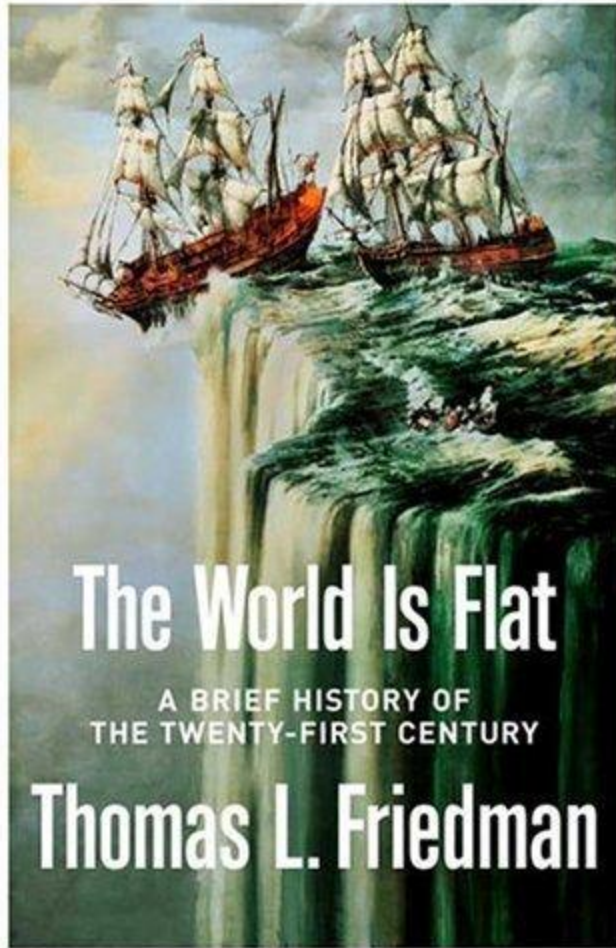




# The World is Flat

by Thomas L. Friedman

Giuseppe Attardi

# We are in 2005 if ...

- You accidentally enter your password on the microwave.
- You have a list of 15 phone numbers to reach your family of 3.
- You e-mail the person who works at the desk next to you.
- Every commercial on television has a web site at the bottom of the screen.
- You start tilting your head sideways to smile

:-)

# Globalization 1.0

1492-1800

**The driving force of global integration was how much brawn a country had and how it was deployed. Countries and governments led the way in breaking down walls and knitting the world together.**

