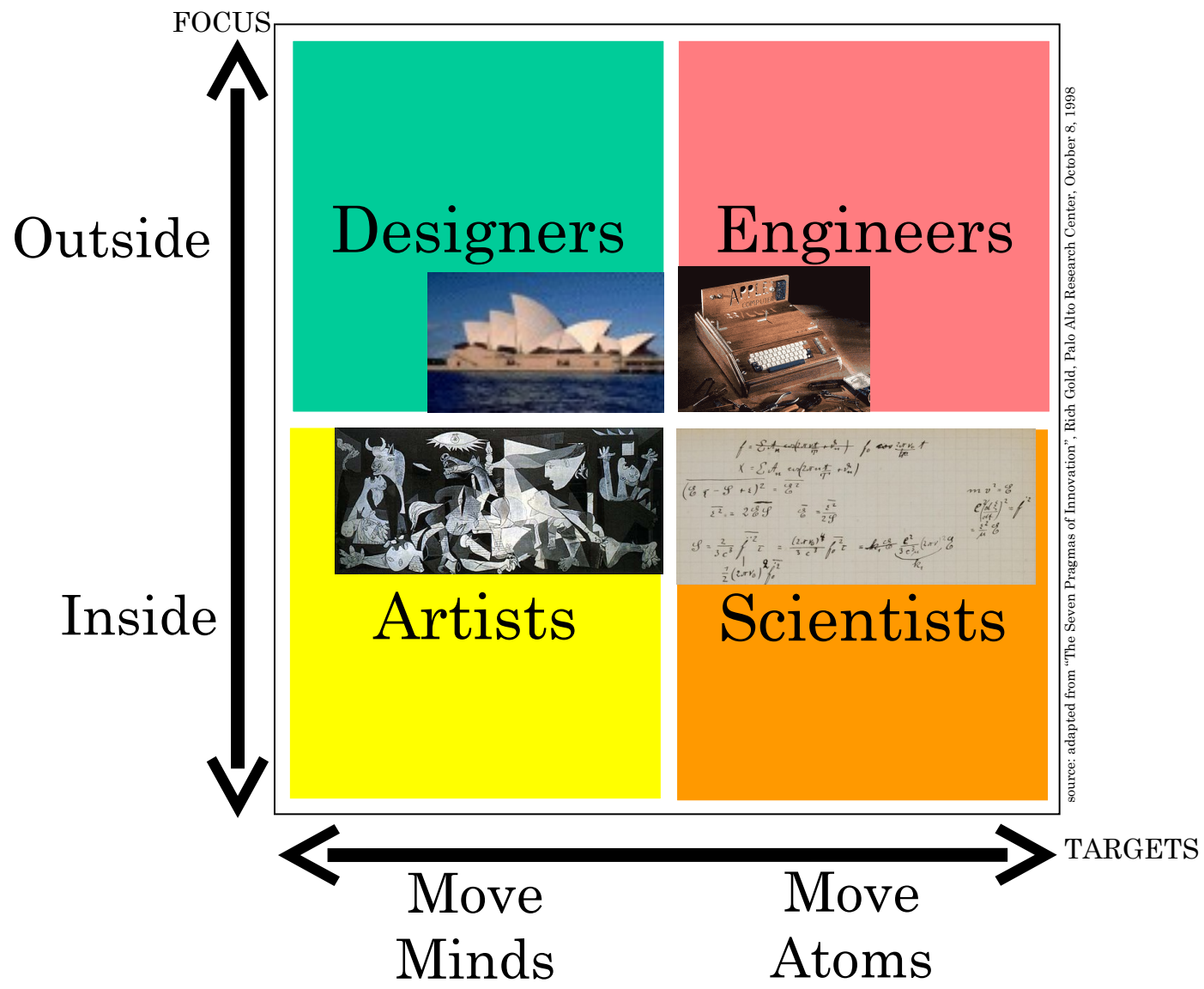
kovas.boguta@gmail.com



*"... se è nell'ignoranza
che cresce la sottomissione
è nella conoscenza
che può vivere la ribellione"*
Norma Rangeri, 2011

We need innovation, but
where does innovation come from?

