

# 미디어 변동과 저항

강정수

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## 미디어 변동과 저항의 역사

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### Socrates, “Phaidros”

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“기록된 것을 통한 기억을 신뢰하는 자는 점차 스스로의 기억을 소홀히하게 되어 결국 영혼을 상실하게 된다.”

‘대화/구술’이 ‘기록/서술’될 때 기억이 파괴되고 언어에 대한 지배력을 상실하게 된다.

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### 인쇄기술 및 출판산업

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Johannes Gutenberg (1450, 생산과정/노동분업)

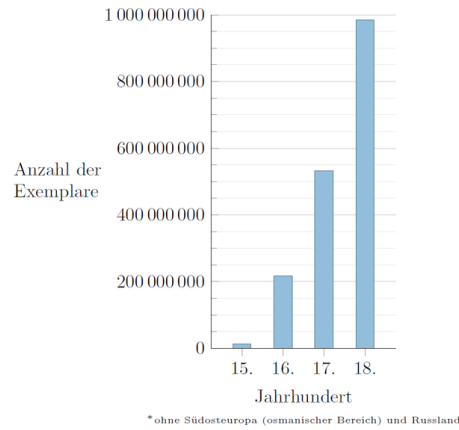
Martin Luther 성경 번역(1521-25) 및 종교개혁

계몽주의, 프랑스 혁명(1789)

Newspaper, 저널리즘

4

Europäische Produktion von gedruckten Büchern ca. 1450–1800\*



5

## 사자생 copyist

- 글을 베껴 쓰는 사람; 필사생
- 그리스, 로마에도 존재
- 중세시대 초 유럽사회에 주요 직업군에 속함
- 금속활자 보급
  - 사자생 직업 위협
  - 금속활자 이전: 사자생의 역할은 대체 불가능
  - 금속활자 도입 이후: 사자생의 '희소성' 사라짐 → 낡은 시스템의 붕괴 → 미디어 변동

6

## 사자생 찬미

- 요하네스 트리테미우스 Johannes Trithemius
  - “사자생에 대한 찬미 De Laude Scriptorum” (1492년)
  - “독실한 수도승은 글씨를 쓰면서 네 가지 혜택을 얻는다. 소중한 시간이 유익하게 사용된다는 점, 글씨를 쓰면서 이 해력이 높아진다는 점, 마음 속에 신앙의 불꽃이 환하게 피어오른다는 점, 그리고 내세에 특별한 보상을 받게 된다는 점이다.”

7

## 축음기(phonograph) 및 음악산업

Edison (1899)

상업화: 1910년대

라디오, TV: 스타 시스템

LP, CD, Download, Streaming

8

존 필립 수자

**John Philip Sousa (1854-1932)**

미국 (낭만파) 작곡가

해군 군악대 훈련 소장

1906

9

**These talking machines are going to ruin the artistic development of music in this country.**

**When I was a boy, in front of every house in the summer evenings, you would find young people together sining the songs of the day, or the old songs.**

**Today, you hear these infernal machines going night and day.**

**We will not have a vocal chord left.**

**The vocal chords will be eliminated by a process of evolution as was the tail of man when he came form the ape.**

10

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**인터넷 효과를 바라보는 5가지 입장**

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11

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**집단지성이란 무엇인가 (We-Think)**

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Charles Leadbeater(2008), We-Think: Mass Innovation, not Mass Production: The Power of Mass Creativity

12

01

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## No Big Deal

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eBay=벼룩시장, Amazon=배달서비스  
→ 새로운 서비스 아니다

Microsoft: 인터넷 과소평가

규모와 속도의 차이가 있을 뿐, 혁명적인 것 아니다!

13

02

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## 아직 평가하기 이르다

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David Egerton, The Shock of the Old

구식 기술이 사라지는데 오랜 시간이 걸린다

disruptive technologies

14

03

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## 긍정적 영향보다 부정적 영향이 크다

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Andrew Keen, The Cult of the Amateur

Jaron Lanier: Digital Maoism

15

전문가의 권위 붕괴  
아마추어가 압도하는 모습

“구글이 우리를 바보로 만들고 있다”

웹 종속성 → 독립적 사고능력 축소

16



04

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## 긍정적 사회효과

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Clay Shirky, Yochai Benkler, Jeff Jarvis

