

# Maker Culture와 알고리즘 사회

강정수

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# **Making Culture**

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# **Panoramas & Concepts**

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**Internet, Digital Technologies**

**다양한 시도/개념/현장**

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# Maker Culture

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생산의 힘

생산의 힘을 우리의 손에

기술 기초 DIY Culture

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# **Maker Culture**

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**metalworking, woodworking, handicraft**

**electronics, robotics, 3-D printing**

**Hackerspaces, Fab Labs**

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# Maker Culture

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**Learning-through-Doing, 구성주의 (constructivism)**

**technical skills**

**participation**

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# Big Data / Open Data

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**빅데이터: 데이터 지배**

**Edward Snowden: the end of naivety**

**open data: algorithmic regulation**

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# **Filter Bubble by Algorithms**

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**News Values , Agenda Setting**

**Search Algorithms**

**Facebook Newsfeed Algorithm**



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# **Network Society**

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**(Social) Networking, women-networking**

**social movement**

**hate culture**

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# **Uberfication of everything**

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**Software as a Service**

**Platform Business: Two-Sided Markets**

**Disruptive Technologies**

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**BUT**

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**“밖에 있는 사람들”**

**Big Data와 Open Data의 차이는?**

**앞서 설명한 개념/프로그램을 어떻게 실현할 것인가?**

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# Get Real

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밖에 있는 사람들

**Inclusion**

**diversity**

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# Get Real

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**risks**

**“밖에 있는 사람들”의 “참여를 가능케 해야”**

**making culture**

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# **Digital Infrastructure**

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**Open Internet, Net neutrality**

**Open Standard**

**User-Rights**

# **Digital Infrastructure**

**= 디지털 사회의 전제 조건**

**= 참여의 전제 조건**

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# Open participative Network

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Q?

네트워크 사회에서 사회/정치 참여는 어떻게 이뤄낼 것인가?

다양한 사회계층의 ‘접근’이 이뤄지고 있나?



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# **Open participative Network**

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**Access!**

**It's not only a technical infrastructure.**

**Access to/for diverse social groups!**

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**blind-deaf / deaf-blind**

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**Lorm Language**

**사회적 소외**

**intelligent Designing**

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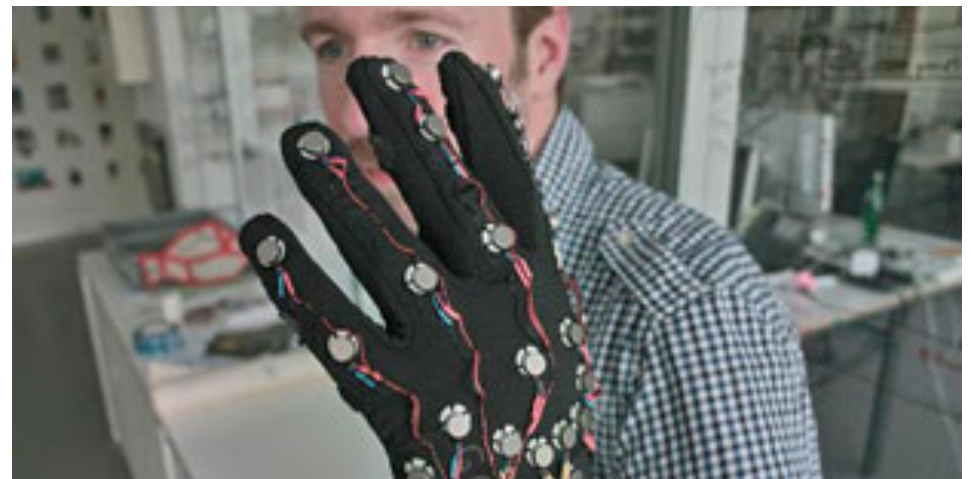
# net-access for blind deaf

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**Design Lab Berlin**

**Mobile Lorm Glove**



# inclusive designing



**LormHand**  
@LormHand

Interaktiv inklusiv: Die LormHand ermöglicht (nicht nur) taubblinden Menschen die digitale Kommunikation.  
Video: [tinyurl.com/pbfhknj](https://tinyurl.com/pbfhknj)

Berlin

[design-research-lab.org/?projects=twit...](https://design-research-lab.org/?projects=twit...)

트윗 354 사진/동영상 14 팔로잉 327 팔로워 187 관심글 299 더 보기 ▾

트윗 트윗과 답글

LormHand 님이 리트윗함

**Design Research Lab** @DRLab\_Berlin · 9월 2일  
Radio Interview @lormhand Ohrfunk 90,8 MHz  
[soundcloud.com/tom-bieling/ra...](https://soundcloud.com/tom-bieling/ra...) #taubblind #inklusion #interaction #design #forschung #lormen

SoundCloud

**initiative des Bundesminister**

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# Designing for diversity

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**not (only) for Digital Elites**

**Network(-ing) 의미는?**

**Net Access 의미는?**

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# Designing for diversity

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**digital divide**

**participative platform**

**more access!**

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**more access**

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**more accesses for the analog world**

**senior computer clubs**

**interfaces between offline and online**

# ‘넛으로 연결된 이웃들’ 프로젝트 by SCC Berlin



hybrid letter box

오프라인과 온라인의 연결





# e-textile

## Swatchbook Exchange

The Swatchbook Exchange provides a platform for exchanging E-Textile samples between practitioners in the field. Everybody who participates in the exchange by submitting a unique swatch design of their own, receives a compiled collection of everybody else's swatches. This means that everybody participating needs to make as many multiples of their swatch as participants. There are no guidelines defining what these samples could or should be, only that they relate to the field of E-Textiles. Preferably each swatch should be able to mount on a 13x16cm area, and while flat swatches lend themselves well to the book format, 3D swatches are also welcome.

## Maurin Donneaud & Laurent Malterre: Matrix



Credits: Maurin Donneaud & Laurent Malterre Year: 2012 References: <http://tapton.drone.ws/fr/index.html> Links: <http://maurin.donneaud.free.fr/?-Keyboard->  
Materials: polyester, copper thread coated with silver. Techniques: knitting Dimensions: 20 x 20  
Description: This knitting textile is made of two layers of fabric that incorporate conductive threads. ... [Continue reading](#) →

## Jie Qi: LED Color Graph



Credits: Jie Qi Year: 2012 video: <http://youtu.be/hZOEfOXIA> Photos: <http://www.flickr.com/photos/jieq/sets/72157634587082013/> Materials: Copper tape, conductive fabric tape, solder, 1206 surface mount LEDs in red, yellow, pink, blue and white, magnets for



swatch book  
24명 디자이너  
knowledge sharing

knit alarm  
smart senior project

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# **Making Culuture / Maker Culture**

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**co-creation of communities**

**R&D, 연구소, 대학교**

**knowledge sharing**

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# Making Culuture / Maker Culture

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**#learn2code, 2014년 10월 11일-17일**

**internet = co-creatable**

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# 도전

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**not only digital elites**

**inclusive access**

**interface bw. analog & digital**

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# 디지털 사회

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참여사회?

