

The IV Industrial Revolution: The emergence of a new techno-economic paradigm? Some preliminary findings

Prepared for the Workshop:
Going digital: the future of industry and jobs
Paris, April, 24, 2017

Directorate for Science, Technology and Innovation
Committee on Industry, Innovation and Entrepreneurship

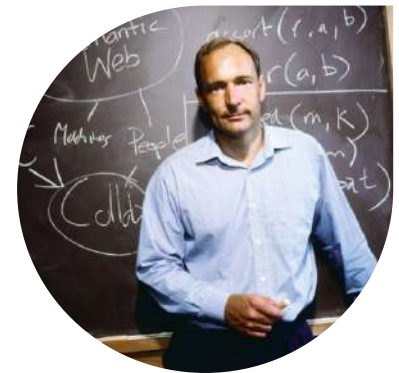
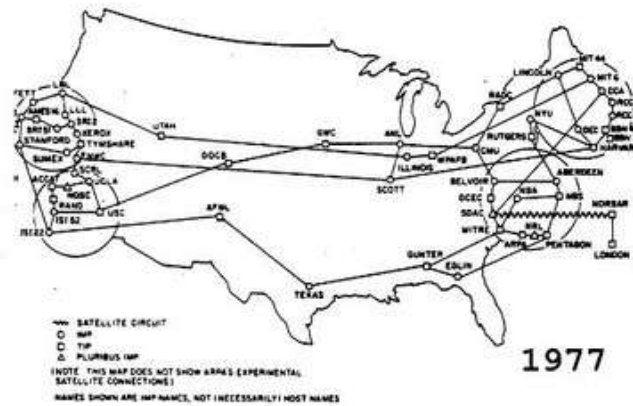
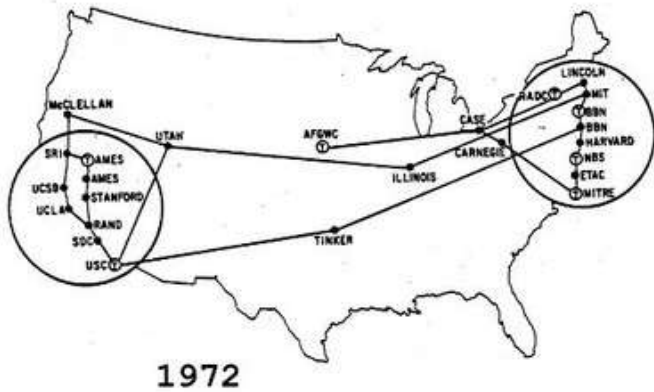
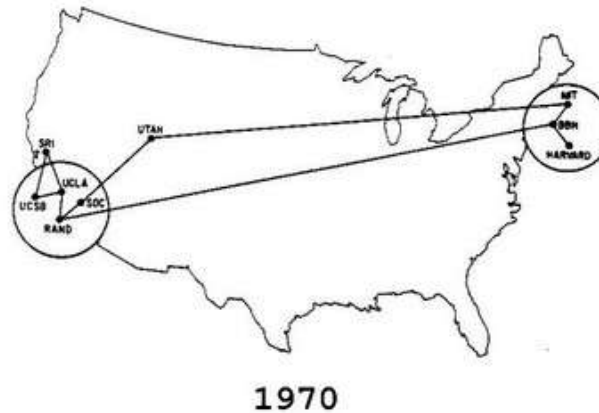
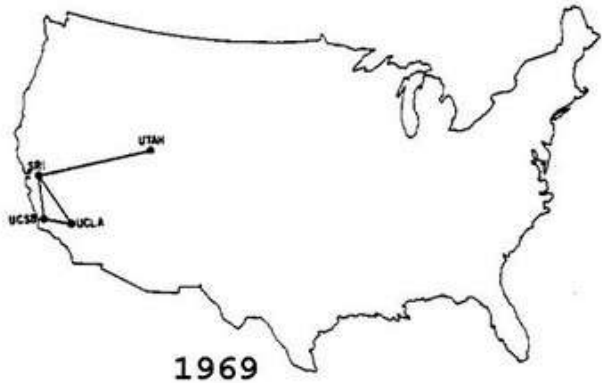
Organisation for Economic Co-operation and Development

