

Promises and Pitfalls of Technology and Data in Planning

JOINT Session

SPURS FELLOWS

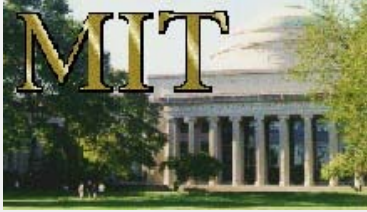
&

Urban Science & Digital Transition:

e-Planning XX years later

Pedro Ferraz de Abreu

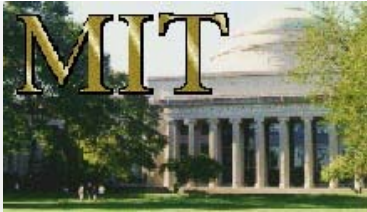
pfa@mit.edu



I am a proud SPURS Fellow and this is my class



But ...
Where is
Pedro?

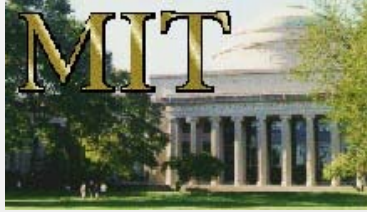


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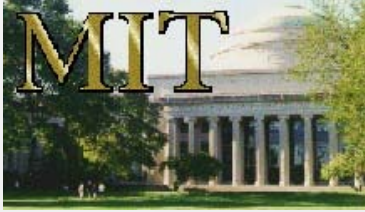




... Then, I was DOWNGRADED...
to PhD Student...

... and MANY years later, PhD



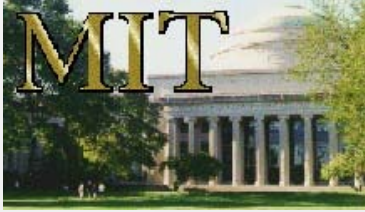


Promises and Pitfalls of Technology and Data in Planning

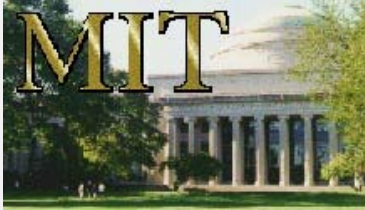
Technology in Planning: We need a theoretical framework

Pedro Ferraz de Abreu

pfa@mit.edu



***"Science without Activism, is Frivolous;
Activism without Science, is Blind"***



e-Planning XX years ago...

Pedro Ferraz de Abreu

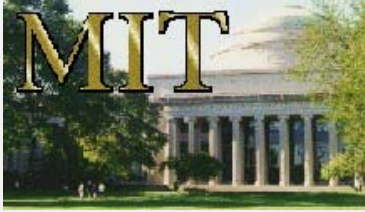
MIT - DUSP, e-Planning Seminar

**"e-Planning in a world embattled by war
and poverty:
Why should planners study and influence
the information technology revolution?"**

Friday, December 5, 2003

MIT Rm. 3-401, 12:05PM - 2:00PM

Discussants: Bish Sanyal, David Laws



The Cost of Free:

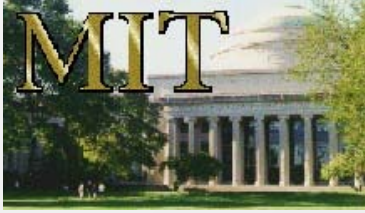
Understanding the new equation relating *technology*,
market economy, *regulation*, *privacy* and *power*.

Pedro Ferraz de Abreu

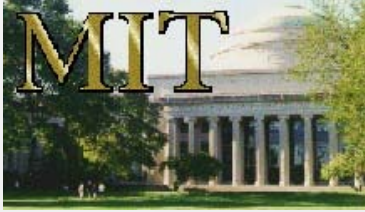
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MIT - DUSP • October 16 , 2023

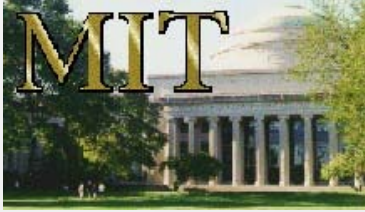
Urban Science & Digital Transition: e-Planning XX years later



- **Dangerous Paradox**
- **ICT Qualitative Leap Theory**
- **ICT unequal Added-value Theory**
- **Cost of Free - The Cost of Love ex.**



- **Dangerous Paradox**
- **ICT Qualitative Leap Theory**
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QVO VADIS, World?

Main Stream ACADEMIA goes on teaching:

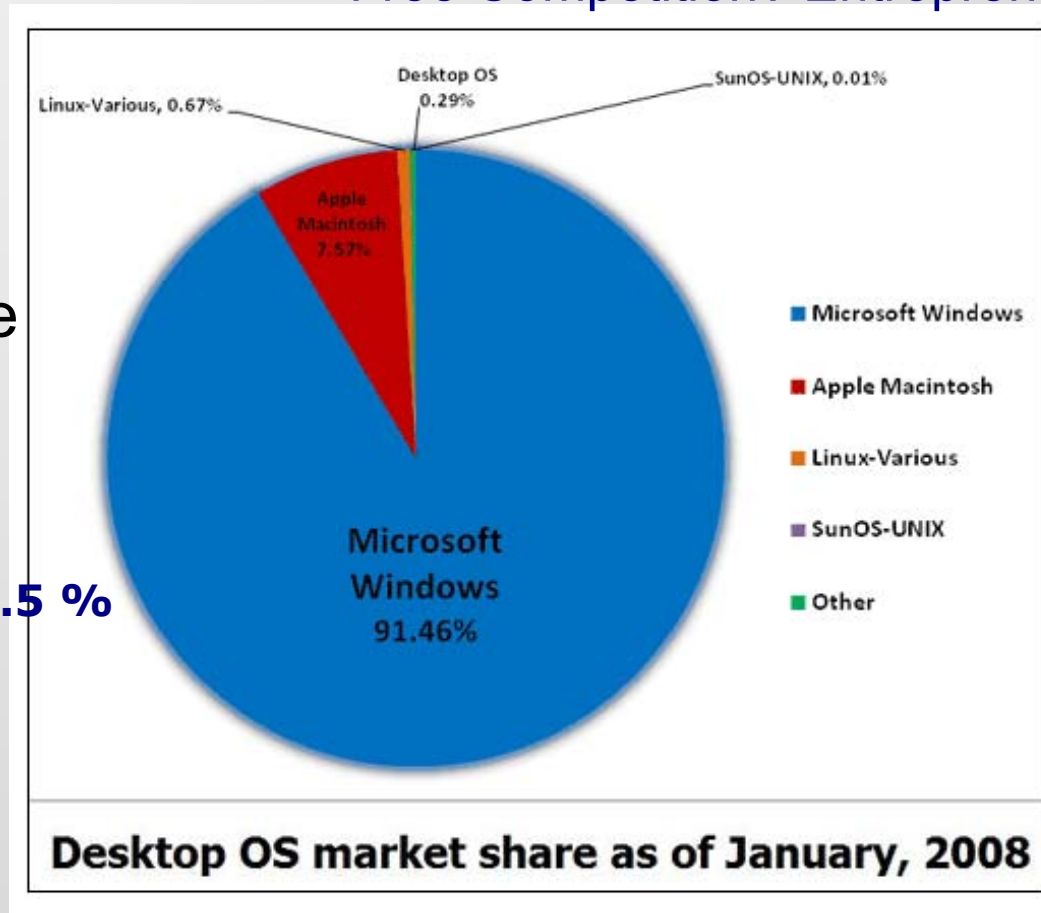
- Society model: *Market Economy, Free Competition, Entrepreneurship*
- Values Proclaimed: *Democracy, Freedom, Social Justice, Property*
- Promises: *Social Equality Convergence, Peace*

• Market Economy: Reality Check

Free Competition? Entrepreneurship?