명암

기술능력이 적은 사람을 배제하는 사회?

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# 디지털 사회

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**maker culture = 하위문화?**

**maker culture: 전통 노동질서의 붕괴**

**technology for yourself**

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# 디지털 사회

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**chance, gender, diversity**

**knowledge sharing**

**digital elites**

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# 디지털 사회

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## 새로운 정치 패러다임

**포함 vs. 배제 (inclusion vs. exclusion)**



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# 알고리즘과 노동사회 재편

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## Langsamer I

Downloaden Sie MacKeep beschleunigen!

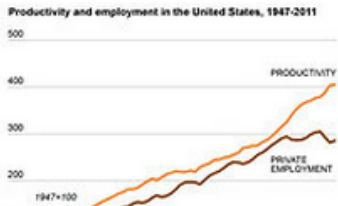
OP-ED CONTRIBUTORS

## Jobs, Productivity and the Great Decoupling

By ERIK BRYNJOLFSSON and ANDREW McAfee  
Published: December 11, 2012

Cambridge, Mass.

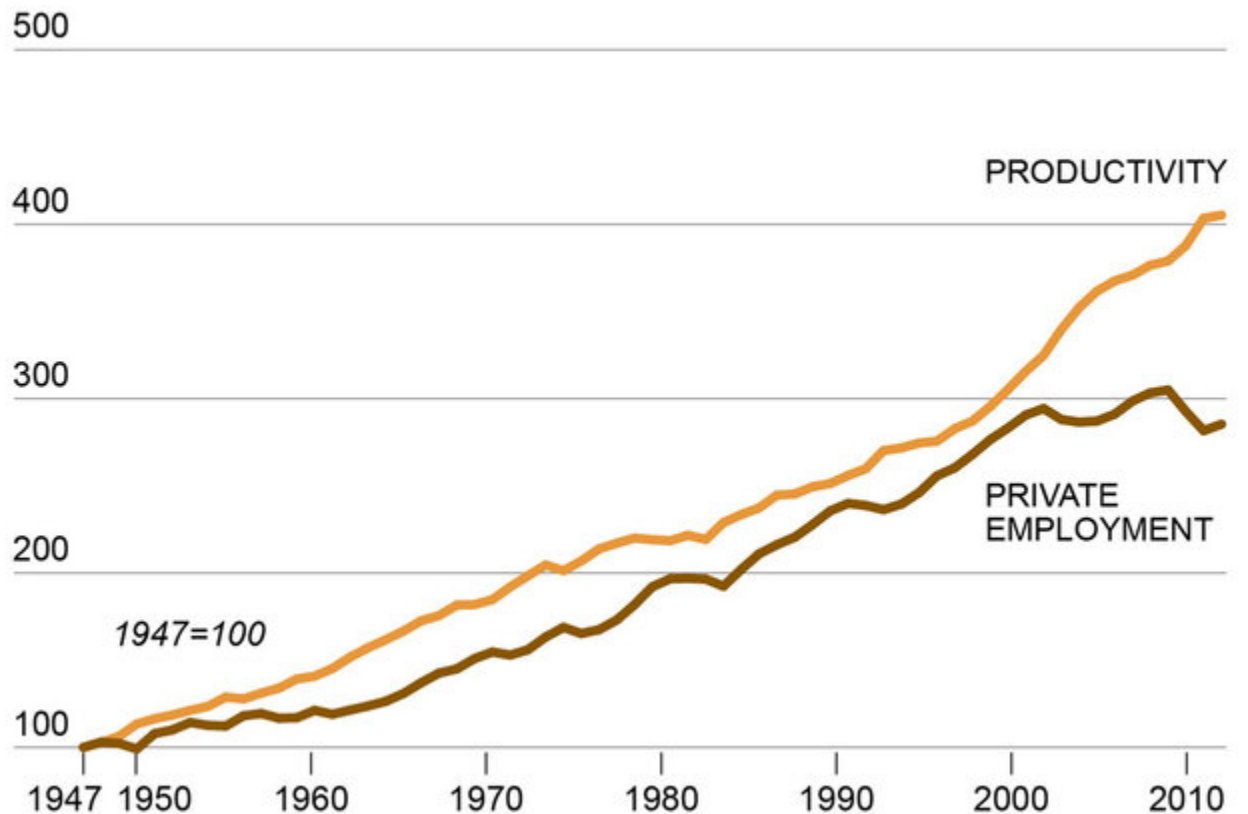
[Enlarge This Image](#)



A WONDERFUL ride has come 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, ar