New Communication Structure = SNS

Open Innovation, Open Data, Open Government

17

05

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## 긍정적 효과 그러나 '위험'에 빠져

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바이러스, 악성코드, 검열, 망중립성 훼손

페이스북, 애플, 구글, 아마존, MS: Walled Garden

Jonathan Zittrain, The Future of the Internet, How to Stop it

18

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## 5개 입장이 자신의 입장만 반복

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논쟁 없는 싸움

긍정적 효과 주장 → 이상주의자로 낙인

지적재산권 보호 주장 → 인터넷의 적으로 낙인

19

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## 기차/철도와 경제 및 문화 변동

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20

Clay Shirky



“Revolution doesn’t happen when society adopts new technologies - it happens when society adopts new behaviors”

# 1. 과거 사고패러다임의 지속

마차길을 따라 철로 건설

A 방향으로 마차 하루 100여대 → 선로 7개 건설

B 방향으로 마차 하루 50여대 → 선로 3개 건설

# 2. 객차 디자인



1860년대 비로소 ‘통로’

The image shows a transition from a cluttered Naver News homepage to a simplified, modern version. The left side shows the traditional layout with many small, overlapping news items and advertisements. A large purple arrow points to the right, where a clean, minimalist version of the same page is shown, featuring a clear header, a main article, and a sidebar with a few large, prominent images and headlines.

### 3. 속도에 대한 두려움

빅토르 위고: “아름다운 꽃 한 송이가 얼룩으로 보일  
뿐, 푸른 들판의 곡식이 노란 머리카락으로”

찰스 디킨스: 빠른 속도 두려움, 위스키로 극복

독일의사협회: 빠른 속도(시속 30km/h)는 ‘뇌’ 파괴

25

### 4. Privacy 존중 확산



모르는 사람과 장시간 여행: 처음 겪는 일  
스트레스로 받아들여짐 → 처방: 독서

26

### 교훈

새로운 기술은 때론 사회 병리현상을 동반

이를 극복하려는 과정에서 새로운 행동양식 탄생

끊임없는 실험:

**The Best Way to Predict the Future is to  
Invent it!**

27

### 알고리즘과 노동사회 재편

28

The New York Times  
The Opinion Pages

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH

**Langsamer!**  
Downloaden Sie MacKeeper beschleunigen!

OP-ED CONTRIBUTORS  
**Jobs, Productivity and the Great Decoupling**  
By ERIK BRYNJOLFSSON and ANDREW MAFFEE  
Published: December 11, 2012  
Cambridge, Mass.

**Decoupling**

**Productivity and employment in the United States, 1947-2011**

A WONDERFUL ride has come to an end. For several decades after World War II the economic statistics we care most about all rose together here in America as if they were tightly coupled. G.D.P. grew, and

Sources: U.S. Department of Labor, Bureau of Labor Statistics

**기하급수적 상승: 미국 기업 이익**

Corporate profits after tax (A055RC0A144NBEA)  
Source: U.S. Department of Commerce: Bureau of Economic Analysis

(Millions of Dollars)

Shaded areas indicate US recessions.  
2013 research.stlouisfed.org

FRED

**문제점: 이윤 회복율과 일자리 회복율 차이**

Civilian Employment-Population Ratio (EMRATIO)  
Corporate Profits After Tax with Inventory Valuation Adjustment (IVA) and Capital Consumption Adjustment (CCAdj) (CPATAX)

(Billions of Dollars)

(Percent)

Shaded areas indicate US recessions.  
2013 research.stlouisfed.org

FRED

QUARTZ  
Now reading TOP NEWS

**MANUFACTURING ENDGAME**  
How robots are eating the last of America's—and the world's—traditional...

**How robots are eating the last of America's—and the world's—traditional manufacturing jobs**

By Christopher Mims | @mims | February 15, 2015

**SLOW BURN**  
Why would-be marijuana moguls have their work cut out for them  
4 hours ago

Co-founder Murthy is back, but what troubled Infosys needs most is a break from the past  
12 hours ago

**PROCREATION NATION**  
Why Better Place failed with swappable batteries—and your cars might just use them one day

**PROCREATION NATION**  
By 2050, one in five people in Africa will be Nigerian

Unhappy with its tax bill, Yahoo's CFO hints at rethinking terms of

FINANCIAL TIMES  
ft.com > comment >

## Columnists

Home UK World Companies Markets Global Economy Law Comment  
Columnists Analysis Opinion The A-List Editorial Blogs Letters Corrections