World
Computer
OS desktop
market share
2008

Microsoft = 91.5 %

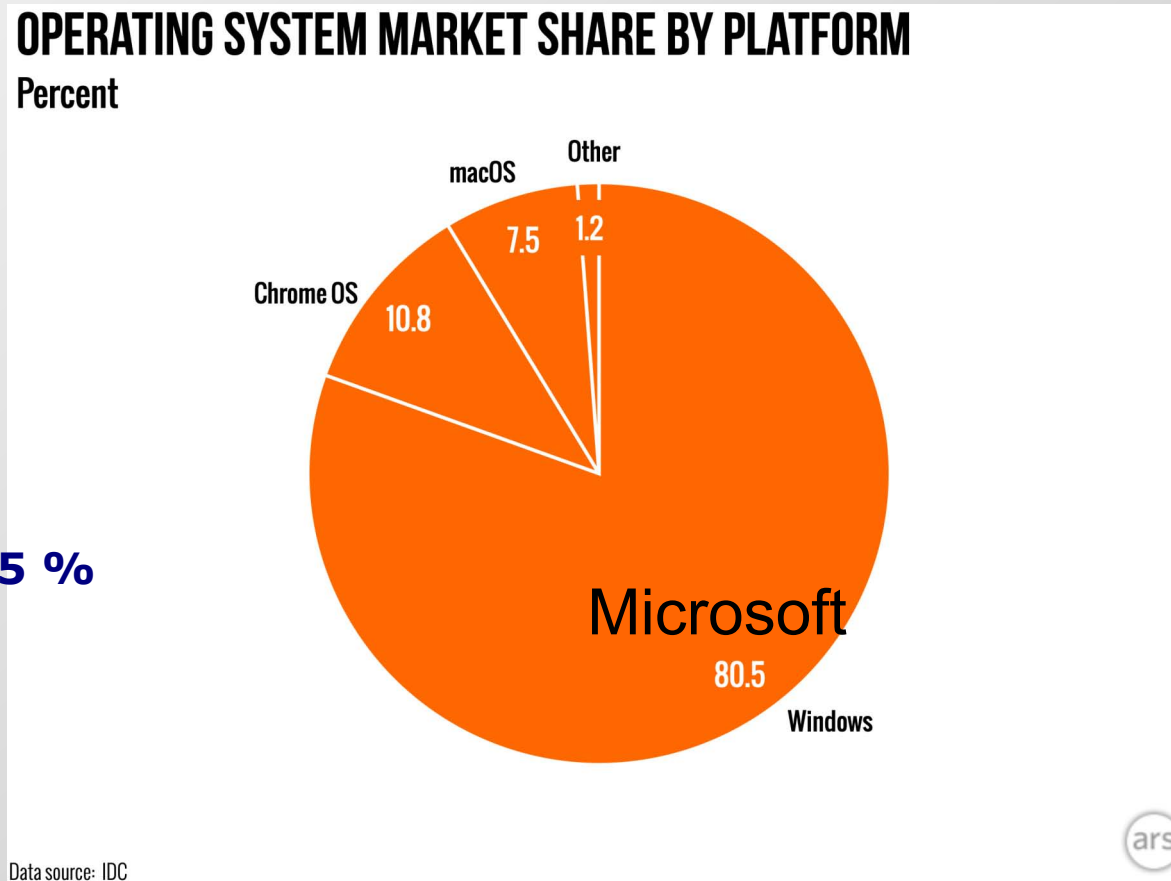


- Market Economy: Reality Check

Free Competition? Entrepreneurship?

World Platform market share 2021

Microsoft = 80.5 %

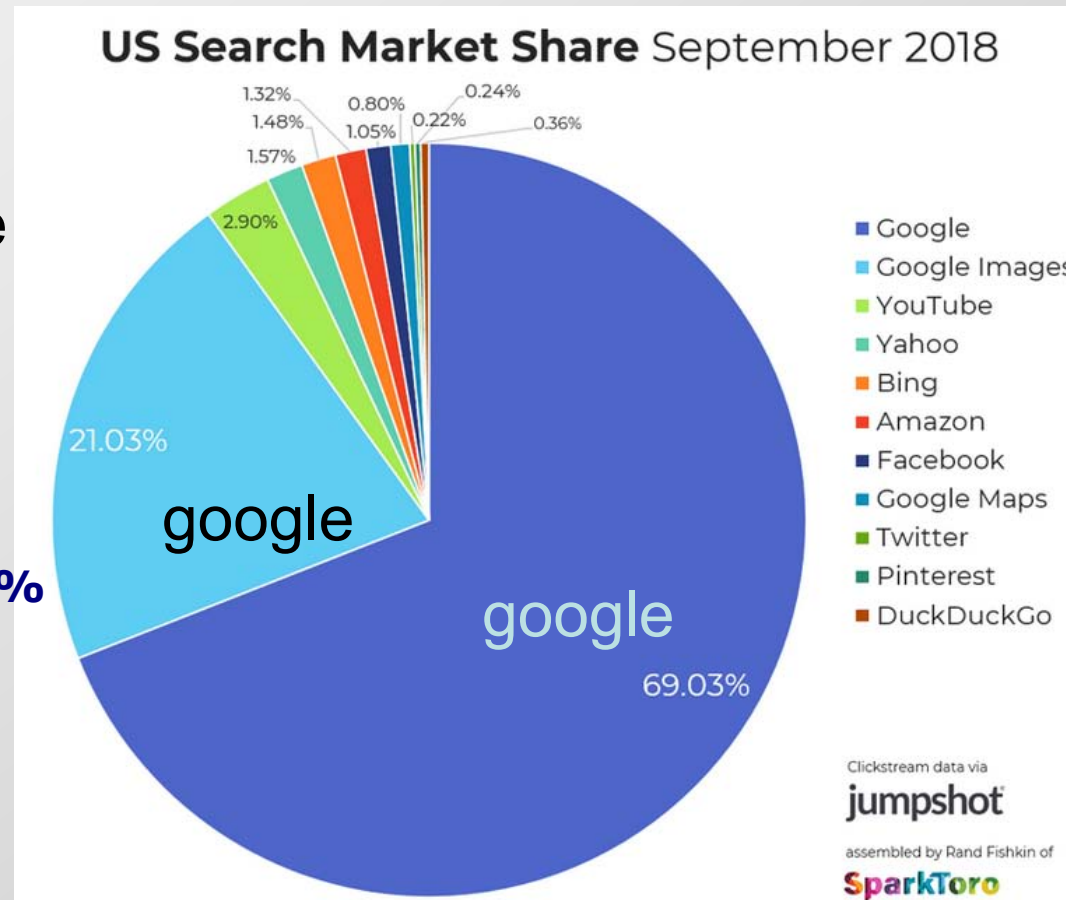


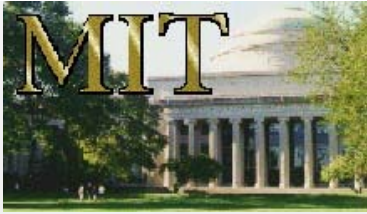
• Market Economy: Reality Check

Free Competition? Entrepreneurship?

USA
search
market share
2018

Google = 89.1 %



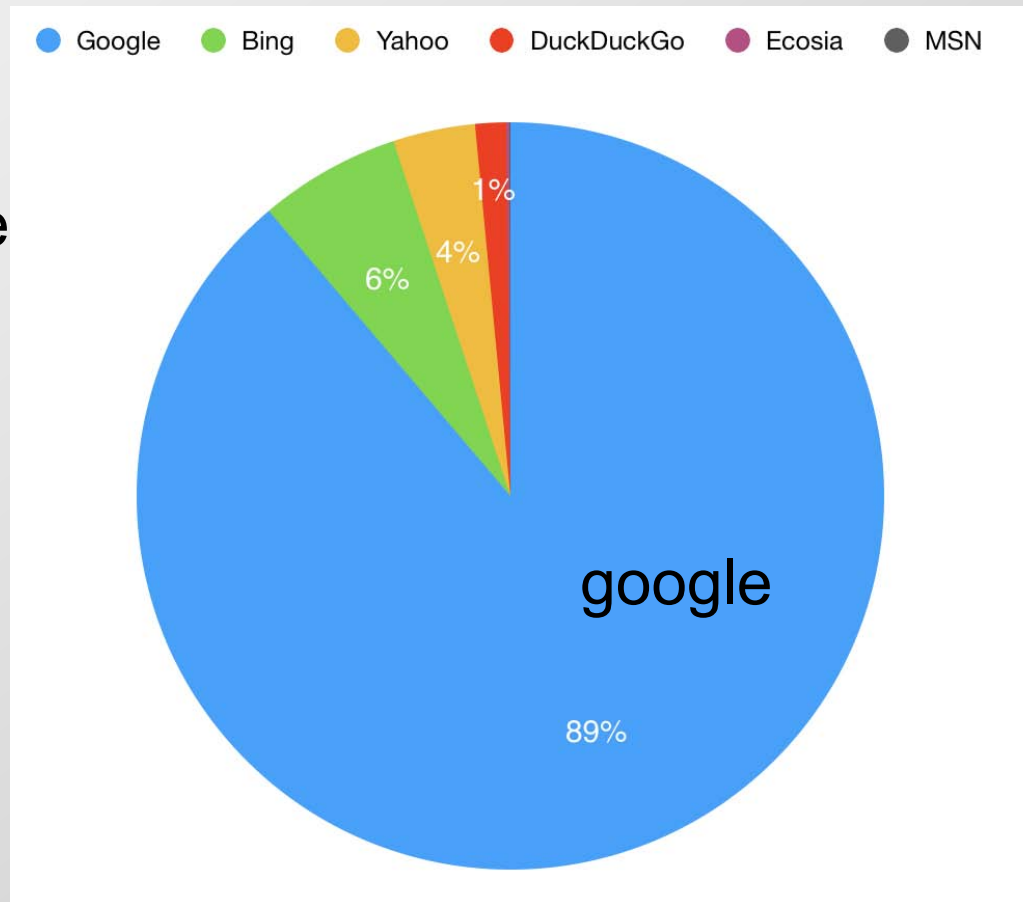


• Market Economy: Reality Check

Free Competition? Entrepreneurship?