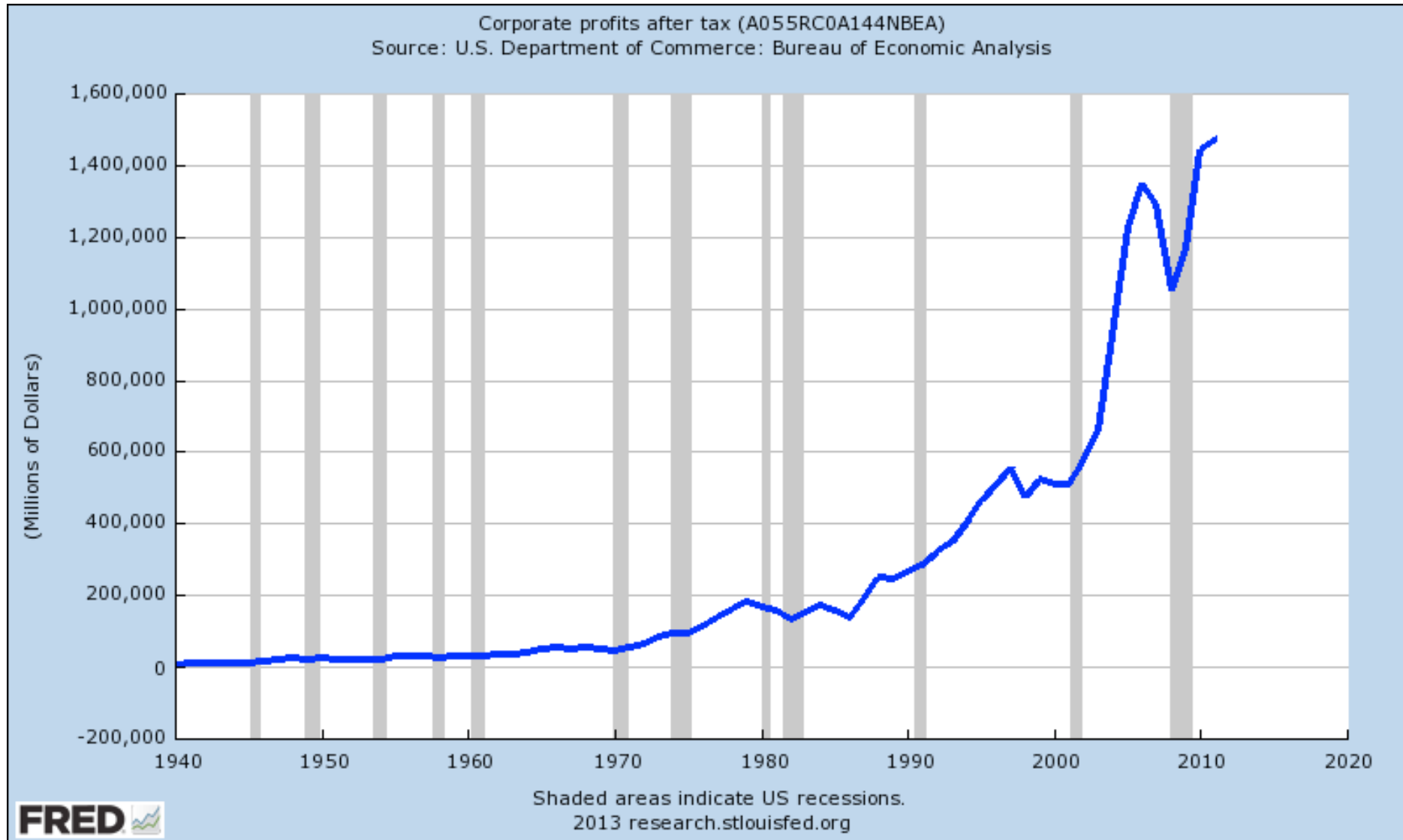
# Decoupling

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

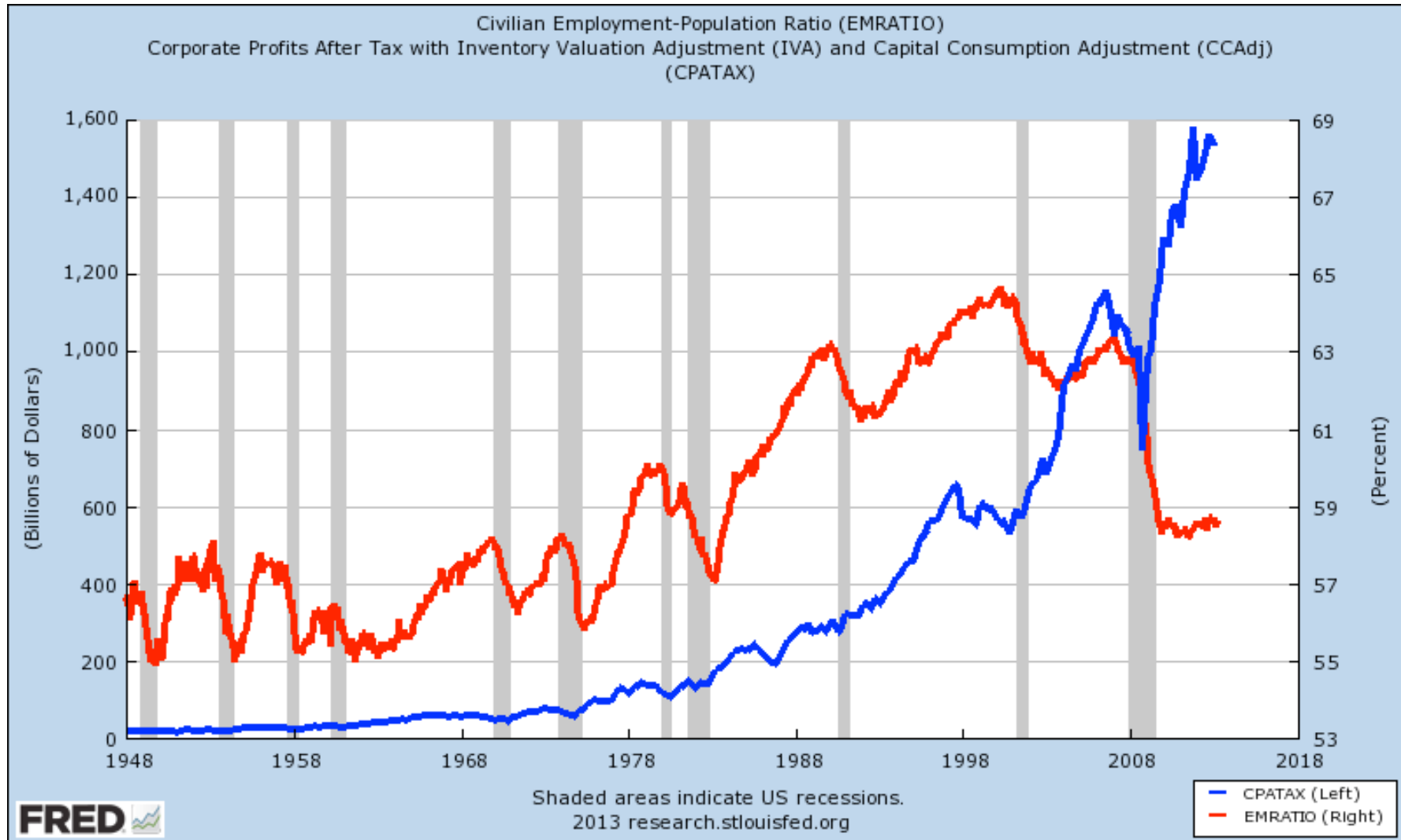


Sources: U.S. Department of Labor, Bureau of Labor Statistics

# 기하급수적 상승: 미국 기업 이익



# 문제점: 이윤 회복율과 일자리 회복율 차이



**MANUFACTURING  
ENDGAME**

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

**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

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

**MANUFACTURING ENDGAME**

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

By [Christopher Mims](#) | [@mims](#) | February 15, 2013



# Columnists

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

February 3, 2013 8:06 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



**E**arly 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

## Babbage

Science and technology



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Latest from all our blogs

Artificial intelligence

# Difference Engine: Luddite legacy

Nov 4th 2011, 16:10 by N.V. | LOS ANGELES

Like 3.9 Tweet 1,105