Welcome to FT.com, the global source of business news and analysis. [Regis](#)

February 3, 2013 8:08 pm

### Obama must face the rise of the robots

By Edward Luce

Technology will leave a large chunk of the US labour force in the lurch



Early in his first term Barack Obama joked that he would “keep an eye on the robots in case they try anything”. He should have known resistance is futile. During Mr Obama’s presidency, IBM’s Watson has proved computers can outfox

33

The Economist

Log in Register Subscribe Digital & mobile Events Topics A-Z Newsletter

World politics Business & finance Economics Science & technology Culture Blog

Print edition

## Babbage


Science and technology

Previous Next Latest Babbage Latest from all our blogs

Artificial intelligence

### Difference Engine: Luddite legacy

Nov 4th 2011, 16:10 by N.V. | LOS ANGELES [Like](#) 13.9 [Tweet](#) 1,105



34

## Leontief

보다 정교한 컴퓨터의 도입으로 인하여 마치 농경 시대에 있어서 말의 역할이 트랙터의 도입에 의해서 제거된 것처럼, 가장 중요한 생산요소로서의 인간의 역할이 감소하게 될 것이다

35

## Jeremy Rifkin

2가지 방향으로 진행

1. 생산기술의 발달로 인해 노동의 필요성 자체가 없어진다
2. 노동에 대한 자리가 없어진다

36

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# OODA-Loop Framework

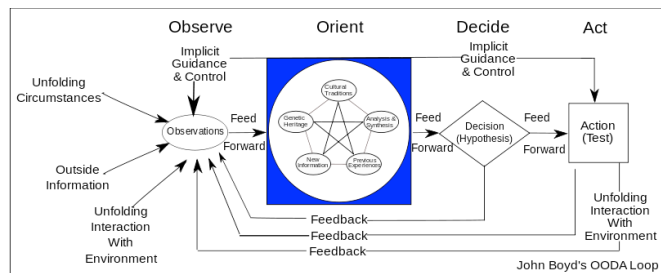
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Observe

Orient

Decide

Act



미공군 대령 John Boyd

2차대전 경험 기반 1950년대 이론화

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## 관찰

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자동화 automation



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## 관찰

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관찰에서 중요한 것

‘자동화’에 연상되는 머리 속 그림

로봇이 일자리를 빼앗고 있다는 표현에서  
연상되는 그림은?

41

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## 다른 관찰

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Babysitter



42

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## 다른 관찰

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Cleaning



43

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## 다른 관찰

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무인 무기 drones



44



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## 다른 관찰

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무인 무기 drones



45

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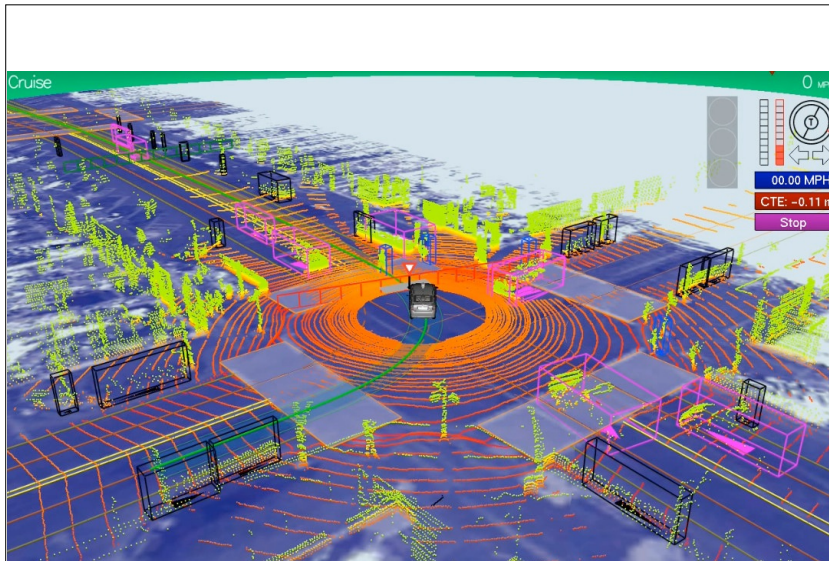
## 다른 관찰

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Self-Driving Car: 1 GB pro Second !!!