USA
search
market share
2020

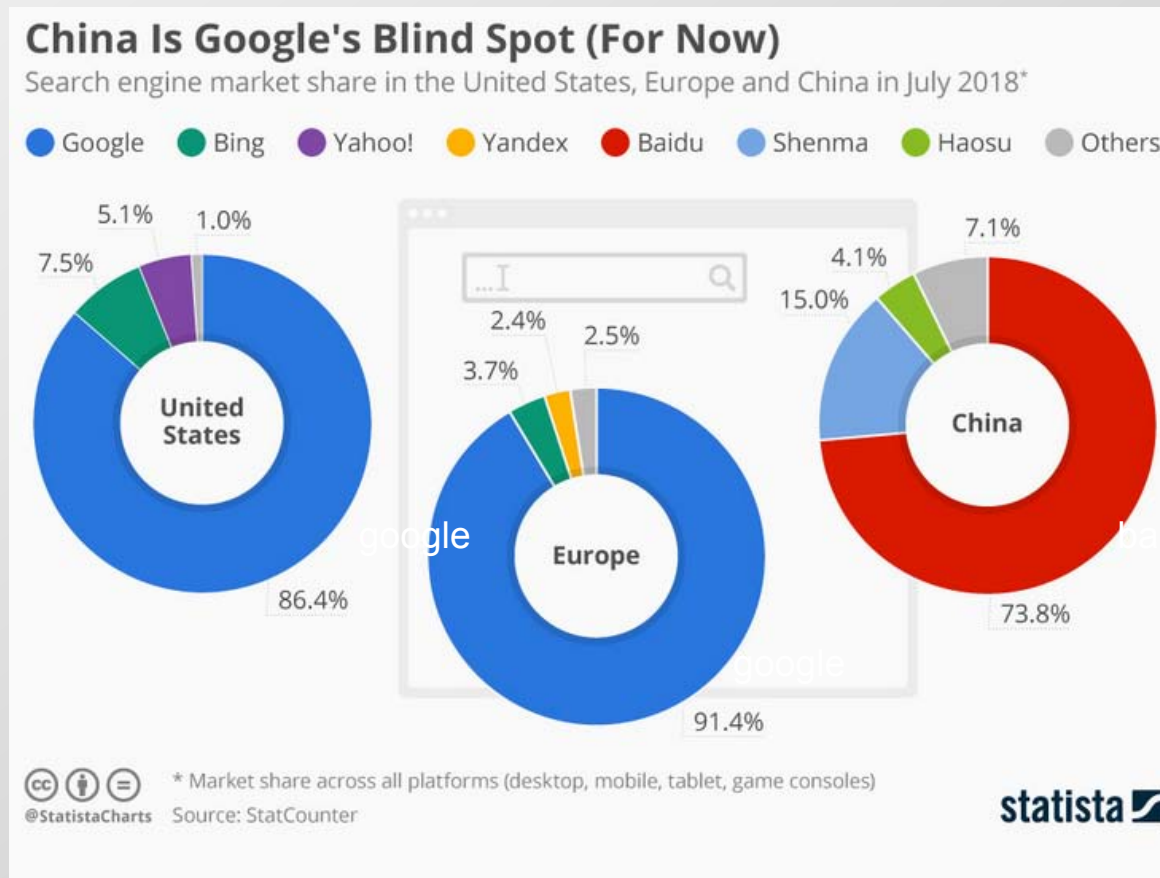
Google = 89 %



Market Economy: Reality Check

Free Competition? Entrepreneurship?

USA
EU
China
search
market share
2018



- Market Economy: Reality Check
Free Competition? Entrepreneurship?

USA
on-line
shopping
market
share
2018

Amazon = 41%



- Market Economy: Reality Check
Free Competition? Entrepreneurship?

World
Top-10
Companies
2021

Rank	Company name	Location	Sector
1	APPLE INC	United States	Technology
2	SAUDI ARAMCO	Saudi Arabia	Energy
3	MICROSOFT CORP	United States	Technology
4	AMAZON.COM INC	United States	Consumer Discretionary
5	ALPHABET INC google	United States	Technology
6	FACEBOOK INC	United States	Technology
7	TENCENT	China	Technology
8	TESLA INC	United States	Consumer Discretionary
9	ALIBABA GRP	China	Consumer Discretionary
10	BERKSHIRE HATHAWAY	United States	Financials

Showing 1 to 10 of 100 entries

Note: Data as of March 31, 2021.

- Inequality evolution: Reality Check
Social Progress? Equal Opportunity?

"The socio-economic divide has been on the rise in Europe over the past decades, and has intensified since the onset of the global financial crisis. High and rising inequality harms our societies in many respects."

UNDERSTANDING THE SOCIO-ECONOMIC DIVIDE IN EUROPE

26 January 2017, OECD



21/10/2008 - The **gap between rich and poor has grown** in more than three-quarters of OECD countries over the **past two decades**, according to a new OECD report.

OECD 2019's Growing Unequal? finds that the economic **growth of recent decades has benefitted the rich more than the poor.**

Launching the report in Paris, OECD Secretary-General Angel Gurrá warned of the dangers posed by inequality

• Inequality evolution: Reality Check

Social Progress? Equal Opportunity?

*"globalization also had a dark side. Lurking behind it was a **large and growing chasm between rich and poor - especially within countries.**"*

Dominique Strauss-Kahn, Managing Director,

International Monetary Fund (IMF)

Agadir, November 1, 2010



"Income inequality has been rising in many parts of the world in recent decades."

At The Peterson Institute for International Economics
Washington, D.C., March 13, 2014

David Lipton
First Deputy Managing Director, International Monetary Fund (IMF)



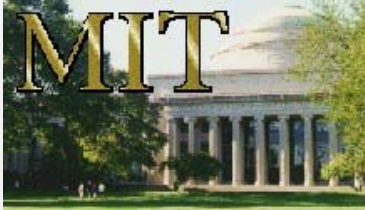
- Digital Transition: Reality Check



UN

*"New and rapidly developing **technologies** such as artificial intelligence, biotechnology, material sciences and robotics hold incredible promise for the **advancement of human welfare**. They also hold the potential to generate **more inequality and more violence**."*
(A. Guterres, UN Secretary-General's Strategy On New Technologies, 2018)

But then, what makes the difference?



inequalities and violence...

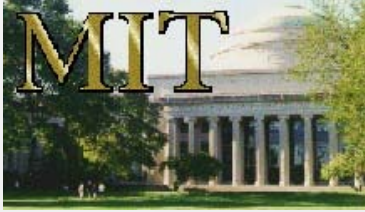
Then, is **Technology *per se* to Blame?**

We closed that argument in 1993

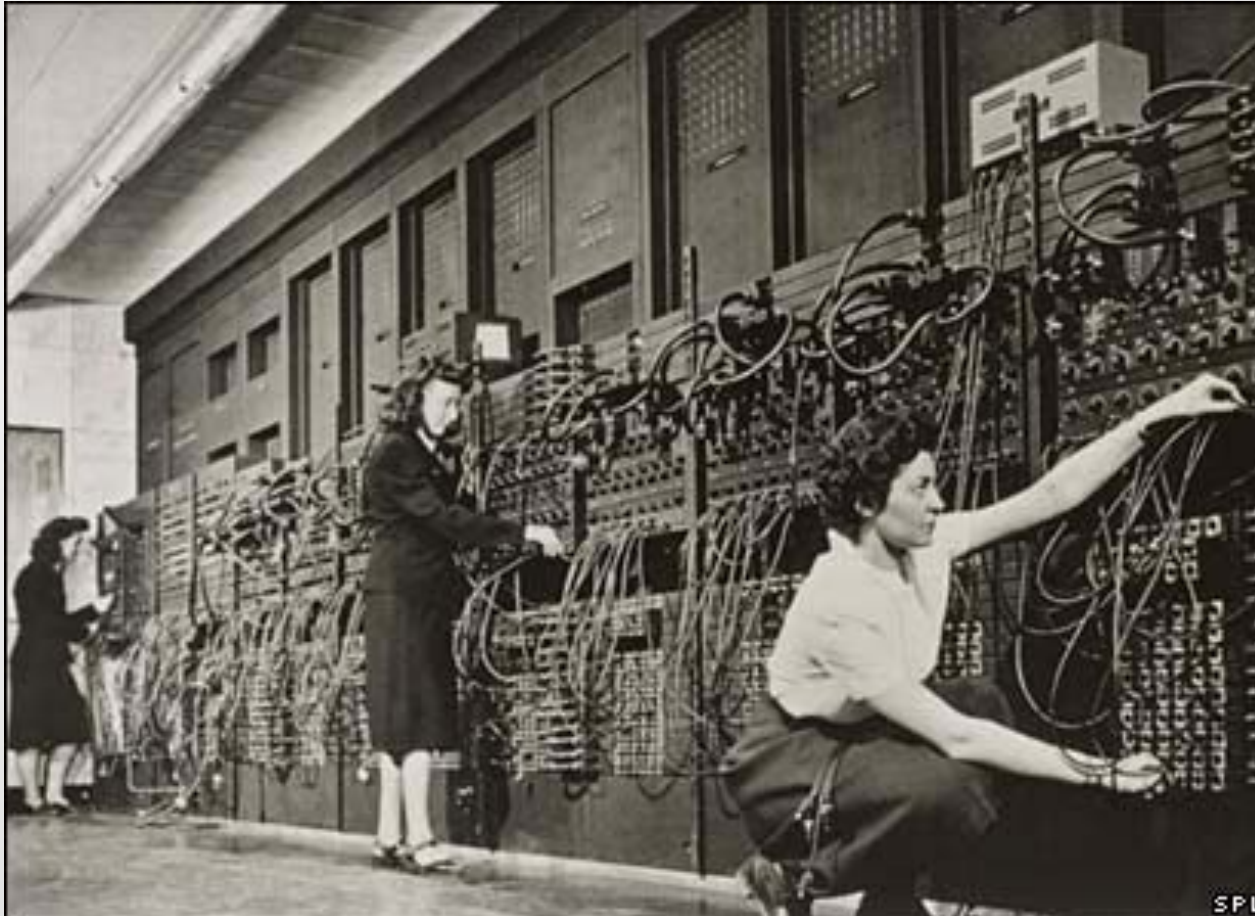
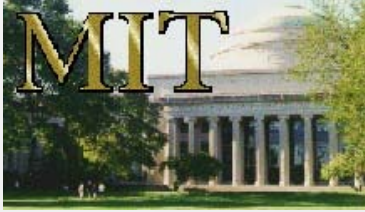
The answer is **No.**

With solid evidence.

Our model was validated through all these years and still is.