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# Leontief

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



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# Jeremy Rifkin

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## 2가지 방향으로 진행

1. 생산기술의 발달로 인해 노동의 필요성 자체가 없어진다

2. 노동에 대한 자리가 없어진다

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# **OODA-Loop Framework**

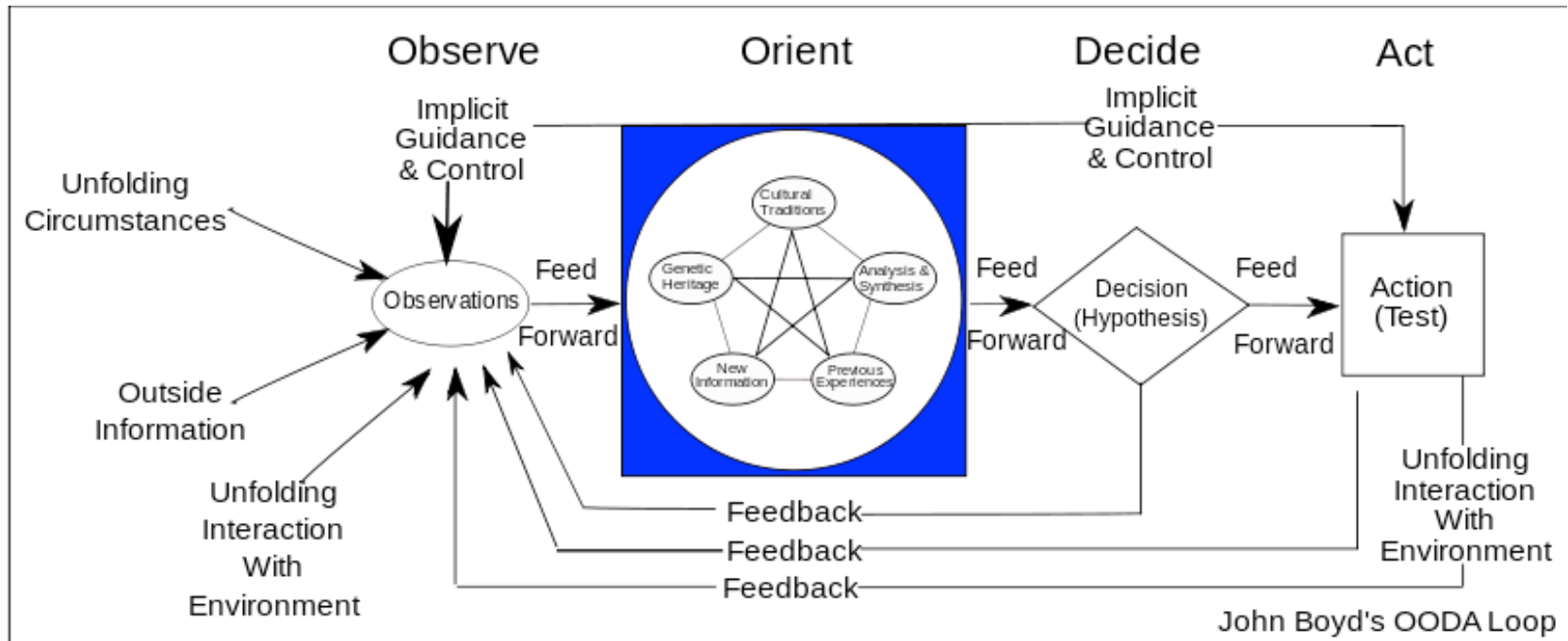
---

**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?**

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# 다른 관찰

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## Babysitter



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# 다른 관찰

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## Cleaning





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# 다른 관찰

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## 무인 무기 drones



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# 다른 관찰

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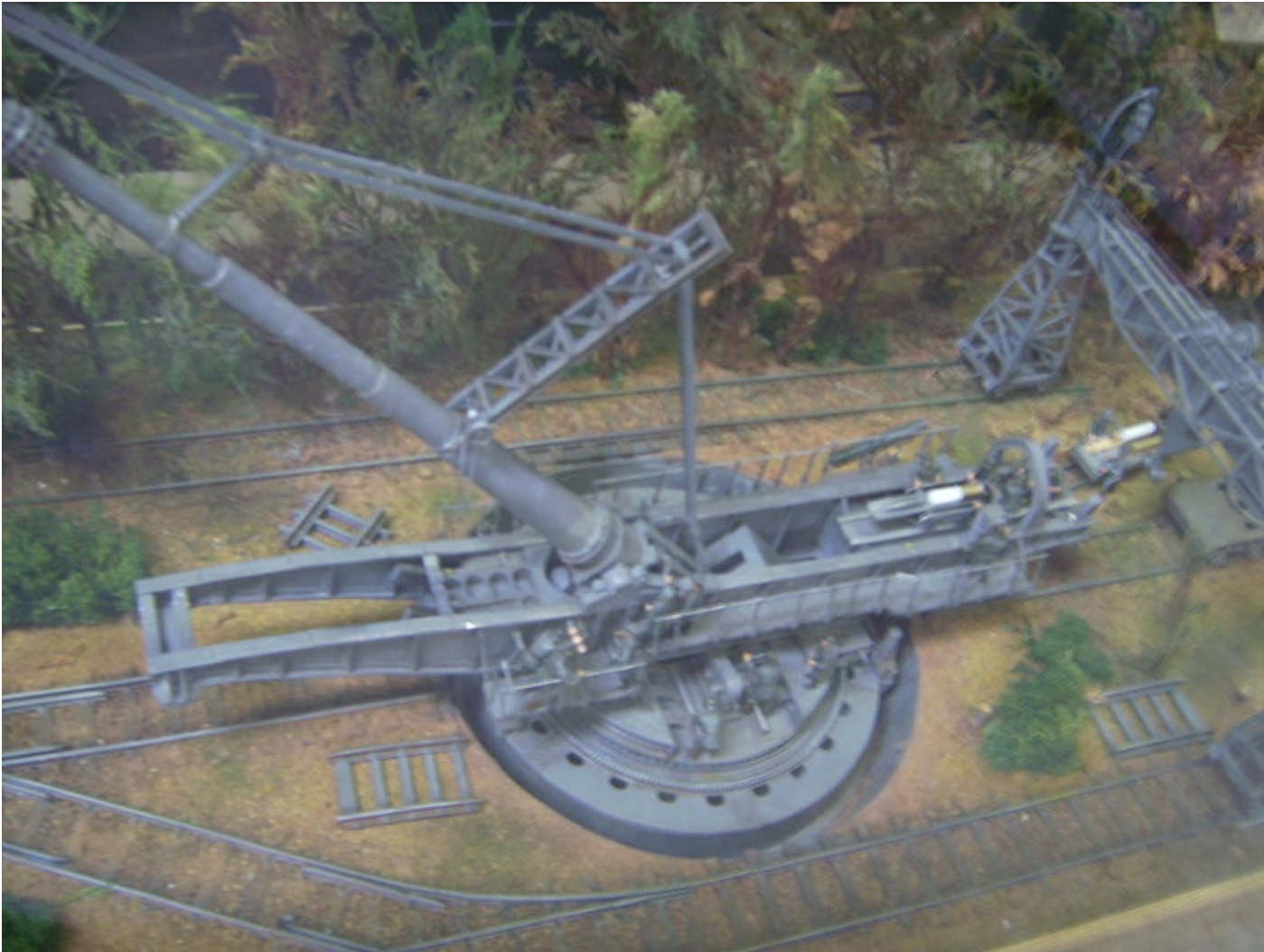
무인 무기 drones