Massimo Moggi

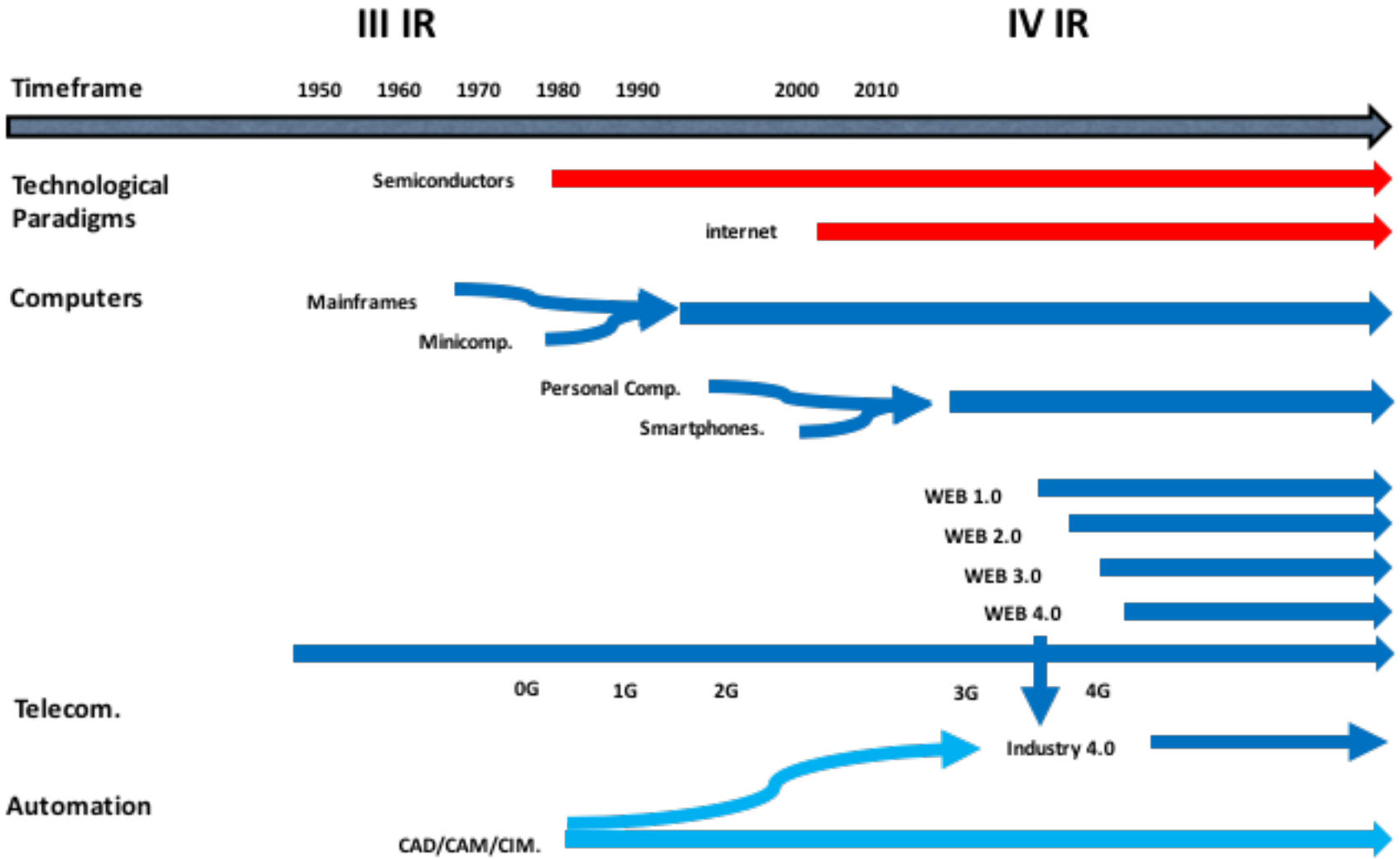
Scuola Superiore Sant'Anna, Pisa
Seldon Group



Early stage Arpa Net and W.W.W.



3RD and 4TH Industrial Revolution



Information Technology Diffusion

Technology	Mainframes	Minicomputers	Personal computers	Smartphones	Web1.0	Web2.0	IoT
Numbers	10^2	10^3	10^4	10^6	10^6	10^9	10^{11}
Users	back office	employees	people	consumer	consumer	communities & society	things

Public Internet Company Market Capitalizations – 1995 € 2015...

Top 15 Companies by Market Capitalization = 1995 @ \$17 Billion € 2015 @ \$2.4 Trillion

Global Public Internet Companies, Ranked by Market Capitalization

As of December, 1995

	Company	Home Country	Market Cap. (\$MM)
1	Netscape	USA	\$5,415
2	Apple	USA	3,918
3	Axel Springer	Germany	2,317
4	RentPath	USA	1,555
5	Web.com	USA	982
6	PSINet	USA	742
7	Netcom On-Line	USA	399
8	IAC / Interactive	USA	326
9	Copart	USA	325
10	Wavo Corporation	USA	203
11	iStar Internet	Canada	174
12	Firefox Communications	USA	158
13	Storage Computer Corp.	USA	95
14	Live Microsystems	USA	86
15	iLive	USA	57
Total Market Cap of Top 15			\$
			16,752