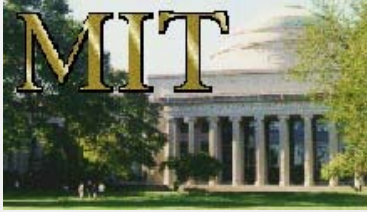


- **Dangerous Paradox**
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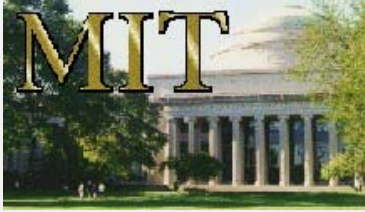
Computers began with the paradigm
The bigger
The better

ENIAC-wide-view-1 ENIAC at 75



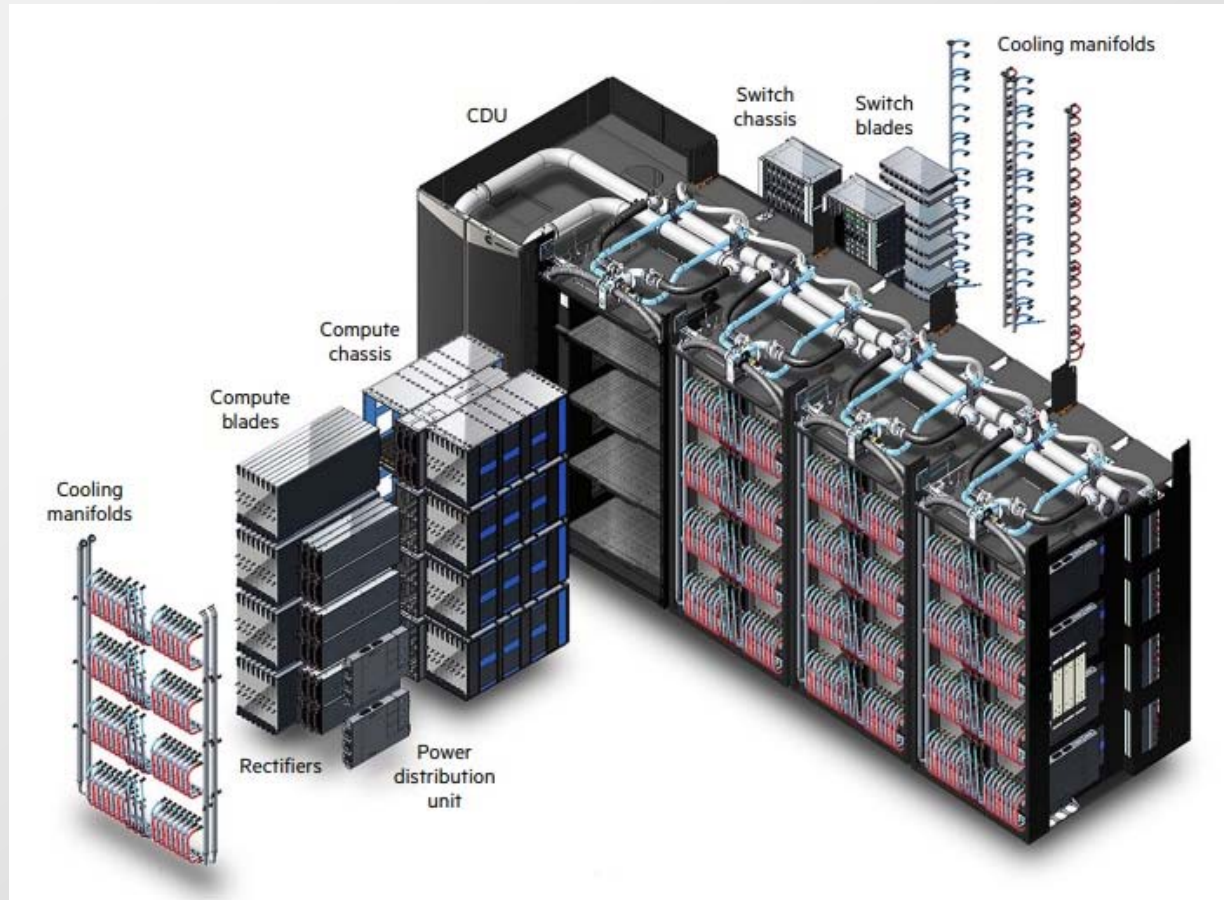
Computers began with the paradigm *The bigger The better*

CDC 7600 supercomputer, 1970s



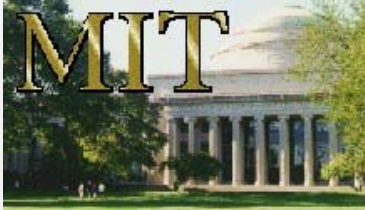
And more powerful computing required industrial instalations

Liquid Cooling Options for Computing Centers-Hyperion



And more powerful computing required industrial instalations

HPE-Cray-EX-exploded-view



The Microprocessor
Inverted that trend.
From there on, the
Smaller, the Better

1953- Transistorized Computers Emerge The Silicon Engine

Did you know? In 1985, the world's fastest supercomputer was a Cray-2. Today, an iPad2 has as much computing power as the Cray-2 system.



to supercomputers
to smartphones



Approximately
155,000 times faster
than the Apollo 11
guidance computer



Approximately **5,000 times faster**
than the CRAY-2 supercomputer
and about **900 million times**
faster than the Apollo 11
guidance computer.

FLOPS: floating point operations per second

Table 7.3.1.-1 - Period before broadcasting

>600 BC	The abacus (=arithmetic unit of CPU) is invented in China
387 BC	Foundation of Plato's Academy
1450	Printing press invented (Johannes Gutenberg)
1876	First telephone patent (Alexander Bell)

Table 7.3.1.-2 - Period between broadcasting and microcomputer + world wide network

1906	First broadcast of human voice, AM radio (Reginald Fessenden)
1930	18 million radios owned by 60% USA households
1936	Regular TV broadcast begins in UK
1956	72 % USA households own a TV
1968	First ARPANET (IMP), installed at UCLA (precursor to INTERNET)

Table 7.3.1.-3 - Period after microcomputer + world wide communications network

1971	First microcomputer in USA
1972	Created the InterNetwork Working Group, creating the INTERNET
1975	First Personal Computer (PC) introduced
1991	First Internet Web Server and Web Browser (CERN)
2001	529 million people on-line (Internet)

In Ferraz de Abreu, P/. 2002 "New Information Technologies in Public Participation: A Challenge to Old Decision-making Institutional Frameworks"

Information Technology	Features / Attributes	Decision Models
<p>Voice</p> <p>Manuscript</p>	<ul style="list-style-type: none"> • from "few" to "few" • limited reach • without auxiliary processing • cheap, potentially universal access (low cost to enter the market) • low control / regulatory costs 	<p><u>Direct Democracy</u></p> <p>Heterogeneous Empires</p>
<p>Press</p> <p>Radio</p> <p>TV</p>	<ul style="list-style-type: none"> • from "few" to "many" • non-limited reach • with processing in source • expensive, restricted access (high cost to enter the market) • average control / regulatory costs 	<p><u>Representative Democracy</u></p> <p>Homogeneous Dictatorships</p>
<p>Satellite network</p> <p>Fiber optics net</p> <p>μcomputer</p> <p>Internet</p>	<ul style="list-style-type: none"> • from "many" to "many" • non-limited reach • with processing in source and destination • moderate access cost, potentially universal (low cost to enter the market) • high control / regulatory costs 	<p><u>Participatory Democracy</u></p> <p>Technocrat Dictatorships</p>

Did you know? In 1985, the world's fastest supercomputer was a Cray-2. Today, an iPad2 has as much computing power as the Cray-2 system.

”

Citizen Computing Nets enabled superCPU

UNIVERSITY OF CALIFORNIA, BERKELEY



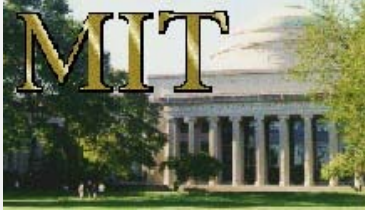
Public Affairs, (510) 642-3734

NEWS RELEASE, 8/16/99

More than a million people world-wide have signed up with UC Berkeley's SETI@home to search for intelligent life in the universe

By Robert Sanders, Public Affairs

- BERKELEY--The popularity of UC Berkeley's [SETI@home](#) screen-saver - software that allows anyone with a desktop computer to aid in the search for intelligent life in space - has skyrocketed in the three months since its release, with the number of participants world-wide now topping a million.



Did you know? In 1985, the world's fastest supercomputer was a Cray-2. Today, an iPad2 has as much computing power as the Cray-2 system.

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Citizen Computing Nets enabled superCPU



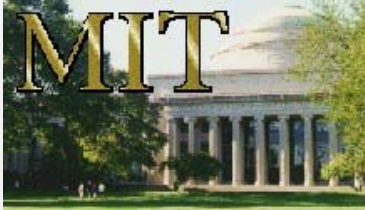
The Mercury News



Millions of volunteers around the world have downloaded the SETI@home screen saver over the years, to help analyze radio telescope data and search for extraterrestrial intelligence, according to the group. SETI stands for Search for Extraterrestrial Intelligence.

It requires huge amounts of computing power, so the program broke the data that into chunks that an ordinary PC could handle. Since it was a screen saver, it runs when volunteers are not actively using their machines.

It created a huge, virtual supercomputer, the group said.



Did you know? In 1985, the world's fastest supercomputer was a Cray-2. Today, an iPad2 has as much computing power as the Cray-2 system.