46



47

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## 결과/영향

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Self-Driving Cars

미국, 약 350만 운전 노동자  
(택시 운전자, 리무진 운전자 등)

48



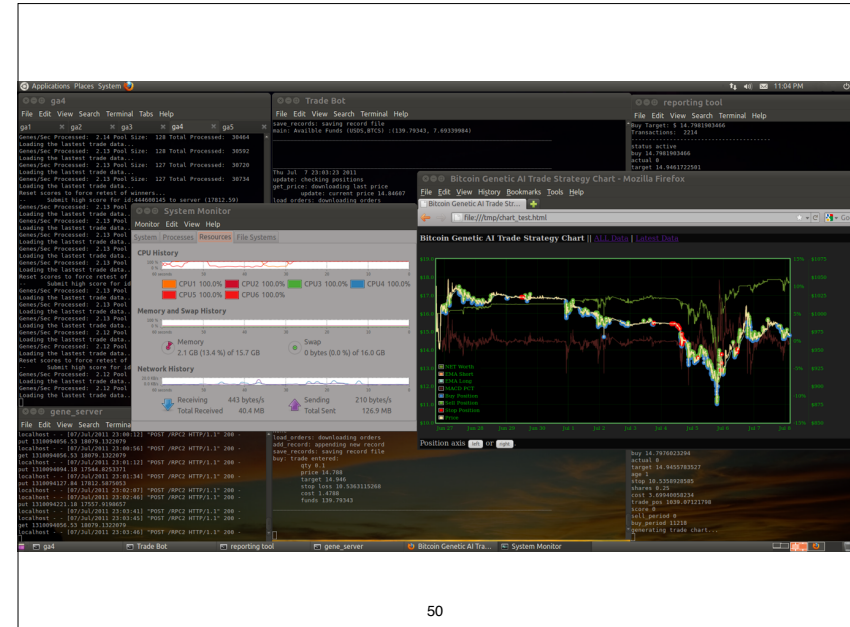
## 다른 관찰

지금까지 살펴본 것: 물리적 실체

알고리즘/프로그램

High Frequency Algorithm

49



50

## High Frequency Trading (HFT)

2009년 미국 증시 거래량 50%

현재 약 80% 추정

[http://en.wikipedia.org/wiki/High-frequency\\_trading](http://en.wikipedia.org/wiki/High-frequency_trading)

51

## 알고리즘 저널리즘/로봇 저널리즘

Stats Monkey

4 대학생, Northwestern University

The screenshot shows a news article from NPR. The title is 'Program Creates Computer-Generated Sports Stories', dated January 10, 2010, at 4:00 PM. Below the title is a play button icon and a 'Listen to the Story' button. To the right of the button, it says 'All Things Considered' and '3 min 18 sec'. There are also links for 'Playlist', 'Download', and 'Transcript'. The main text of the article begins with 'Sportswriters now have new competition — in the form of a computer program called StatsMonkey.'

52

## Press

[L'ère des robots-journalistes](#) Le Monde, March 9, 2010

[Program Creates Computer-Generated Sports Stories](#) NPR's All Things Considered, January 10, 2010

[The Rise of Machine-Written Journalism](#) - Wired.co.uk, 12/16/2009

[US university Coding future of News](#) - AFP 12/15/2009

[A twist on broadcast journalism and sports writing](#) - LA Times, 11/27/2009

[10 Things you didn't know about Baylor](#) - Columbia Missourian, 11/6/2009

[Generation J](#) - Chicago Tribune, 11/5/2009

[Can a computer cover a ball game](#) - Toronto Star, 10/23/2009

[Storyed legacy of sportswriting passed to robot stat monkeys](#) - Yahoo!, 10/21/2009

[The Robots Are Coming! Oh, They're Here](#), - New York Times, 10/19/2009

[Who Needs Reporters When There's Monkeys?](#) - NBC Chicago, 10/14/2009

[Not OK, computer -- the sportswriter strikes back](#) - CBS Sports, 8/13/2009

53

The screenshot shows the top of a New York Times article page. The header includes 'The New York Times' and 'Business Day'. Navigation tabs for 'WORLD', 'U.S.', 'N.Y./REGION', 'BUSINESS', 'TECHNOLOGY', 'SCIENCE', 'HEALTH', 'SPORTS', and 'OPINION' are visible. Below the navigation is a search bar and a secondary menu with 'Global', 'DealBook', 'Markets', 'Economy', 'Energy', 'Media', and 'Per'. A large blue banner reads 'THE NEW BLACKBERRY Z10'. The article title is 'When the Software Is the Sportswriter' by RANDALL STROSS, published on November 27, 2010. The main text begins with 'ONLY human writers can distill a heap of sports statistics into a compelling story. Or so we human writers like to think.' A sidebar on the right contains social media sharing options: RECOMMEND, TWITTER, LINKEDIN, SIGN IN TO E-MAIL, PRINT, REPRINTS, and SHARE. A small image of a 'BUCKEYES BEAT' article is shown with a 'Enlarge This Image' link. At the bottom, a caption reads: 'The StatSheet site for Ohio State men's basketball. One recent story on the site had 10 sentences and 156 words — written entirely by'.