As of May, 2015

	Company	Home Country	Market Cap. (\$MM)
1	Apple	USA	\$763,567
2	Google	USA	373,437
3	Alibaba	China	232,755
4	Facebook	USA	226,009
5	Amazon.com	USA	199,139
6	Tencent	China	190,110
7	eBay	USA	72,549
8	Baidu	China	71,581
9	Priceline Group	USA	62,645
10	Salesforce.com	USA	49,173
11	JD.com	China	47,711
12	Yahoo!	USA	40,808
13	Netflix	USA	37,700
14	LinkedIn	USA	24,718
15	Twitter	USA	23,965
Total Market Cap of Top 15			\$
			2,411

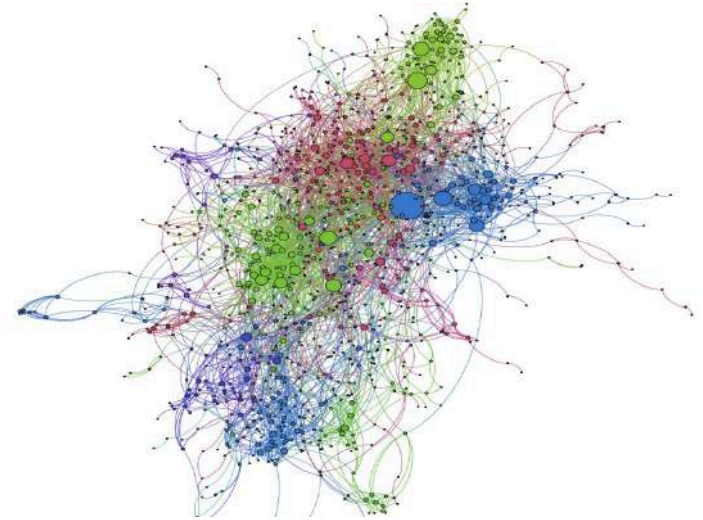
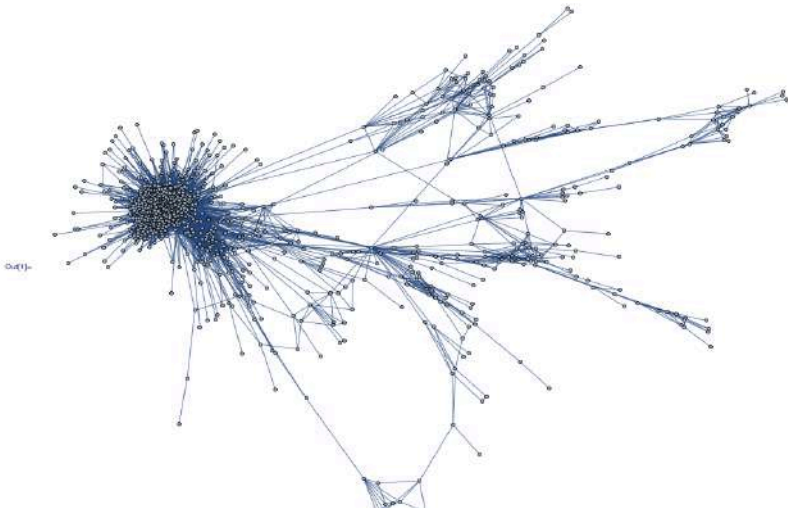
Magic Cookies: the beginning and the incorporation in HTTP

```
HTTP/1.1 200 OK
Cache-Control: private
Content-Type: text/html
Set-Cookie: PREF=ID=5e66ffd215b4c5e6:
TM=1147099841:LM=1147099841:S=Of69MpW
Bs23xeSv0; expires=Sun, 17-Jan-2038 1
9:14:07 GMT; path=/; domain=.google.c
om
```

A script of a Cookie



One of us (infographic) in Google and Facebook



From Market Places to OO (online Outsourcing)

Registered Users:

Crowd working:

- CrowFlower: 5.000.000
- Amazon Mechanical Turk: 500.000
- SamaSource: 5.000

On Line Freelancing:

- Freelancer 11.000.000



Revenue/Employees Rank : Examples

	4TH		3RD			2ND		
	Google	Facebook	IBM	HP	Cisco	P&G	GM	CocaCola
R&D % on revenue	15%	18%	5%	3%	1%	2%	5%	2%
Revenue/Employee (M\$)	1,2	1,5	0,2	0,3	0,5	0,7	0,7	0,3
Revenue (B\$)	68	13	90	110	41	82	156	46
Employees (000)	54	9	379	302	74	118	216	150

NOTE: No Statistical Significance

How a 2.0 Company 'Produces'- A new Segmentation of Labor ?

Use of the Internet

Type of worker

Mixed



- Traditional Employees

Partially On Line



- Freelancing (R&D, Start Ups, Universities Spin Offs, Outsourcers)

Fully On Line



- **Microworkers-Crowdworkers (i.e Amazon Mechanical Turk)**

Fully On Line



- **Machine Learning (Unaware Workers-Meatware – Crowd Turfing)**