Citizen Computing Nets
enabled superCPU

BOINC computing power

Totals

24-hour average: 12.817 PetaFLOPS.

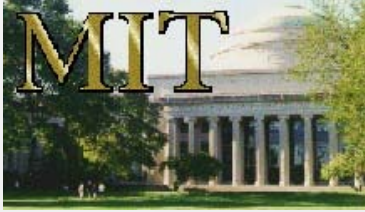
Active: 40,068 volunteers, 131,700 computers.

Daily change: +16 volunteers, -100 computers.

[Top 100 volunteers](#) · [Statistics](#)

Featured volunteer

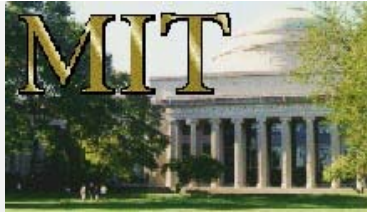
Farscape is contributing 66,786 GFLOPS.



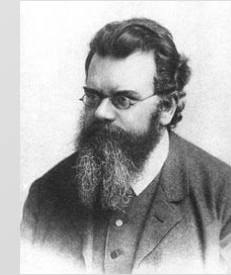
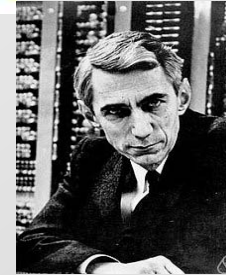
**Technology Developments, can be the great
Empowerment...**

Equalizer

(From e-Planning PhD courses, 2009-2022, PFA)



ICT Qualitative Leap:



2. The Nature of Information Technologies

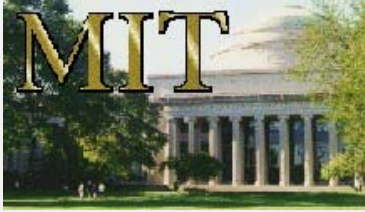
- Thermodynamics and information theory (negative entropy)

1948

1906

(**$I = \log_2 1/P$** ; **$S = K \log_e P$** *K -> Ct. Boltzman*)

- Engine efficiency gains / energy transfers (heat transfer & "feedback"/regulated systems, Watt)
- Extension of brain vs. Extension of muscle.



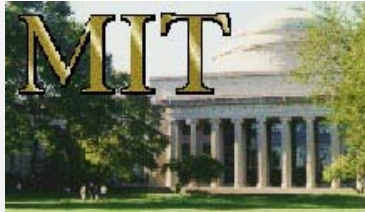
3. ICT Role and transversal Societal impact

e-Planning Qualitative Leap Theory - why and how

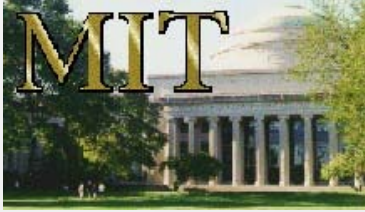
(e.g. economy, business, sovereignty, regulation and administration, etc.)

- **New Production Modes** (ex. fabric & stock of "hardware" products vs. software cloning; added-value and appropriation of innovation, new (re)production of Capital)
- **New Competition Modes** (ex. Changing brand vs. software learning curve + standard compatibility; e-escolas, captive markets; cost of market entry; the cost of "free")
- **New Business Models** (ex. Microsoft vs. OpenSource; temporal contract lock; ISPs non-neutrality; "free" vs. advertising, profiling monetizing; programmed obsolescence)
- **New Organization Modes** (ex. Time-shared mainframe vs. PC; "chain of tenure" -> paper vs. email; network vs hierarchy; remote work; erosion of privacy, ICT ubiquity)

(From e-Planning PhD courses, 2009-2022, PFA)



Sources of Power	How Information and Communication Technologies can impact
Information Knowledge Intelligence	<ul style="list-style-type: none"> • Speed (Real-time) • Quantity / Quality • Range / Breadth / Reach • Access – tendencially open& wider - restriction implies added costs.
Force / Violence vectors Cinetic weapons	<ul style="list-style-type: none"> • Weapon contro • Mass production - Quantity / Quality- dicotom veryy cheap vs very expensive • Weapons of Mass Destruction - Amplified gravity of impact (immediate and long-term) • Precision – decreased cost / benefit • Weapon Power and Potency (Power projection reach) • Virtual weapons - Cyber weaponry • Intelligent weapons, Guided vs fire & Forget • Programability, Adptability, Portability • Distributed Architecture , Variable Geometry parametrizatio
Financial / Capital + Economy Property Ownership	<ul style="list-style-type: none"> • Lower Production & Transaction Costs, increased Transaction Speed, • More Competing Advantage of scale .- push towards Oligopoly / Monopoly • Open Aceso top new markets, Erosion of Sovereignty and Border control • Emission of virtual coin and virtual territory coin, so far a reserve of Sovereign land-based • Increase in Programability Advantage in industrial machinery and Production
People Choices Behaviour Free-will ("Hearts & Minds")	<ul style="list-style-type: none"> • Impact Decision – and Decision-making Process • Participatory Pressure due to ease of participation • Subliminar manipulation sophistication increase • People inter-connection and networking amplified and changes in nature • Allows appropriation of inovation by wider range of audiences • Challenges to traditional identity and Cultural References - Virtual Bridges over Walls • Literacy levels, new artisan empowerment



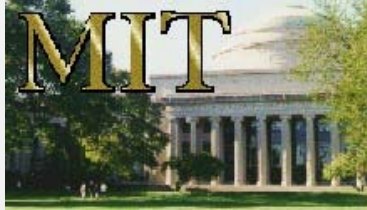
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Did you know? In 1985, the world's fastest supercomputer was a Cray-2. Today, an iPad2 has as much computing power as the Cray-2 system.



Industry quickly
Re-organized.
It invented the "Cloud"
...and the "Free"





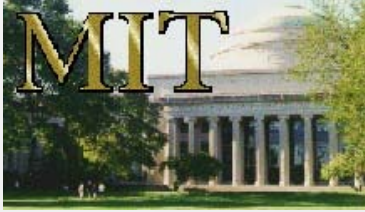
Did you know? In 1985, the supercomputer was a Cray iPad2 has as much compute the Cray-2 system.



Industry quickly Re-organized. It invented the "Cloud" ...and the "Free"



... And back to supercomputers centralized



• Digital Power: Reality Check

Some recent examples

- Facebook, Whatsup, Google, Twitter, Skype, Apple, etc.

Pseudo-Networks:

Herding people to "Bubbles" or Lines of "Followers" ("Influencers")
vs. True Network (nodes in graphs) empowerment

The "Curator" model

Content censorship ("regulating") power by private corporations
vs. citizen power, through democratic institutions

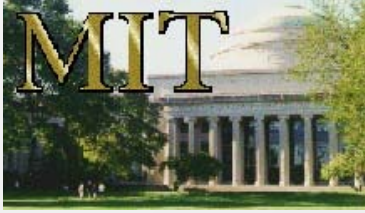
constant messaging, alerts, etc

"Smart" phones, etc

"Push" technology / hardware designed as a **consumption vector**
vs. free choice, privacy and real entrepreneur empowerment

Software as service (subscription), forceful ads, profile monetizing
vs. true ownership (**consumer property rights erosion**)

(From e-Planning PhD courses, 2009-2022, PFA)

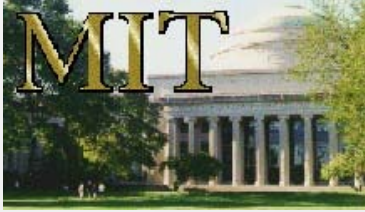


- Digital Power: Reality Check

On **Technology Developments**, we must ask just like did Roman Consul **Lucius Cassius**:

Cui Bono ?

(From e-Planning PhD courses, 2009-2022, PFA)

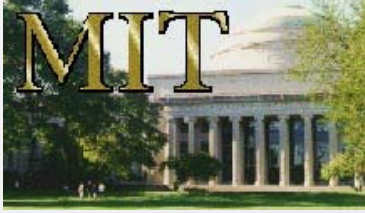


- Digital Power: Reality Check

Omar Razzaz Property Rights Theoretical Framework

- Owner is who can exclude others from benefiting
- Property Rights are a "bundle" of rights, not a single one

(From e-Planning PhD courses, 2009-2022, PFA)



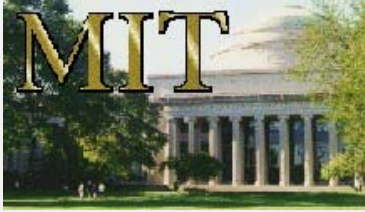
- Digital Power: Reality Check

Omar Razzaz Property Rights Theoretical Framework

Is at the core of the e-planning theories on

- **The unequal appropriation of the technology innovation added-value**
- **The Cost of "Free"**

(From e-Planning PhD courses, 2009-2022, PFA)



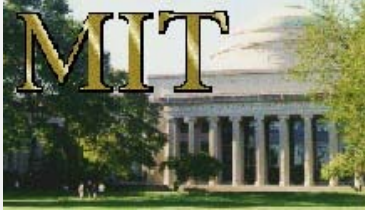
- Digital Power: Reality Check

The Cost of "Free"

An engine to transfer costs to users & non-users
A trap to appropriate individual information

WHO IS MORE VULNERABLE TO THE TRAP
OF "FREE" SERVICES ?