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# 무인 무기 = 인간/군인 대체

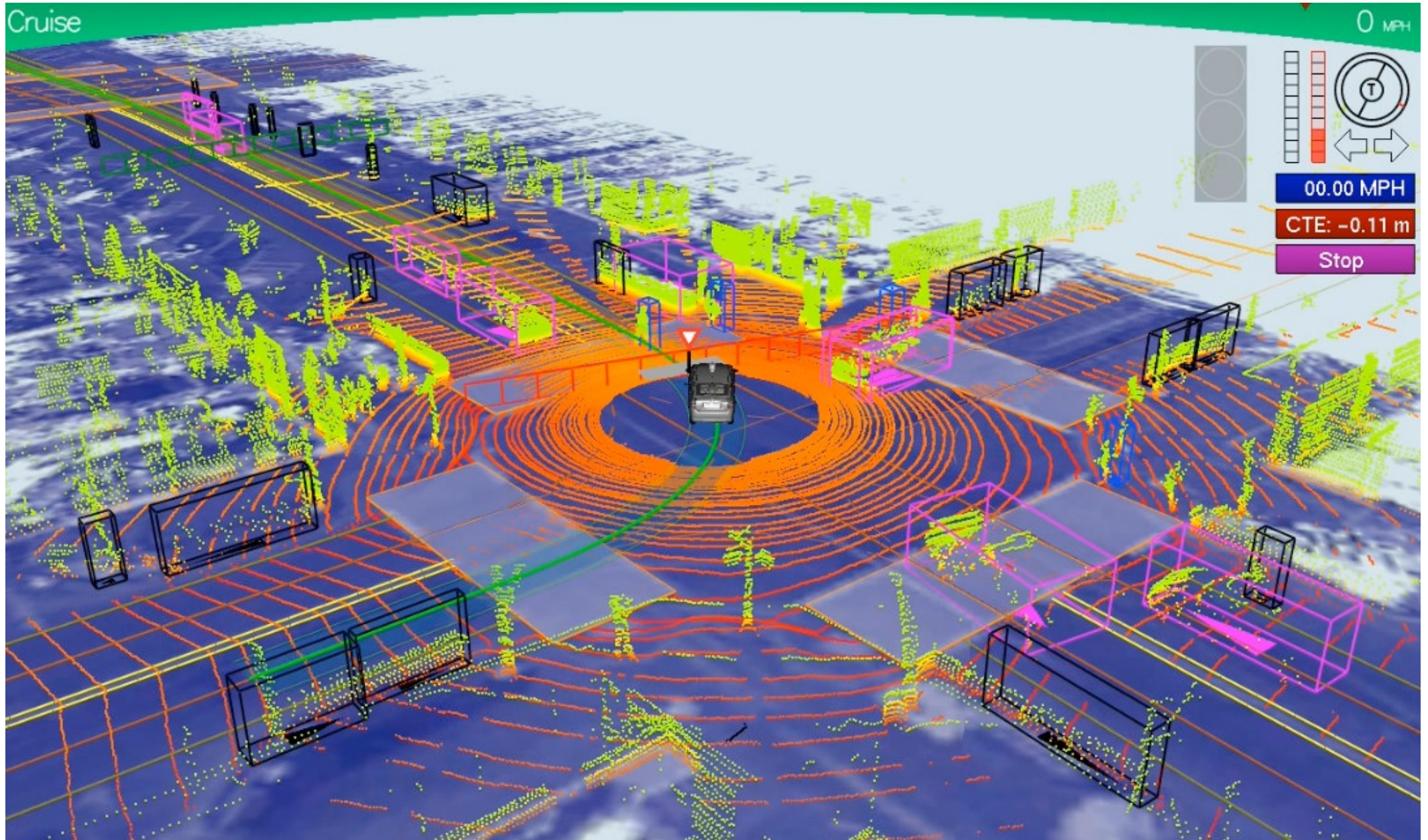
---



# 다른 관찰

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





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# 결과/영향

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## Self-Driving Cars

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

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# 다른 관찰

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지금까지 살펴본 것: 물리적 실체

알고리즘/프로그램

**High Frequency Algorithm**

Applications Places System 11:04 PM

ga4

```

File Edit View Search Terminal Tabs Help
ga1  x ga2  x ga3  x ga4  x ga5  x
Genes/Sec Processed: 2.14 Pool Size: 128 Total Processed: 30464
Loading the latest trade data..
Genes/Sec Processed: 2.13 Pool Size: 128 Total Processed: 30592
Loading the latest trade data..
Genes/Sec Processed: 2.13 Pool Size: 127 Total Processed: 30720
Loading the latest trade data..
Genes/Sec Processed: 2.13 Pool Size: 127 Total Processed: 30734
Loading the latest trade data..
Reset scores to force retest of winners...
-- Submit high score for id:444600145 to server (17812.59)
Genes/Sec Processed: 2.13 Pool
Loading the latest trade data..
Genes/Sec Processed: 2.13 Pool
Loading the latest trade data..
Genes/Sec Processed: 2.13 Pool
Loading the latest trade data..
Reset scores to force retest of
-- Submit high score for id
Genes/Sec Processed: 2.13 Pool
Loading the latest trade data..
Genes/Sec Processed: 2.13 Pool
Loading the latest trade data..
Reset scores to force retest of
-- Submit high score for id
Genes/Sec Processed: 2.12 Pool
Loading the latest trade data..
Genes/Sec Processed: 2.12 Pool
Loading the latest trade data..
Reset scores to force retest of
-- Submit high score for id
Genes/Sec Processed: 2.12 Pool
Loading the latest trade data..
Genes/Sec Processed: 2.12 Pool
Loading the latest trade data..

```

Trade Bot

```

File Edit View Search Terminal Help
save_records: saving record file
main: Available Funds (USDS,BTCS) :(139.79343, 7.69339984)

Thu Jul 7 23:03:23 2011
update: checking positions
get_price: downloading last price
update: current price 14.84607
load orders: downloading orders

```

reporting tool

```

File Edit View Search Terminal Help
Buy Target: $ 14.7981903466
Transactions: 2214
-----
status active
buy 14.7981903466
actual 0
target 14.9461722501

```

System Monitor

Monitor Edit View Help

System Processes Resources File Systems

**CPU History**

Memory and Swap History

Network History

Receiving: 443 bytes/s  
Total Received: 40.4 MB  
Sending: 210 bytes/s  
Total Sent: 126.9 MB

Bitcoin Genetic AI Trade Strategy Chart - Mozilla Firefox

file:///tmp/chart\_test.html

Bitcoin Genetic AI Trade Strategy Chart || [ALL Data](#) | [Latest Data](#)

Position axis left OR right

```

buy 14.7976023294
actual 0
target 14.9455783527
age 1
stop 10.5358928585
shares 0.25
cost 3.69940058234
trade_pos 1039.07121798
score 0
sell_period 0
buy_period 11218
generating trade chart...