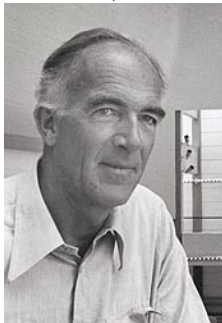
Innovators Clusters



source: adapted from "The Seven Pragmas of Innovation", Rich Gold, Palo Alto Research Center, October 8, 1998

Innovators

Jörn Utzon, 1970



Steve Jobs, Steve Wozniak, 1975



Outside

Designers



Engineers

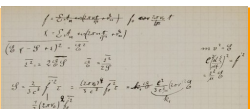


Inside

Artists



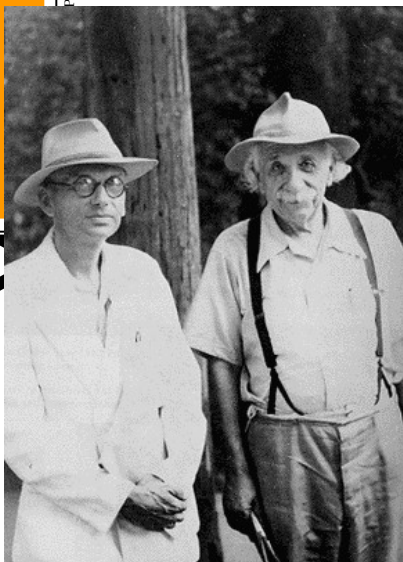
Scientists



Pablo Picasso, 1962

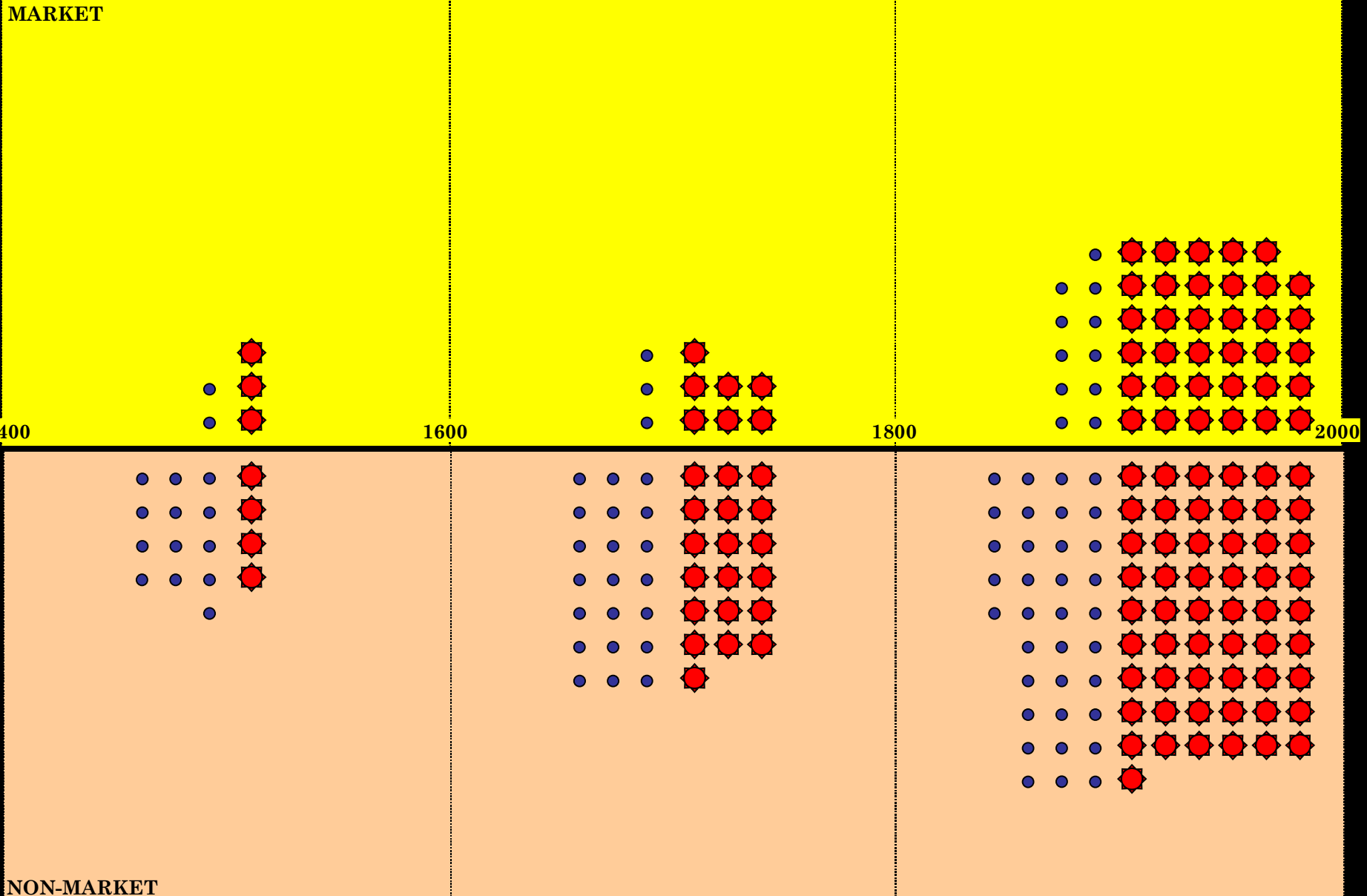
Move
Minds

Move
Atoms



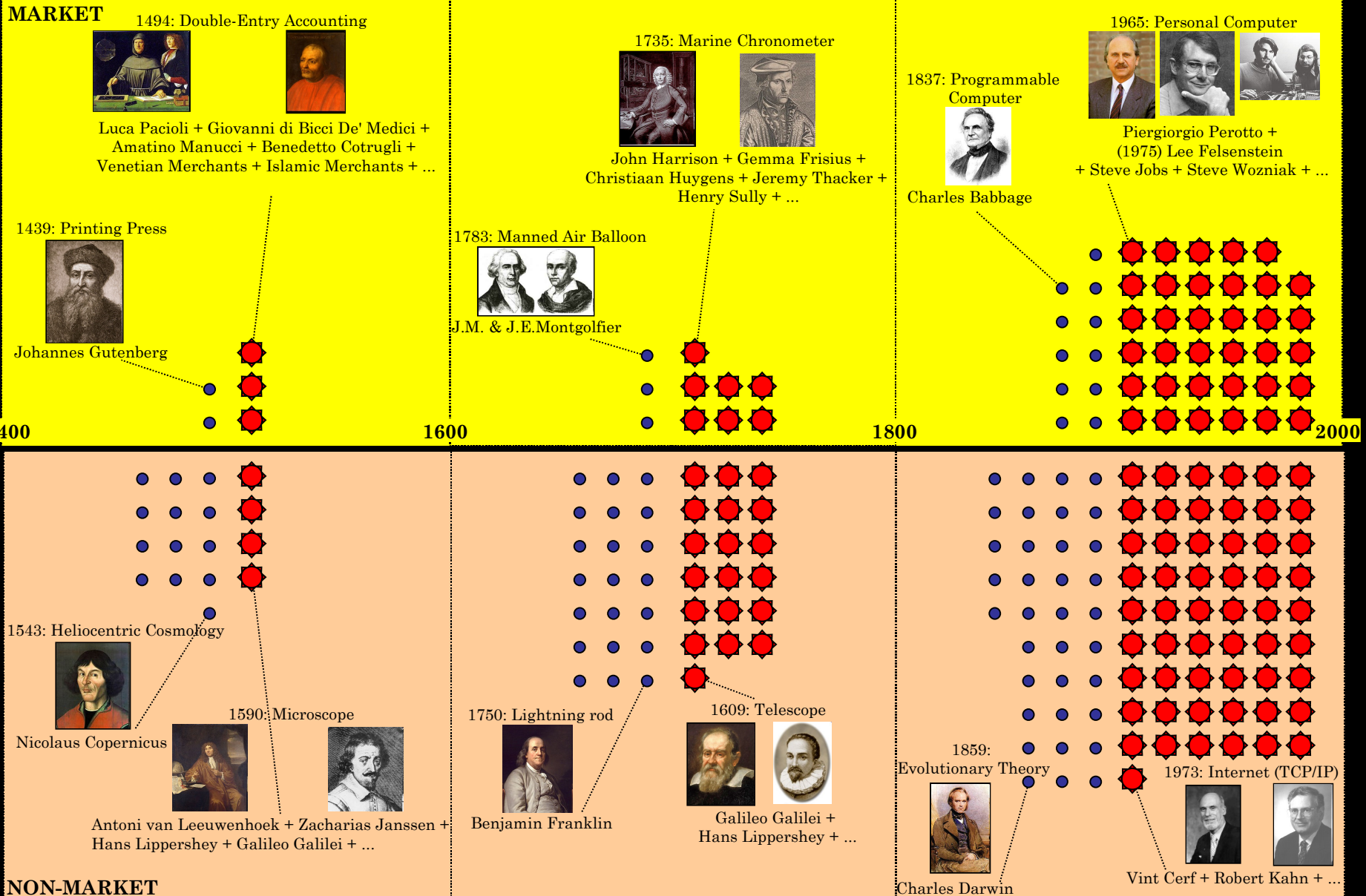
Kurt Gödel e Albert Einstein, Princeton 1950