(From e-Planning PhD courses, 2009-2022, PFA)



• Digital Power: Reality Check

Some recent examples

- Government, Private Corporations that rely on ICT* (most of them)

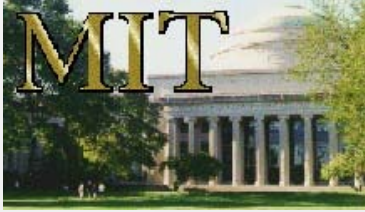
Erosion of Privacy and Appropriation of Personal Data

- **Government PRISM known (and predictable) before Snowden disclosure**
- **Microsoft "phone home" opens "pandora box"; Visio TV, Siri is listening, etc.**
- **Private Sector Privacy invasion and manipulation even larger than State**
- **BigBrother real scale and depth makes Orwell look like a naif simpleton**

ICT **Ubiquity** is not just *enabling* this, it is increasingly *designed* for this

* **ICT-Information & Communication Technologies**

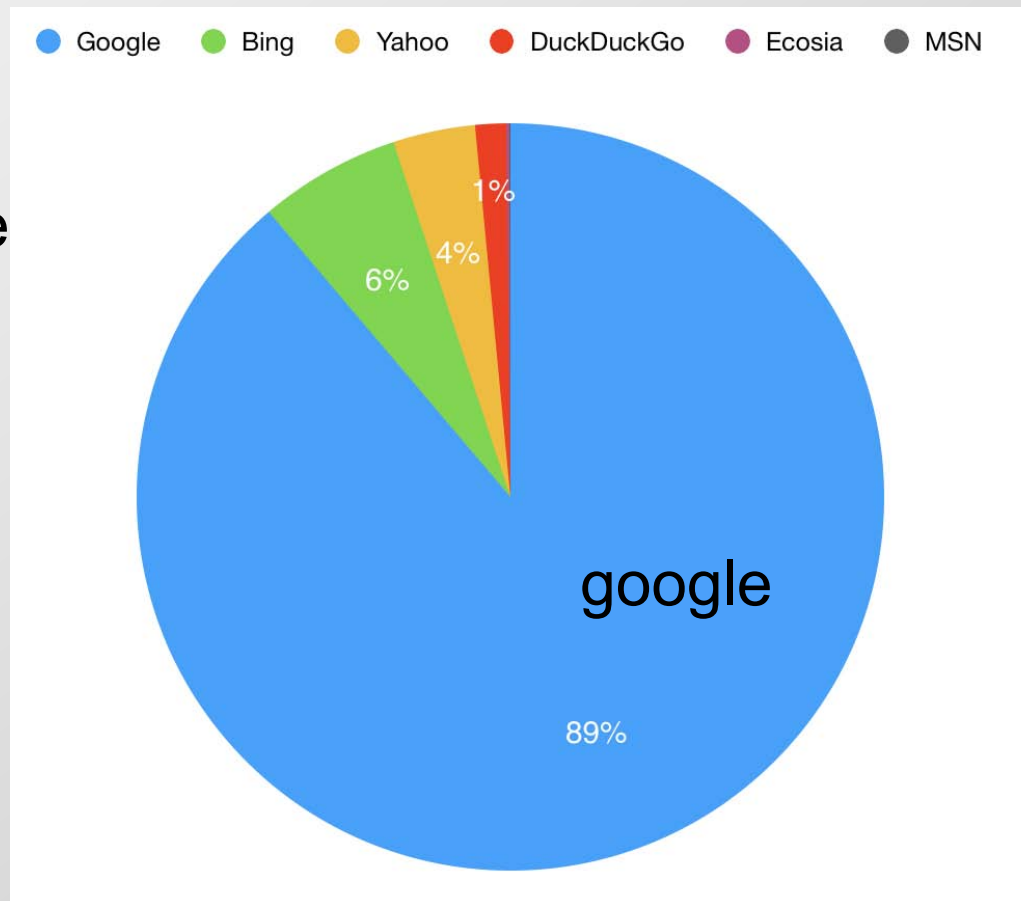
(From e-Planning PhD courses, 2009-2022, PFA)



- e-Planning theory explains the paradox
Free Competition? Entrepreneurship?

USA
search
market share
2020

Google = 89 %



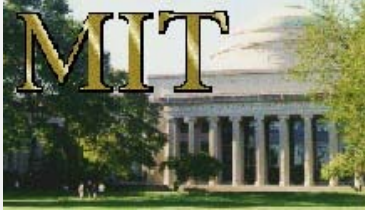
- e-Planning theory explains the paradox

Free Competition? Entrepreneurship?

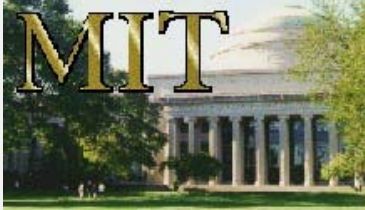
USA
on-line
shopping
market
share
2018

Amazon = 41%





- **Dangerous Paradox**
- **ICT Qualitative Leap Theory**
- **ICT unequal Added-value Theory**
- **Cost of Free - The Cost of Love ex.**



• The "Cost of Love":

<https://docs.google.com/forms/d/e/1FAIpQLSfafuw82kCsDcg-0/> Search

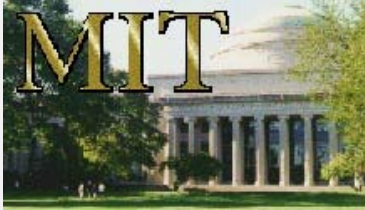
A LOVE LETTER to Boston activists, educators & visionaries!

In the spirit of love and appreciation, we're drafting a communal love letter to Boston legends and movement makers Tunney Lee, Chuck Turner & Mel King. The ask is small and the collective impact will be big:

- **share one word** dedicated to Tunney Lee, Chuck Turner and Mel King
- **share one sentence** about what you've learned from them or how their lives have affected yours
- and, if you like, **share a picture** that shows what they mean to you

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Google Forms



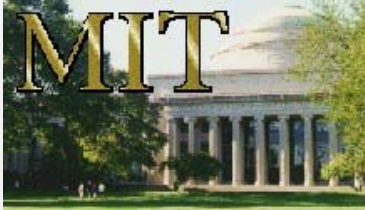
- The "Cost of Love":

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Google Forms



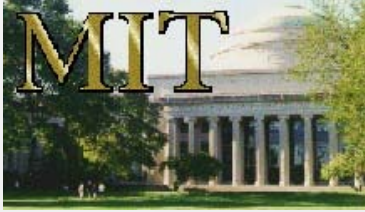
- The "Cost of Love":

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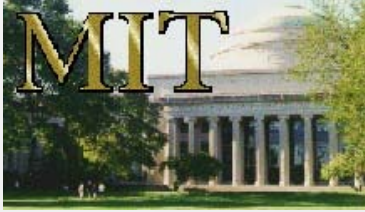


- Digital Power: Reality Check

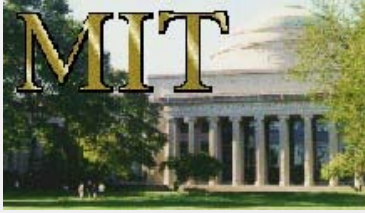
On **Technology Developments**, we must ask just like did Roman Consul **Lucius Cassius**:

Cui Bono ?

(From e-Planning PhD courses, 2009-2022, PFA)



***"Science without Activism, is Frivolous;
Activism without Science, is Blind"***

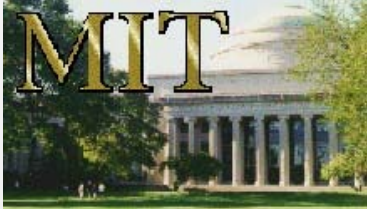


Promises and Pitfalls of Technology and Data in Planning

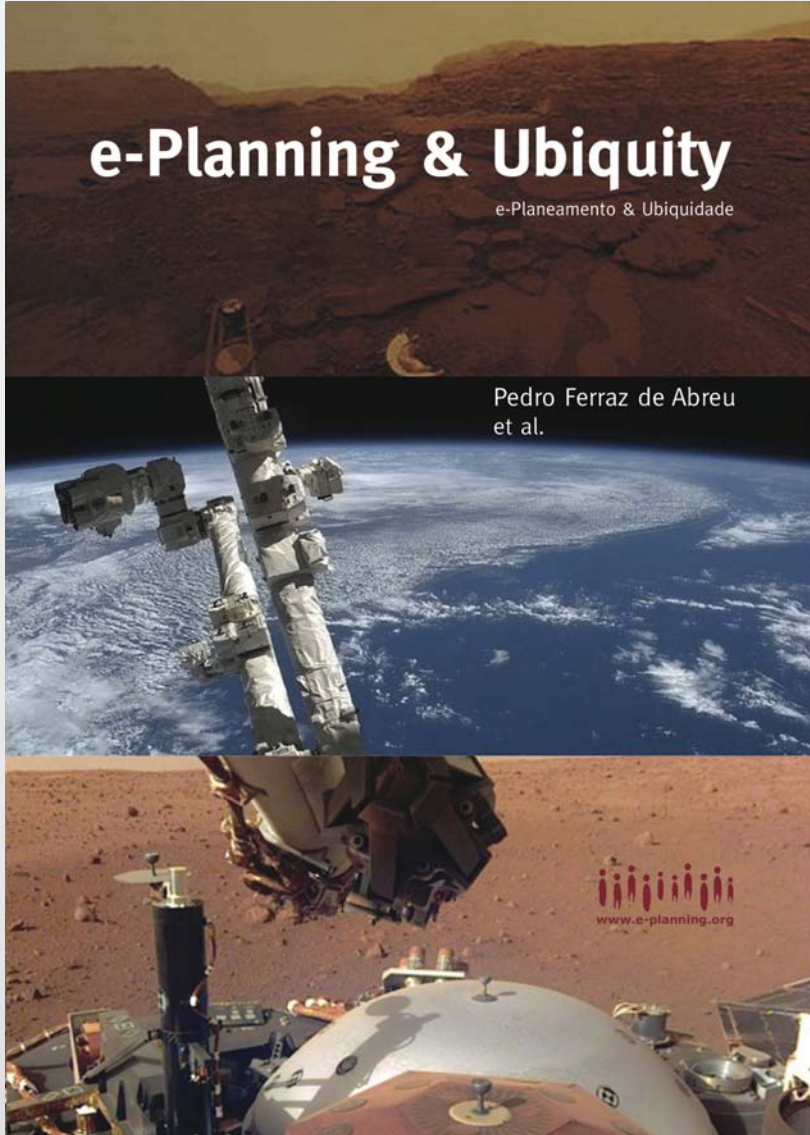
Technology in Planning: We need a theoretical framework