```

gene\_server

```

localhost - - [07/Jul/2011 23:00:12] "POST /RPC2 HTTP/1.1" 200 -
put 1310094056.53 18079.1322079
localhost - - [07/Jul/2011 23:00:56] "POST /RPC2 HTTP/1.1" 200 -
get 1310094056.53 18079.1322079
localhost - - [07/Jul/2011 23:01:12] "POST /RPC2 HTTP/1.1" 200 -
put 1310094094.18 17544.8253371
localhost - - [07/Jul/2011 23:01:34] "POST /RPC2 HTTP/1.1" 200 -
put 1310094127.84 17812.5875053
localhost - - [07/Jul/2011 23:02:07] "POST /RPC2 HTTP/1.1" 200 -
localhost - - [07/Jul/2011 23:02:46] "POST /RPC2 HTTP/1.1" 200 -
put 1310094221.18 17557.9198657
localhost - - [07/Jul/2011 23:03:41] "POST /RPC2 HTTP/1.1" 200 -
localhost - - [07/Jul/2011 23:03:45] "POST /RPC2 HTTP/1.1" 200 -
get 1310094056.53 18079.1322079
localhost - - [07/Jul/2011 23:03:46] "POST /RPC2 HTTP/1.1" 200 -

```

```

load_orders: downloading orders
add_record: appending new record
save_records: saving record file
buy: trade entered:
  qty 0.1
  price 14.788
  target 14.946
  stop loss 10.5363115268
  cost 1.4788
  funds 139.79343

```

ga4 Trade Bot reporting tool gene\_server Bitcoin Genetic AI Tra... System Monitor



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# High Frequency Trading (HFT)

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**2009년 미국 증시 거래량 50%**

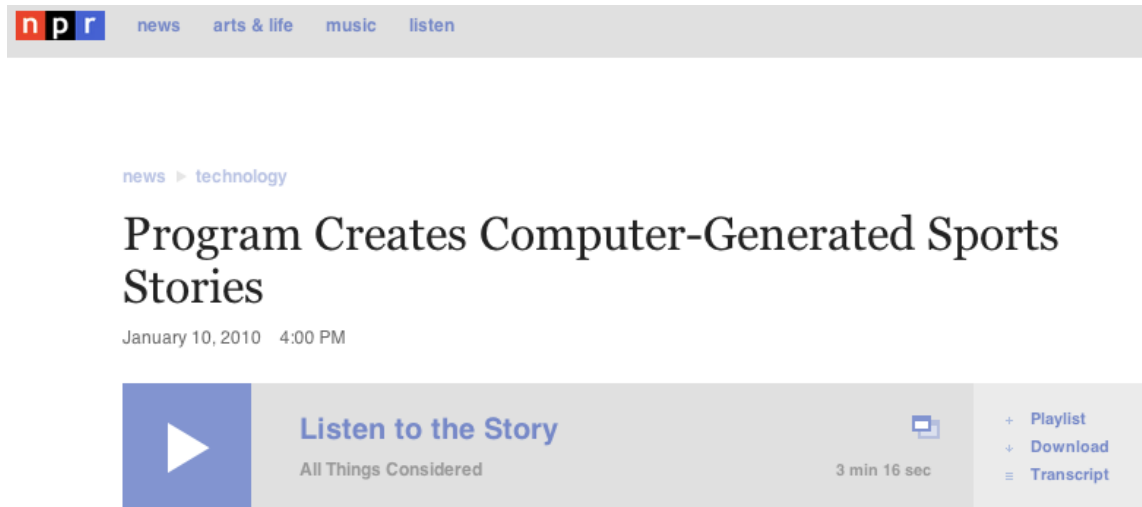
**현재 약 80% 추정**

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

# 알고리즘 저널리즘/로봇 저널리즘

## Stats Monkey

### 4 대학생, Northwestern University



The screenshot shows the NPR website interface. At the top, there is a navigation bar with the NPR logo and links for 'news', 'arts & life', 'music', and 'listen'. Below this, the breadcrumb 'news > technology' is visible. The main headline reads 'Program Creates Computer-Generated Sports Stories', dated 'January 10, 2010 4:00 PM'. A player interface is shown below the headline, featuring a play button, the title 'Listen to the Story', the subtitle 'All Things Considered', a duration of '3 min 16 sec', and a menu with options for '+ Playlist', '+ Download', and '= Transcript'.

Sportswriters now have new competition — in the form of a computer program called StatsMonkey.



DIGITAL DOMAIN

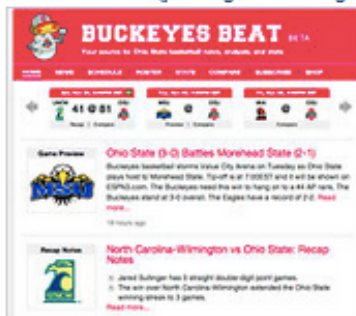
## When the Software Is the Sportswriter

By RANDALL STROSS

Published: November 27, 2010

ONLY human writers can distill a heap of sports statistics into a compelling story. Or so we human writers like to think.

Enlarge This Image



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, a Durham, N.C., company that serves up sports statistics in monster-size portions, thinks otherwise. The company, with nine employees, is working to endow software with the ability to turn game statistics into articles about college basketball games.

Established in 2007, [StatSheet.com](http://StatSheet.com) provides statistical analysis of college football and basketball, [Nascar](http://Nascar) and other sports. It dices data in more ways than any fan

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# StatSheet

THE NEW YORKER READER



HEALING POWERS

An iPad and iPhone collection of medical writing from the magazine's archive.

DOWNLOAD NOW

GADGET LAB

miscellaneous

### Can an Algorithm Write a Better News Story Than a Human Reporter?

BY STEVEN LEVY 04.24.12 4:46 PM

Follow @stevenle

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[Tweet](#) 2,560  
[+1](#) 444  
[Share](#) 745



future of media / media / newspapers

## Are robots and content farms the future of the news?

by Mathew Ingram APR. 25, 2012 - 2:17 PM PDT

4 Comments [Twitter](#) [Facebook](#) [LinkedIn](#) +1 [Email](#)

# The Atlantic



Why Do So Many People Pay for Writing School Still?

Arrested Development Reality-Warping Pow

Politics | Business | Tech | Entertainment | Health | Sexes | National | Global | China

Special Reports Video Photo Ebook Newsletters **JUST IN** Who Even Needs the Nation-State in the 21st Century? Er

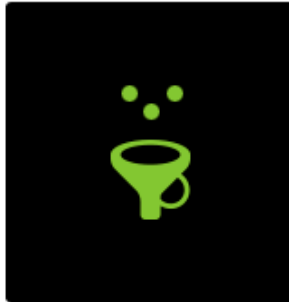
## Can the Computers at Narrative Science Replace Paid Writers?

JOE FASSLER | APR 12 2012, 8:03 AM ET

793 *A look at new software that could transform journalism*

## HOW QUILL WORKS

## Let Quill Do the Writing for You



## Receive Data

Quill imports your data and builds an appropriate narrative structure to meet the goals of your audience.



## Create Story

Using complex Artificial Intelligence algorithms, Quill extracts and organizes key facts and insights and transforms them into stories, at scale.



## Deliver Insight

Quill uses data to answer important questions, provide advice and deliver powerful insight in a precise, clear narrative.