The Natural History of Innovation



Source: Steven Johnson, "Where good ideas come from. The Natural History of Innovation", Riverhead Books, 2010,

The Natural History of Innovation



Source: Steven Johnson, "Where good ideas come from. The Natural History of Innovation", Riverhead Books, 2010,

Industrial Revolution

- Matter & Energy
- Conservation-Laws
- Linear Systems (Continuous)
- Exhaustive/Stress Testing (Tolerances)
- Zero-Sum Exchanges
- Limited Speed (Friction)
- Copy $\neq$ Original
- High Environmental Impact

Knowledge Revolution

- Information
- Conservation-Laws ?
- Finite-State Machines (Discrete)
- Functional Testing (Tolerances?)
- Plus-Sum Exchanges
- Light Speed
- Copy = Original
- Low Environmental Impact

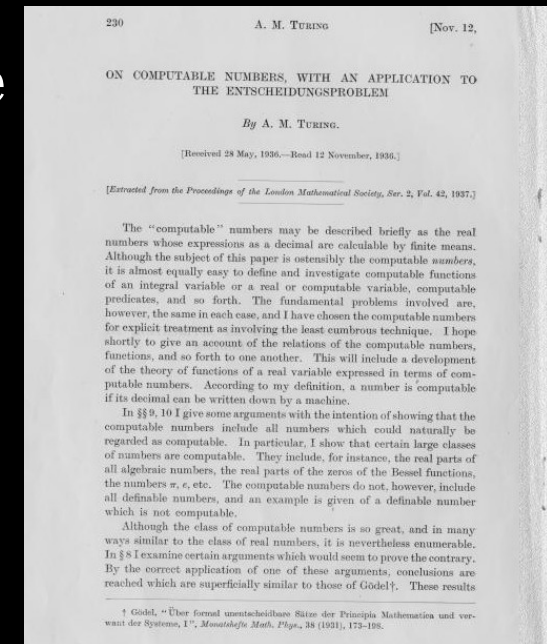


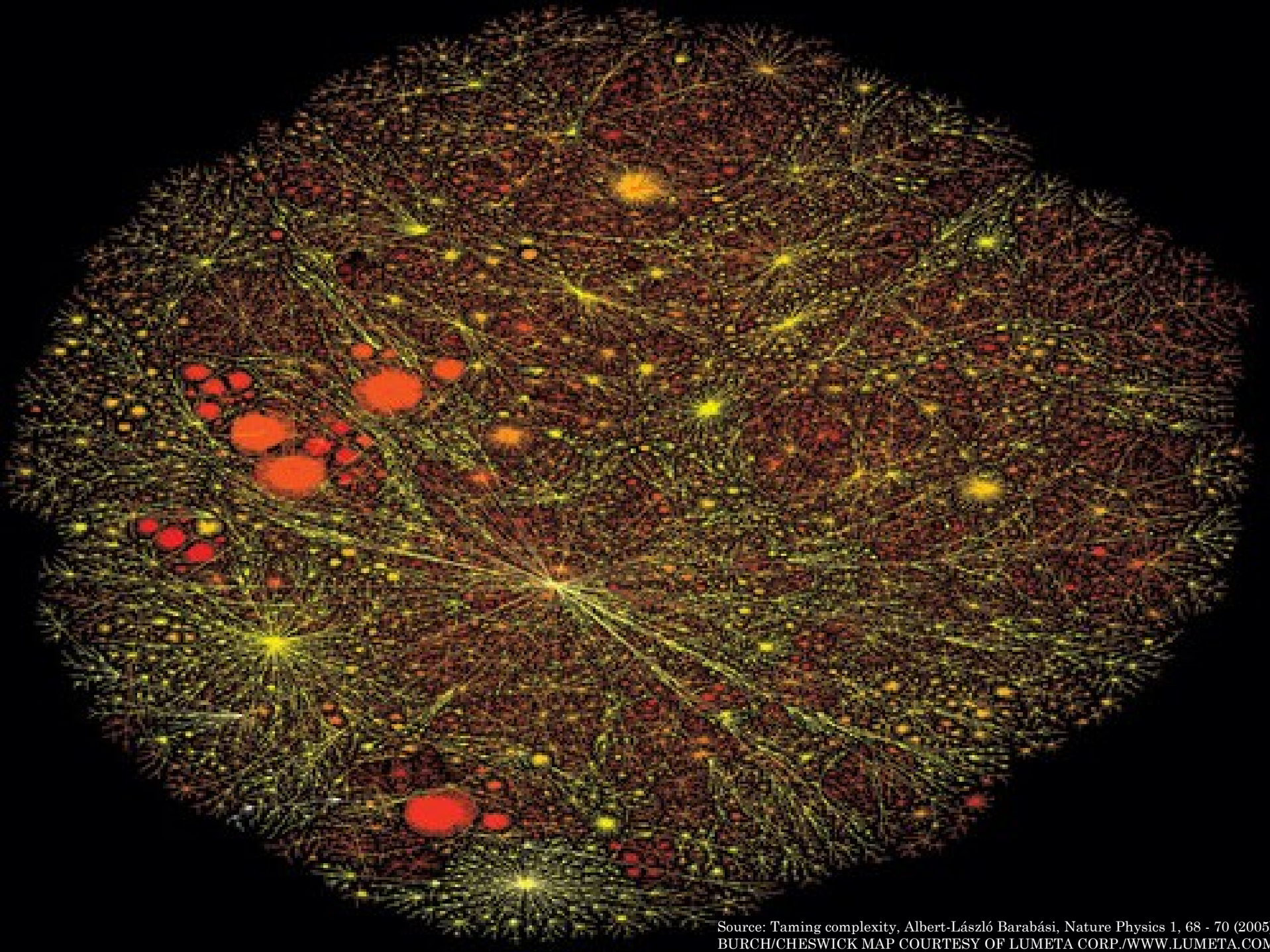
40x image of a rusted old coin - Photo by Havi Sarfaty

1937: Turing Machine

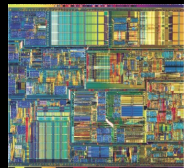


Alan Turing
(London, UK, 1912 - Wilmslow, UK, 1954)





Source: Taming complexity, Albert-László Barabási, Nature Physics 1, 68 - 70 (2005)
BURCH/CHESWICK MAP COURTESY OF LUMETA CORP./WWW.LUMETA.COM