Pedro Ferraz de Abreu

pfa@mit.edu



www.e-planning.org/news_e_bookeplanubiq20210219.html



e-Planning theory: some elements

ICT current Qualitative Leap:
intrinsic pro-equal attributes vs. distorted development to favor unequal empowerment

Asymmetric bandwidth & Non-net neutrality
real rationale & implications on market failures

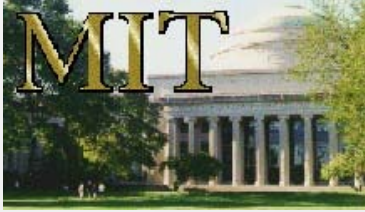
New property rights framework:
capturing dematerialization and digital flexibility to erode citizen property rights and empowerment

Appropriation of technology innovation added-value

ICT Ubiquity and privacy erosion: dual cause-effect

Cost of "free": advertising as a cost-transfer engine also to non-users, so "consumer-pays" rule is gone

New land-use structural effect of ICT:
new gravity model factors, new distance measure



Urban Science & Digital Transition: e-Planning XX years later

THANK YOU !

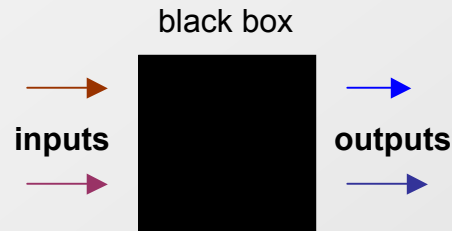
THE END

<http://web.mit.edu/uis/e-planning2023/>

Joseph Ferreira Jr. ; Pedro Ferraz de Abreu

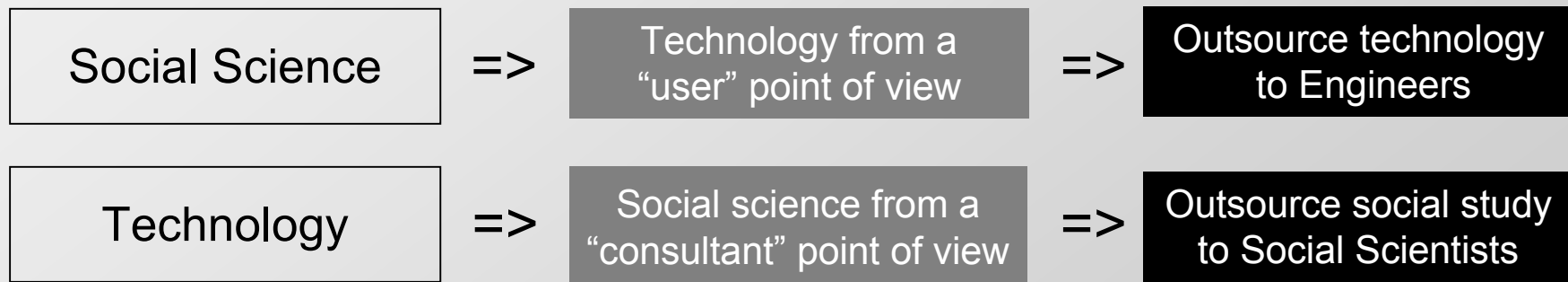
jf@mit.edu

pfa@mit.edu

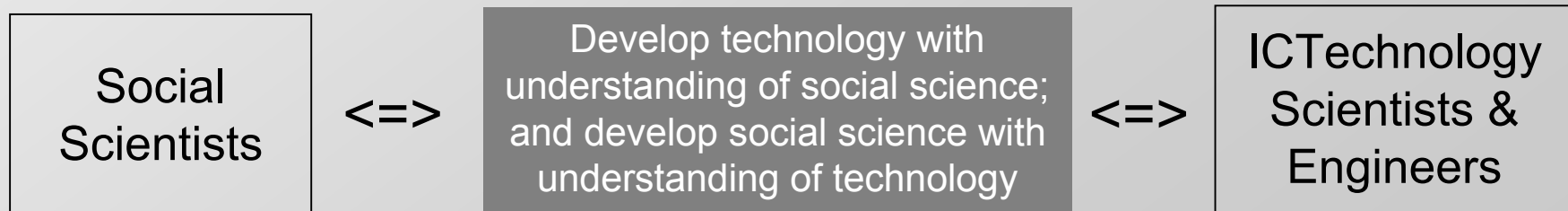


e-Planning embodies a new paradigm of Technology with Social Sciences

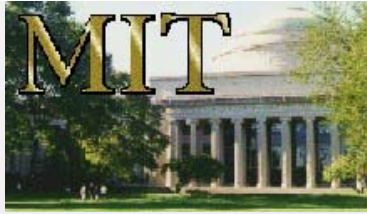
Going past the traditional "blackbox" disciplinary approach...



... the new e-Planning synoptical transdisciplinary approach:



(From e-Planning PhD courses, 2009-2022, PFA)



•Why e-Planning (Designation)

From Social & Political Science:

- At the core of any Planning, is Decision-Making
- At the core of any Decision, is Power
- At the core of any form of Power are People Relationships
- At the core of any Relationship is Communication
- At the core of any Communication is Information transfer
- Thus, ICTechnology plays a key role in all these steps

In modern ICT Qualitative Leap, **e**lectronic ICT is key

ICT - Information and Communication Technologies

In concrete:

(among alternative paths)

(to implement and enforce)

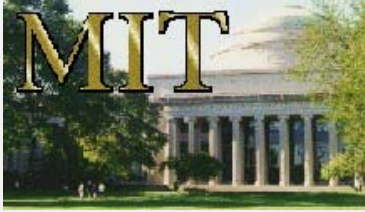
(acquiescence or violence)

(on the decision and outcome)

(on foundation & evaluation)

(amplifies reach & effect)

Planning => **e-Planning**



• Why e-Planning (Designation)

From "Hard" Sciences & Engineering:

Planning's goal is to decrease a degree of chaos (entropy) in society, bringing more predictability in the desired direction (a more "organized system");

e- prefix depicts information entropic nature and key role.

Planning => Decision => from n solution space to 1 => introduce Human & Nature Constraints =>

=> guiding the future => restrict alternative future paths => + organized environment =>

=> more information on predicting future system behaviour => reduce uncertainty

<=> Decrease entropy

Corollary: (e)Planning **requires** Increase of Information ***In all society,***
not just planners, decision-makers

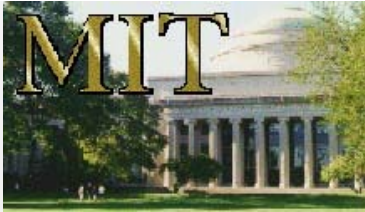
Social Sciences vs. Engineering & 'Hard' Sciences

e-Planning Theory - why and how



Value Systems - Cultural Choc

- Conservation vs. Development (Olmstead)
- Road Cross - Blessing or Curse



1996 - Foundation of CITIDEP - Research Center on Information Technologies & Participatory Democracy

CITIDEP became an international network active on e-Planning agenda



Slovenia

USA

Mexico

Brasil

Argentina

Belgium

France

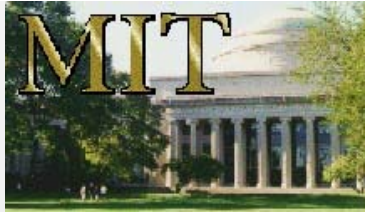
Italy

Cabo Verde

Portugal



www.citidep.pt • www.citidep.net



MIT News

ON CAMPUS AND AROUND THE WORLD



MIT will reshape itself to shape the future, investing \$1 billion to address the rapid evolution of computing and AI — and its global effects. At the heart of this effort: a \$350 million gift to found the MIT Stephen A. Schwarzman College of Computing.

Photo: Christopher Harting

MIT reshapes itself to shape the future

Gift of \$350 million establishes the MIT Stephen A. Schwarzman College of Computing, an unprecedented, \$1 billion commitment to world-changing breakthroughs and their ethical application.

[Watch Video](#)

MIT News Office
October 15, 2018

MIT today announced a new \$1 billion commitment to address the global opportunities and challenges presented by the prevalence of computing and the rise of artificial intelligence (AI). The initiative marks the single largest investment in computing and AI by an American academic institution, and will help position the United States to lead the world in preparing for the rapid evolution of computing and AI.

PRESS MENTIONS

President Reif speaks with Gerry Baker of *WSJ at Large* about the impact of AI on the future of education and work. "Part of the goal of the [MIT Schwarzman] college is, as we educate people to use these [AI] tools, to educate them in a way that empowers human beings, not replaces human beings," says Reif.