## StatSheet

54

The screenshot shows a Wired magazine article page. The top navigation bar includes 'WIRED' and categories like 'GEAR', 'SCIENCE', 'ENTERTAINMENT', 'BUSINESS', 'SECURITY', 'DESIGN', 'OPINION', and 'VIDEO'. A sidebar on the left features 'THE NEW YORKER LEADER' and 'HEALING POWERS'. The main article is titled 'Can an Algorithm Write a Better News Story Than a Human Reporter?' by STEVEN LEVY, dated 04-24-12. It has 5,131 shares, 2,560 tweets, 444 likes, and 745 shares. Below the article is a large image of a person's silhouette with a lightbulb and circuitry. To the right, there are teasers for 'Are robots and content farms the future of the news?' by Mathew Ingram and 'Why Do So Many People Pay for Writing School Still?'. At the bottom, there is a section for 'The Atlantic' with a sub-headline 'Can the Computers at Narrative Science Replace Paid Writers?' by JOE FASSLER, dated APR 12 2012, 8:03 AM ET. It has 793 shares and a sub-headline 'A look at new software that could transform journalism'.

55

The diagram illustrates the NarrativeScience Quill workflow. It starts with 'Receive Data' (represented by a funnel icon), followed by 'Create Story' (represented by a document icon with a checkmark), and finally 'Deliver Insight' (represented by a lightbulb icon). Below each step is a brief description of what Quill does. At the top, it says 'NarrativeScience Start gaining insight from your data today! GET STARTED'. At the bottom, it says 'NarrativeScience 2012년 Kristian Hammond “5년 안에 Pulitzer상 받겠다”'.

56

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## 다른 관찰

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Computational Legal Studies,  
Michigan State University

Reinvent Law London 2013

Reinvent Law New York 2013

57

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## 다른 관찰

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Pattern Detection: (Big) Data Mining, Data Analytics

법, 의학, 스포츠 저널리즘

58

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## 다른 관찰

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### Outsourcing

The screenshot shows a news article from English.news.cn. The main headline is "Foxconn Allegedly Replacing Human Workers With Robots" by John Biggs, dated Tuesday, November 13th, 2012. The article text states: "Foxconn is reportedly planning to buy 1 million robots to replace human workers and it looks like that change, albeit gradual, is about to start. The company is allegedly paying \$25,000 per robot – about three times a worker's average salary – and they will replace humans in assembly tasks. The plans have been in place for a while – I spoke to Foxconn reps about this a year ago – and it makes perfect sense. Humans are messy, they want more money, and have a half-a-million of them in one". There is a small image of a blue robotic arm on the left and a photo of a Foxconn building on the right. The page number 59 is at the bottom.

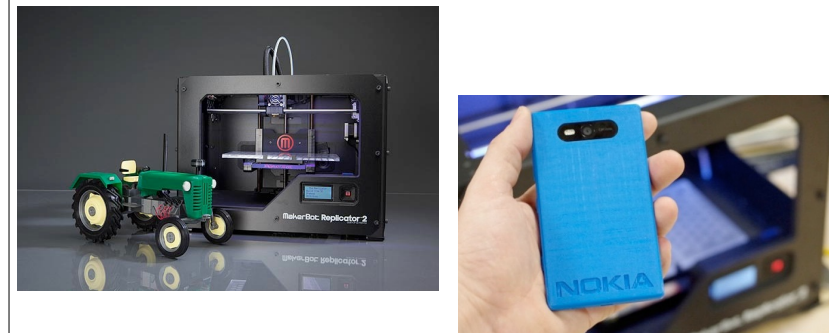
59

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## 다른 관찰

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### 3 D Printer



60

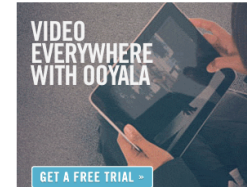
## 반응 관찰

새로운 흐름 아니다!  
새로운 기술은 언제나 일자리를 대체하고 새로운  
일자리 만들어 왔다

과거 90% 노동자는 농업, 현재 2%

그럼에도 불구하고 일자리 있어

61



### Internet creates 2.4 jobs for every job it destroys: McKinsey

May 26, 2011, 03:49pm IST

Tags: united nations | McKinsey Global Institute | McKinsey | Internet | GB | China

NEW DELHI: The Internet, which has transformed the way we live, work, shop, socialise and now, is also emerging as a powerful catalyst for job creation, says a survey by global management consultancy McKinsey.