# NarrativeScience

**2012년 Kristian Hammond “5년 안에 Pulitzer상 받겠다”**

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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**

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# 다른 관찰

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**Pattern Detection: (Big) Data Mining, Data Analytics**

**법, 의학, 스포츠 저널리즘**

# 다른 관찰

## Outsourcing

HOME STARTUPS MOBILE GADGETS EUROPE V



Video: Spirit of LeMons car-pl  
it

HOT TOPICS YAHOO APPLE FACEBOOK TWITTER GOOGLE MICROSOFT

### Foxconn Allegedly Replacing Human Workers With Robots

 JOHN BIGGS

Tuesday, November 13th, 2012


34 Comments



Foxconn <sup>TechCrunch</sup> has been 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 having a half-a-million of them in one

English.news.cn



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Global Edition | China | World | Business | Culture & Edu | Sports | Entertainment | Sci  
News | In-Depth

China

Most Searched: •Affordable homes •China-Russia

### Foxconn to replace workers with 1 million robots in 3 years

English.news.cn 2011-07-30 01:42:14

Feedback | Print | RSS | RSS | 





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# 다른 관찰

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## 3 D Printer



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# 반응 관찰

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

**과거 90% 노동자는 농업, 현재 2%**

**그럼에도 불구하고 일자리 있어**

You are here: Home > Collections > Jobs

Ads by Google



VIDEO EVERYWHERE WITH OYALA

GET A FREE TRIAL >>

# 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 | G8 | 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 I has "created 2.4 jobs for every job that it ha



0

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McKinsey&Company

McKinsey Global Institute



May 2011

## Internet matters: The Net's sweeping impact on growth, jobs, and prosperity



SAP ERP 솔루션으로 차원이 다른 비즈니스를 시작하시기 바랍니다. [세부 정보](#) [다시 보기](#)

RUN BETTER. **SAP**

HOME > 뉴스 > 전체기사 [RSS](#)

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

산업 매출 100억 늘때 국내 일자리 6.2명 창출... 고용없는 성장률 시작

기사 본문 SNS댓글 쓰기 [CAR VS CAR 자동차 안전조사 이벤트](#)

입력 2013-06-13 17:27:33 | 정 2013-06-13 03:30:33

기업공헌평가원 조사

금융위기 전엔 1.4명 불과  
생산성은 임금 상승 못미쳐

2008년 글로벌 금융위기 이후 국내 상장기업의 생산성 향상 속도가 임금 상승에 미치지 못한 것으로 나타났다. 생산성 향상 등에 따른 매출 증가 정도를 반영해 임금이 정해지지 않고 실적과 무관한 요인들이 급여 결정에 영향을 미쳤다는 얘기가.

이상규 경희대 경영학부 교수는 13일 서울 태평로 프레스센터에서 열린 '2013 한국기업 국가·사회 공헌도 콘퍼런스' 주제발표에서 "기업의 매출이 늘면 급여도 높아지게 마련이지만 금융위기 이후 1인당 급여 변화가 노동 생산성 변화에 기초하지는 않은 것으로 나타났다"고 말했다. 이 교수는 한국기업공헌평가원, 한국공인회계사회



1. 후대는 주말에 차라... 왜? 절반 이상 차니까
2. [2030 프렌차이즈 CEO] 매출 100억 원의 위안...
3. 동... 사기... 해... 수... 승... 번... 2... 스...
4. 지... 정... 세... 연... 은... 김... 인... S... S... ...
5. ... ... ... ... ... ... ... ... ... ... ...
6. [호과장 & 주내리] 친하던 상무님 왜안... ...
7. ... ... ... ... ... ... ... ... ... ... ...
8. ... ... ... ... ... ... ... ... ... ... ...
9. [전... ... ... ... ... ... ... ... ... ... ...
10. ... ... ... ... ... ... ... ... ... ... ...

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\* 「속격」은 헛에서 적금들지 마세요!!  
\* 이월된 PD 가릴적당식 시작 진짜 이유?  
\* 소중한 눈! 안보이기 전에 관리하자  
\* ... ... ... ... ...

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# 문제점 1: 중간영역 일자리 상실

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지금까지 기술 혁신은 저가 노동력 대체



ChroNeo

최근  
중간영역(변호사, 금융인, 기자 등)  
일자리 대체

일 자리를 잃은 중간영역은 어디로?

**“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/>**

**“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**

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## 문제점 2: 속도와 노동생산성 차이

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**“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>

**국가별 노동생산성 차이**

**임금하락 압력**





**표준화, 규격화: 노동대체의 기초**

**택배 비용 하락 = 임금 하락**

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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 !**