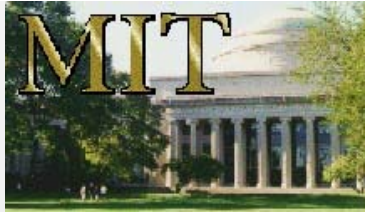
• e-Planning approach...is back at MIT

A new MIT "College", 2018

- **1 billion dollars**, 50 new faculty posts, 25 Computation & IA + 25 Social Sciences & others

- Change Computation & IA to include literacy on social science & ethics;

- Change all other to include literacy on Computation & IA)



e-Planning transdisciplinary research agenda was presented to the Portuguese Parliament



Audiência de delegação e-Planning e CITIDEP
Comissão da Cultura, Comunicação, Juventude e Desporto
26 de Fevereiro de 2019

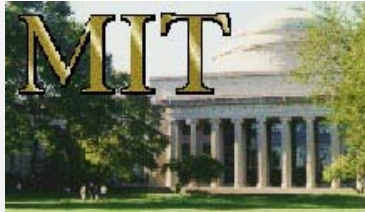


2019

www.e-planning.org/eplan_ar_cccjd_20190226.html

Pedro Ferraz de Abreu, UA, CITIDEP
João Cabral, FA-UL
José Beirão, FA-UL
José Moreira, CITIDEP





e-Planning transdisciplinary research agenda invited hearing at the Portuguese Parliament



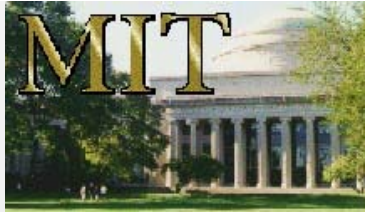
2021

Pedro
João
José
José

www.citidep.net/act/audiencia_ccc12_20211019.html



Pedro Ferraz de Abreu, CITIDEP
Joseph Ferreira Jr., MIT
Albino Almeida, ANAM
Vasco Lupi Costa, Rarissimas



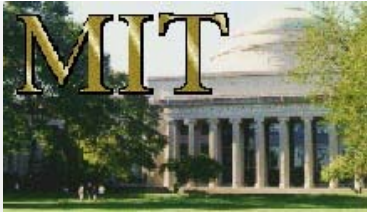
e-Planning Agenda, was created at MIT



Joseph Ferreira Jr.



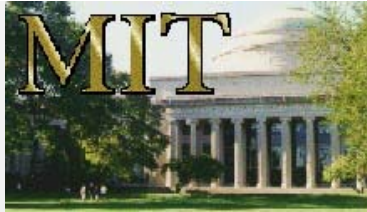
Professor Ferreira (**Joseph Ferreira Jr.**) was the founding director of the Planning Department's Computer Resource Lab and is now head of Urban Information Systems. He teaches analytical methods and computer-based modeling for planning and urban management including courses involving extensive use of geographic information systems (GIS) and database management. Both Prof. Ferreira's undergraduate degree (in electrical engineering) and his PhD degree (in operations research) are from MIT. His research uses GIS and interactive spatial analysis tools to model land use, transportation, and environmental interactions and to build sustainable information infrastructures for supporting urban and regional planning. He is a past-president of the Urban and Regional Information Systems Association (URISA) and has been principal investigator of numerous research projects studying job-housing balance, urban performance measures, and urban information infrastructure. His current research includes the Future Urban Mobility project within the Singapore/MIT Alliance for Research and Technology where he is the SMART Research Professor of Urban Information Systems."



e-Planning Agenda, was created at MIT first "e-Planning Seminar" course, 2003



e-Planning Seminar, MIT course, by Prof. P. Ferraz de Abreu, 2003



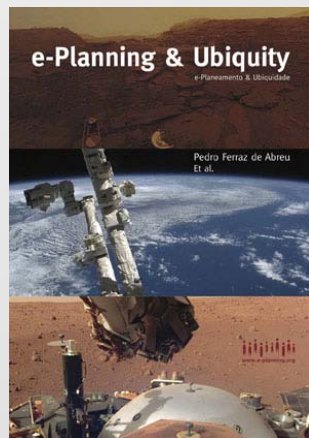
www.e-planning.org/news_e_bookeplanubiq20210219.html

"e-Planning & Ubiquity" Book

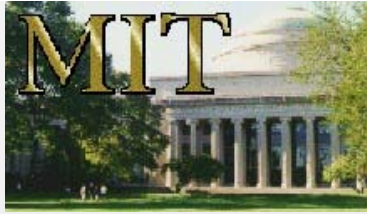
30 Authors
5 Commentators
Portugal, UK,
Belgium, USA,
Brazil

C-Press Edition

Aline Almeida Maia, Anabela Costa Neves, António Pires Fernandes, Bárbara Barbosa Neves, Carlos Eduardo Rabachini Araújo, Claudia Pato Carvalho, Emile de Saeger, Fernando Miguel Seabra, Gary T. Marx, Glória Magalhães Ramalho, Heliomar Medeiros de Lima, Jorge Martins Rodrigues, José Fidalgo Gonçalves, José Manuel dos Santos Moreira, José Magalhães, José Rocha Andrade da Silva, Joseph Ferreira Jr., Luís António Reis Mata, Luisa Schmidt, Mariana Lupi Costa, Mario Augusto Carneiro, Melissa Jeanne Shinn, Michael Batty, Muriel de Oliveira Gavira, Pedro Ferraz de Abreu, Silvio Spinella, Tania Dias Fonseca, Tatiane Borges De Vietro, Vasco Lupi Costa, Zuleide Oliveira Feitosa, Carlos Francisco Lucas Dias Coelho, João Carlos Vassalo Santos Cabral, João Manuel Machado Ferrão, José Manuel Pinto Paixão, Manuel António Cotão de Assunção



magalhaes.ramalho@gmail.com



www.e-planning.org

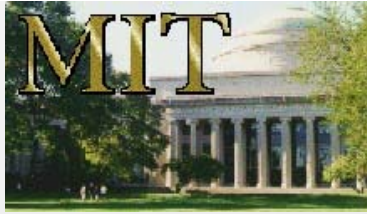
www.citidep.net

www.labtec-cs.net

e-Planning Team - some faces

30 Authors
5 Comentators
Portugal, UK,
Belgium, USA,
Brazil (book)
... Italy, France,
Angola, Serbia,
Cabo Verde,
Poland, Spain...





www.e-planning.org

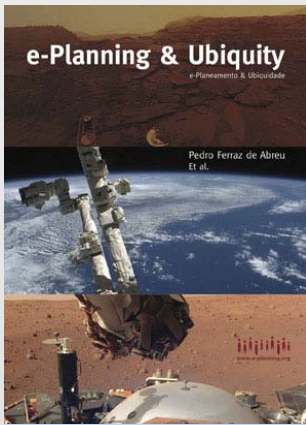
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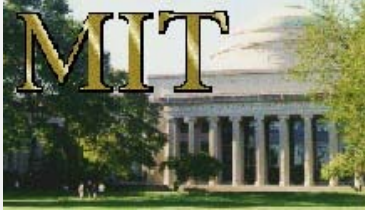
CITIDEP Team - some faces

Portugal, UK,
Belgium, USA,
Brazil...

Argentina,
Canada, Holland,
... Italy, France,
Mexico, Slovenia,
Cabo Verde,
Japan, Australia



CITIDEP Team

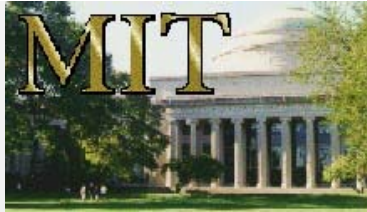


Links:

<http://web.mit.edu/uis/e-planning2023/>

<http://www.e-planning.org/mit2023/>

ferrazdeabreu.link



e-Planning Lab is open to faculty teaching
doctoral and master e-Planning courses

PhD Program (FC-UL / FA-UL / FCT-UNL / UA) Pos-Graduation (UL - F. Architecture)

ULisboa / CITIDEP

Courses at the
joint PhD
& Pos-grad
Program on
e-Planning

- Foundations of e-Planning
- e-Planning Live Laboratory
- Research Methodologies on e-Planning
- e-Government
- e-Health
- Public Participation & Decision Support Systems
- ICT Challenges to the Institutional & Regulatory Framework
- Artificial Intelligence in Planning
- Smart Cities & Digital Citizenship

FA-UL 2019-23

UA 2015-19

FC-UL 2013-14

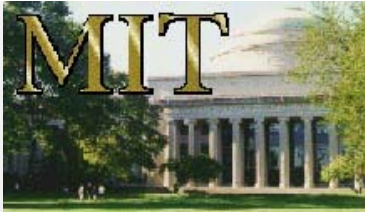
ISCSP-UTL 2008-12

Coordination:



Pedro Ferraz de Abreu
Prof. Catedrático Conv.

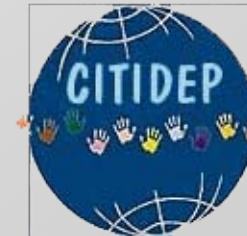
ULisboa / CITIDEP



Pedro Ferraz de Abreu, PhD
pfa@mit.edu

CITIDEP - Research Center on Information Technologies & Participatory Democracy
 President

www.citidep.net



MIT - Massachusetts Institute of Technology
 DUSP - Dept. of Urban Studies & Planning
 Research Affiliate , Visiting Scholar



Universidade de Lisboa e Universidade de Aveiro
 ISCSP-UTL (2007-12); FC-UL (2013-14); UA (2015-19); FA-UL (2019-21)
 Prof. Catedrático Convidado (Full Professor), Researcher at CIAUD-UL (2022-curr)