Semantic Web



Natural Language Search

Knowledge Navigation

XML

WEB3.0

WEB4.0

WEB1.0

WEB2.0

HyperMedia Navigation

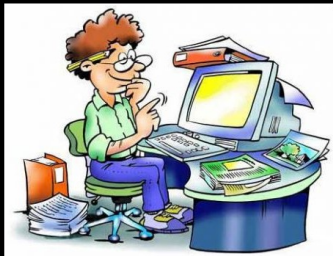
Portals

Web Services

P2P

HTML

Access to Knowledge



Internet

eMail

Blogs

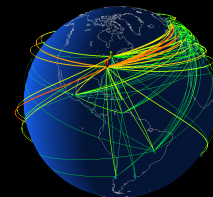
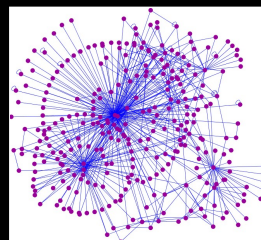
Tagging

RSS

Mash-Ups

Wikis

Knowledge Networks



Collective Intelligence



Social Networks



Source: Adapted from Nova Spivack, 2004

1985: Free Software (GNU Manifesto)



Richard M. Stallman
(New York, USA, 1953 -)

Free Software
is a matter of the users' freedom to
run,
copy,
distribute,
study,
change and improve the software.

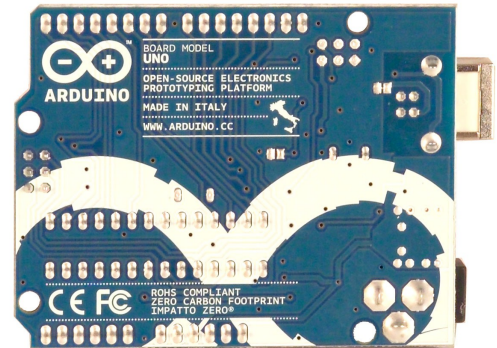
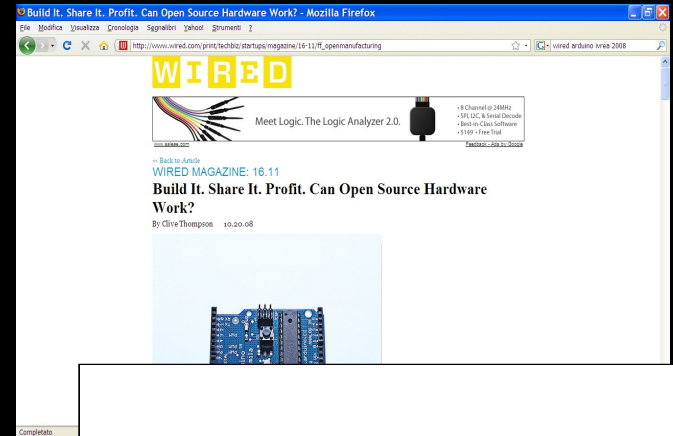
Dr. Dobb's Journal of Software Tools Volume 10, Number 3, March, 1985

Ray Duncan	16-bit Software Toolbox	??
Allen I. Holub	C Chest	??
R. P. Sutherland	Of Interest	??
Michael Swaine	Editorial	??
Richard Stallman	The GNU Manifesto	30
John Malpas	Programming in Logic	36--38, 40--41
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Stephen King	Review of SAVVY PC Version 4.0 from Excalibur Technologies Corp	116
R. P. Sutherland	Review of \em Turing's Man: Western Culture in the Computer Age, by J. David Bolter	122

2005: Open Source Hardware



Massimo Banzi



*"Arduino nasce nel 2005 ... quando insegnavo all'Interaction Design Institute di Ivrea ...
... io proposi il nome "molto Eporediese" di Arduino, come il bar dove andavamo a bere l'aperitivo."
"Betabook, il manuale di Arduino", Massimo Banzi, fondatore del progetto Arduino*

Open Source Hardware

Use, program, study, repair, recycle,
make changes, manufacture, ...