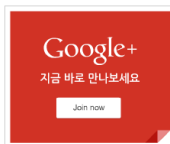
According to a report by McKinsey Global Institute, the Internet has "created 2.4 jobs for every job that it has destroyed."



62



**“10대 업종에 속한 기업들은 ... 매출이 100억원 늘어날 때마다 6.2명의 일자리 생겨”**



63

## 문제점: 중간영역 일자리 상실

지금까지 기술 혁신은  
저가 노동력 대체

최근  
중간영역(변호사, 금융인, 기자 등)  
일자리 대체

일 자리를 잃은 중간영역은 어디로?



64

**“Technology is no longer creating new jobs at a rate that replaces old ones made obsolete elsewhere in the economy.”**

**- The Economist**

<http://www.economist.com/blogs/babbage/2011/11/artificial-intelligence>

65

**“In the years ahead, more sophisticated software technologies are going to bring civilisation ever closer to a near-workerless world.”**

**- Jeremy Rifkin, The End of Work, 1995**

66

**“It may be hard to believe, but before the end of this century, 70 percent of today’s occupations will likewise be replaced by automation.**

**Yes, dear reader, even you will have your job taken away by machines.**

**In other words, robot replacement is just a matter of time. this upheaval is being led by a second wave of automation, one that is centered on artificial cognition, cheap sensors, machine learning, and distributed smarts.**

**This deep automation will touch all jobs, from manual labor to knowledge work.”**

**- Kevin Kelly, Wired, Better than Human 2012**

<http://www.wired.com/gadgetlab/2012/12/ff-robots-will-take-our-jobs/all/>

67

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## **방향설정 Orient**

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위에서 관찰한 내용에 어떻게 반응해야하나?

Marshall McLuhan

**“There is absolutely no inevitability as long as there is a willingness to contemplate what is happening.”**

**To Contemplate !**

68

## 방향설정 Orient

# 두 개의 극단적 반응?

69

## “Luddite(1811-1812)”, “Swing Riots(1830)”

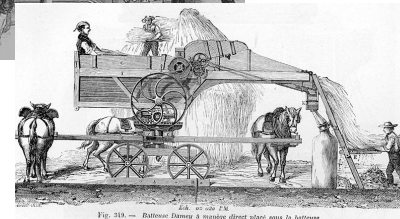
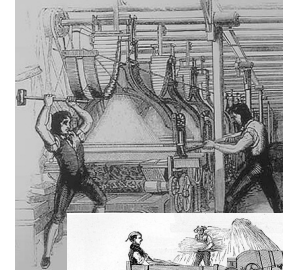
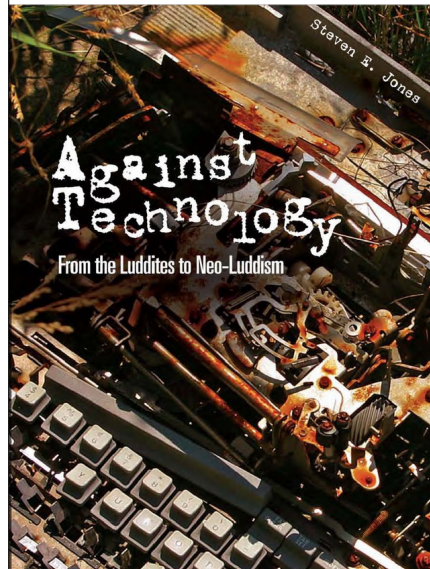
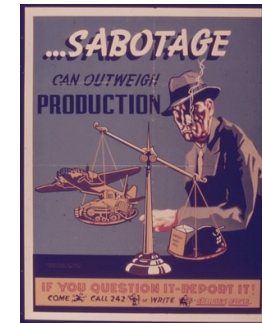


Fig. 313.— *Bullion Drovers & manure direct place over la taltann.*

70

## Sabotage



Steven E. Jones, 2006

71

## 방향설정

## Dystopia

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Labor

### Tesco Monitors Employees With Motorola Armbands

By Claire Suddath

Follow @clairesuddath

February 13, 2013

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Related



There's a fine line between micromanaging and house arrest, and British grocery store chain Tesco (TSCO) seems determined to cross it. According to the *Irish Independent*, employees at the company's Dublin distribution center are forced to wear armbands that measure their productivity so closely that the company even knows when they take a bathroom break.