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## 방향설정 Orient

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**두 개의 극단적 반응**

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

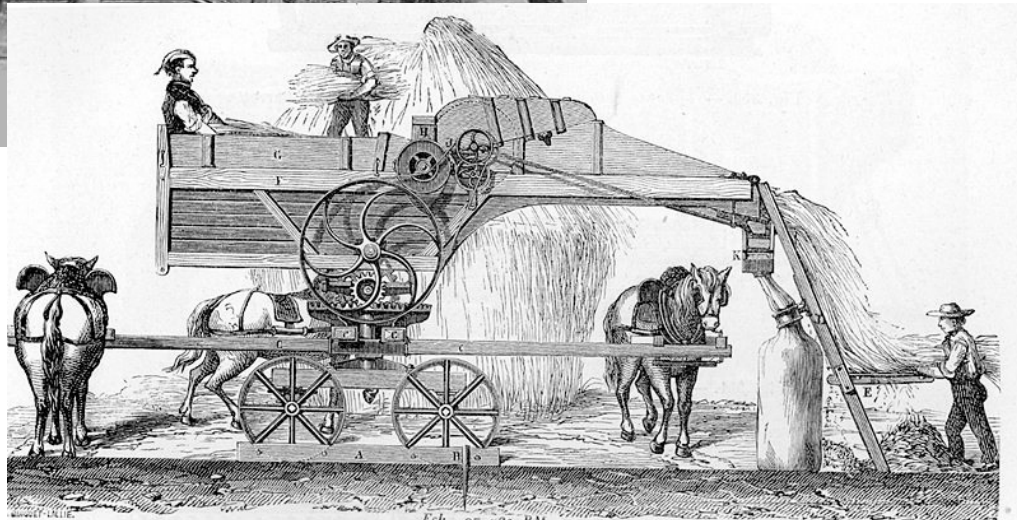
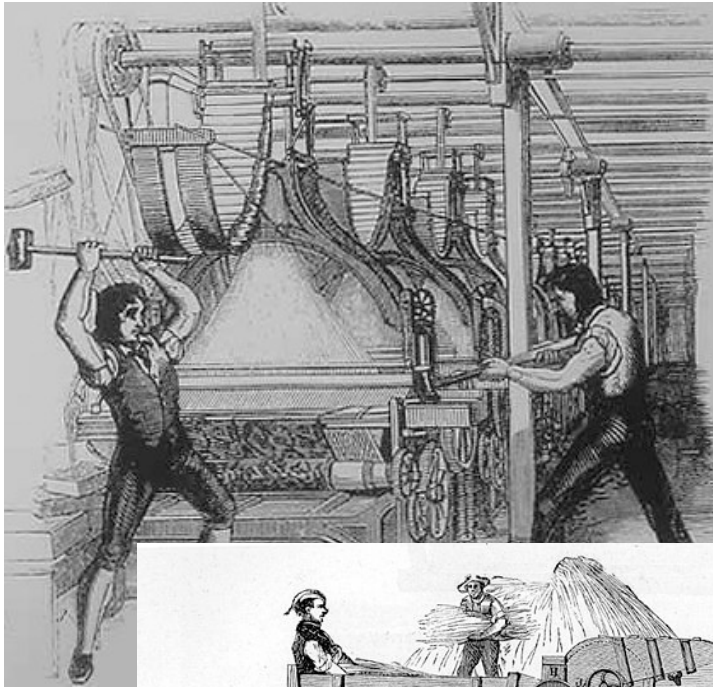
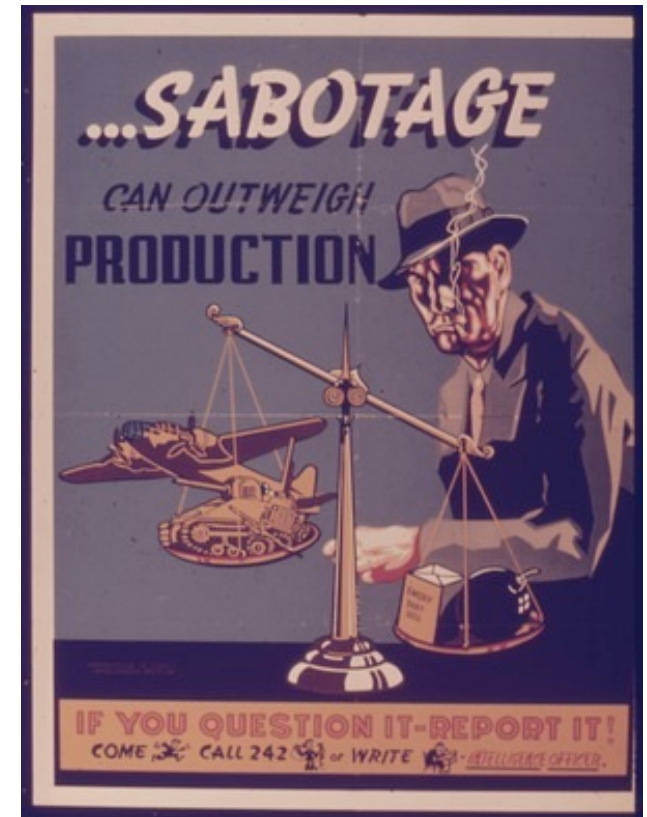
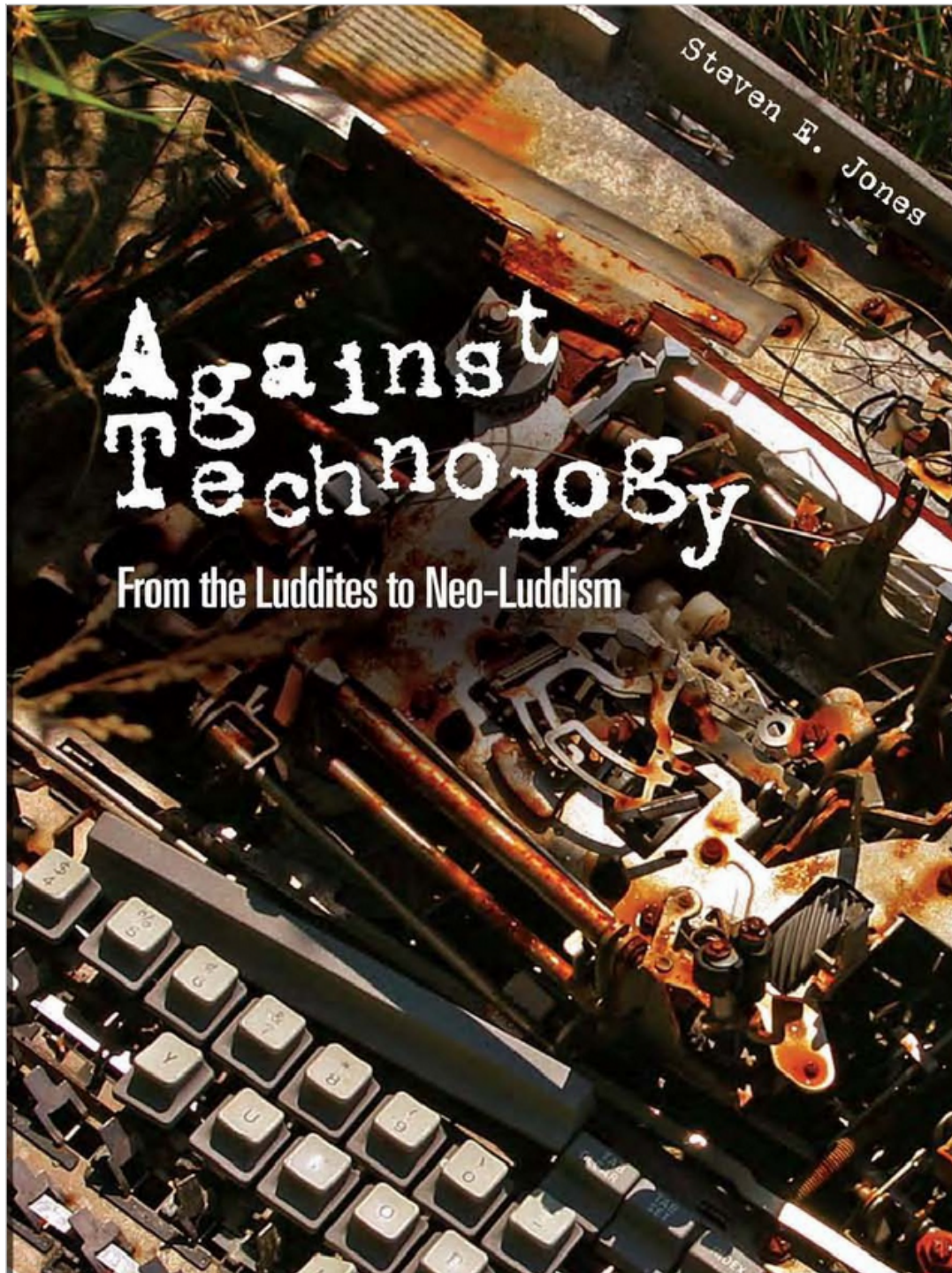


Fig. 349. — Batteuse Damey à manège direct placé sous la batteuse.

## Sabotage





**Steven E. Jones, 2006**

# 방향설정

## Dystopia

### Bloomberg Businessweek Companies & Industries

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### Tesco Monitors Employees With Motorola Armbands

By Claire Suddath

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February 13, 2013

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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.

**“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)**

**“capitalism arrived unannounced!”**



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## 또 다른 극단적 반응

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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**



**실리콘벨리/VC 관계자**  
**“우리에게는 다른 선택권이 없다.”**

**이 또한 매우 위험한 선택**

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# 방향설정

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**“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**

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# 방향설정

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극단적 가능성에 대한 우려  
다양한 선택 가능성에 대한 논의

한쪽에는 혁신이 일어나고  
다른 한쪽에서는 일자리 줄어들고 있어

생산성이 뛰어난 기계/알고리즘은 더욱 많아진다

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# 산업혁명

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기술 혁신

노동의 재조직

사회의 재조직

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# 방향설정 = Act

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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**