本 : běn

(chinese: an origin, the beginning place)

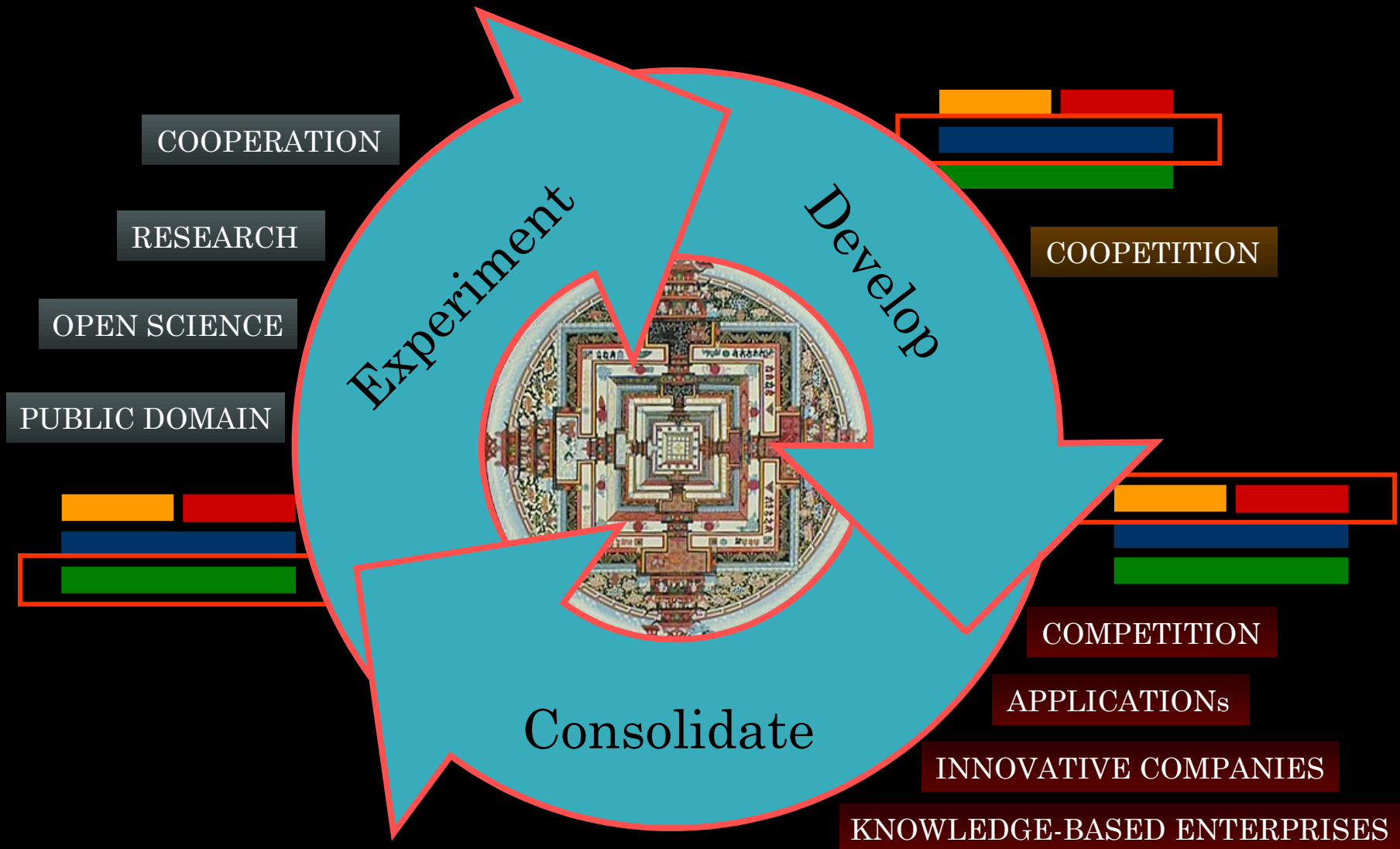


Ben Nanonote



Source: sharism.cc

Knowledge-Based Society: the Innovation Cycle



Accademia dell'Hardware e del Software Libero "Adriano Olivetti"



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