72



**“On the eve of the greatest industrial revolution in history, no sign and portents were forthcoming. Capitalism arrived unannounced. No one had forecast the development of a machine industry; it came as a complete surprise.”**

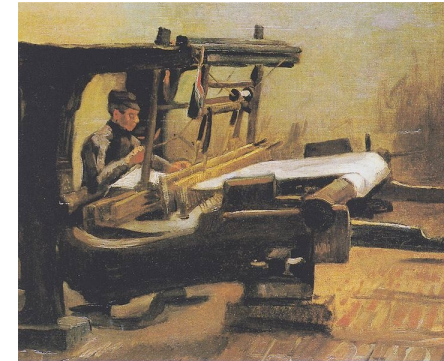
**- Karl Polany, The Great Transformation: The Political and Economic Origins of Our Time, 1944, p. 89)**

73

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## **플라잉 셔틀 (Flying Shuttle, 1733, John Kay)**

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Gogh  
(1884)

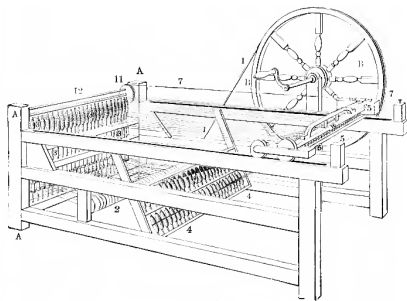
74

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## **베틀 → 방적기**

---

Spinning Jenny (1764)



75

**“capitalism arrived unannounced!”**

76

---

## 또 다른 극단적 반응

---

기술이 우리를 구원할 것이다!

### Borg Complex

“A Borg Complex is exhibited by writers and pundits who explicitly assert or implicitly assume that resistance to technology is futile.”

- Michael Sacasa

77



78

실리콘밸리/VC 관계자  
“우리에게는 다른 선택권이 없다.”

이 또한 매우 위험한 선택

79

---

## 방향설정

---

“The goal of the future is full unemployment, so we can play. That’s why we have to destroy the present politico-economic system.”

- Arther C. Clarke (1960’s)

Utopia? “so we can play”

digital Athens?

인간: 정치, 문화, 역사

기계: 노예 노동

80



---

## 방향설정

---

극단적 가능성에 대한 우려  
다양한 선택 가능성에 대한 논의

한쪽에는 혁신이 일어나고  
다른 한쪽에서는 일자리 줄어들고 있어

생산성이 뛰어난 기계/알고리즘은 더욱 많아진다

81

---

## 방향설정

---

필요한 것?

21세기를 설명할 '단어' 필요

현재 직면한 문제를 어떻게 설명하고,  
현재 직면한 문제를 어떻게 해결할 것인지,

평생 '동일 노동/직업' 가능한가? 그렇지 않다면?

82

---

## 산업혁명

---

기술 혁신

노동의 재조직

사회의 재조직

83

---

## 알고리즘 저널리즘

---

통계(data) → 기사(지식)

알고리즘은 지식을 생산할 뿐 아니라,  
정보를 (재)조직/(재)분류/(재)가공한다

노동의 재조직화 → 기계에 의한 인간노동 대체  
= cultural technology

84

---

## 방향설정 = Act

---

인간과 기계/알고리즘이 함께 할 수 있는 것은?

출발점:

무엇이 일어나고 있는지를  
모든 각도에서 검토하고 연구하는 것,  
사회적 '이해도'를 높이는 것

“To understand a thing is to gain the power to change it.”

- Ramez Naam, Nexus

85

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## 교훈

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2, 3년 이후 어떤 변화가 이뤄질지 단정하기 어려워

분명한 것은 인터넷에 의한 경제, 사회, 문화 재편이  
이제야 비로소 시작되고 있다는 점

86

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## 교훈

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노동생산성과 최저임금제

기본소득에 대한 재조명

87