# Globalization 2.0

## 1800-2000

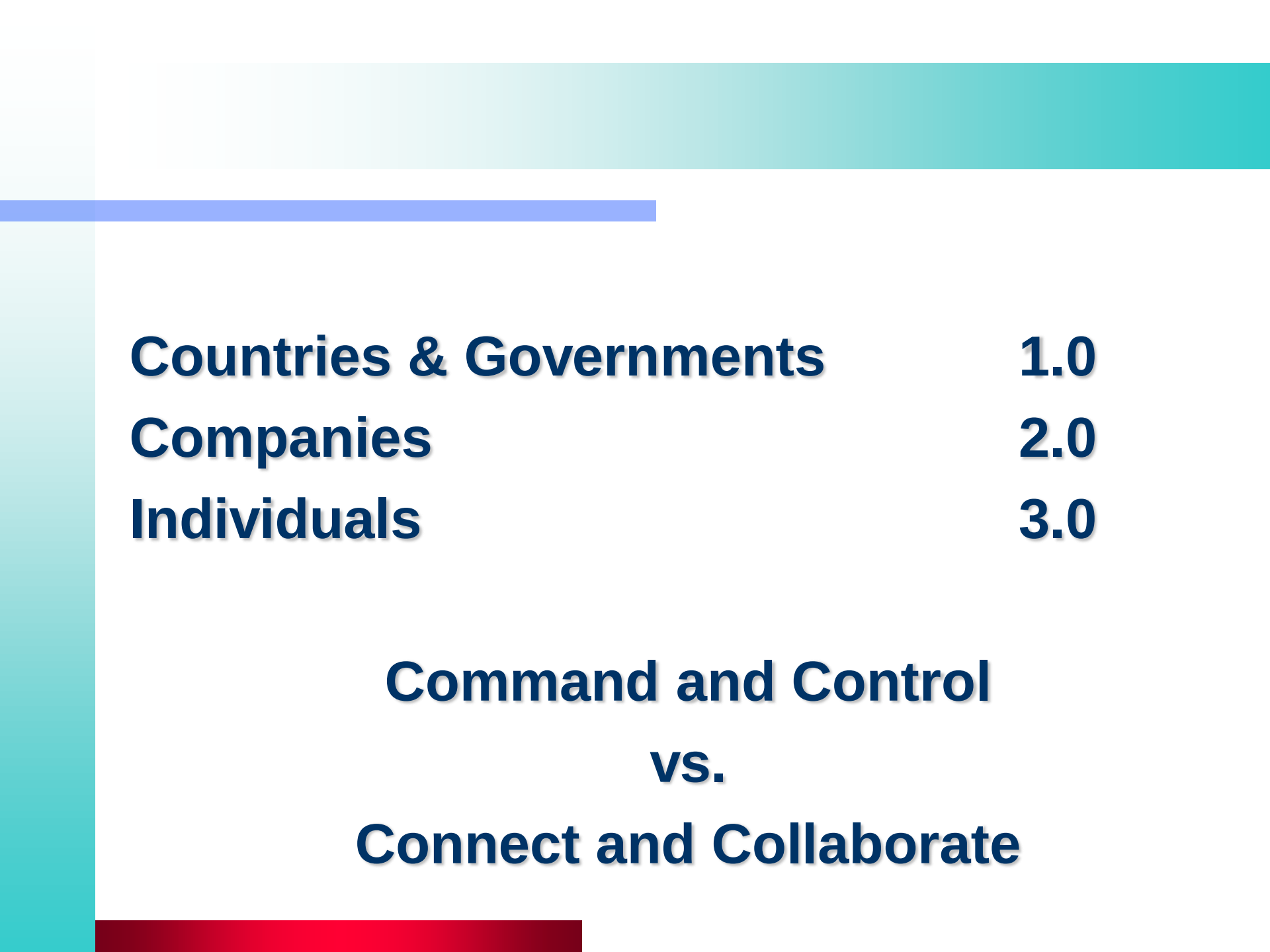
**The driving force of global integration was multinational companies. These multinationals went global for markets and labor, spearheaded first by the expansion of the Dutch and English joint-stock companies and the Industrial Revolution. First half powered by falling transportation costs, second half by falling telecommunication costs.**



# Globalization 3.0

## 2000-?

**The driving force of global integration is the newfound power for individuals to collaborate and compete globally. The lever is not horsepower, not hardware, but software. . .in conjunction with the creation of a global fiber-optic network that has made us all next-door neighbors.**



|                                    |            |
|------------------------------------|------------|
| <b>Countries &amp; Governments</b> | <b>1.0</b> |
| <b>Companies</b>                   | <b>2.0</b> |
| <b>Individuals</b>                 | <b>3.0</b> |

**Command and Control**  
**vs.**  
**Connect and Collaborate**

# Friedman's ten flattening forces

1. **Fall of the Berlin Wall**  
The events of November 9, 1989, tilted the worldwide balance of power toward democracies and free markets.
2. **Netscape IPO**  
The August 9, 1995, offering sparked massive investment in fiber-optic cables.
3. **Work flow software**  
The rise of apps from PayPal to VPNs enabled faster, closer coordination among far-flung employees.
4. **Open-sourcing**  
Self-organizing communities, à la Linux, launched a collaborative revolution.
5. **Outsourcing**  
Migrating business functions to India saved money *and* a third world economy.

# Friedman's ten flattening forces

6. Offshoring  
Contract manufacturing elevated China to economic prominence.
7. Supply-chaining  
Robust networks of suppliers, retailers, and customers increased business efficiency. See Wal-Mart.
8. Insourcing  
Logistics giants took control of customer supply chains, helping mom-and-pop shops go global. See UPS and FedEx.
9. In-forming  
Power searching allowed everyone to use the Internet as a "personal supply chain of knowledge." See Google.
10. Wireless  
Like "steroids," wireless technologies pumped up collaboration, making it mobile and personal.

# Globalization

- **How many in this room would have thought in 1995 that they would be economically secure if they had a degree in computer science?**
- **How many feel that way today?**
- **Bangalore, India**

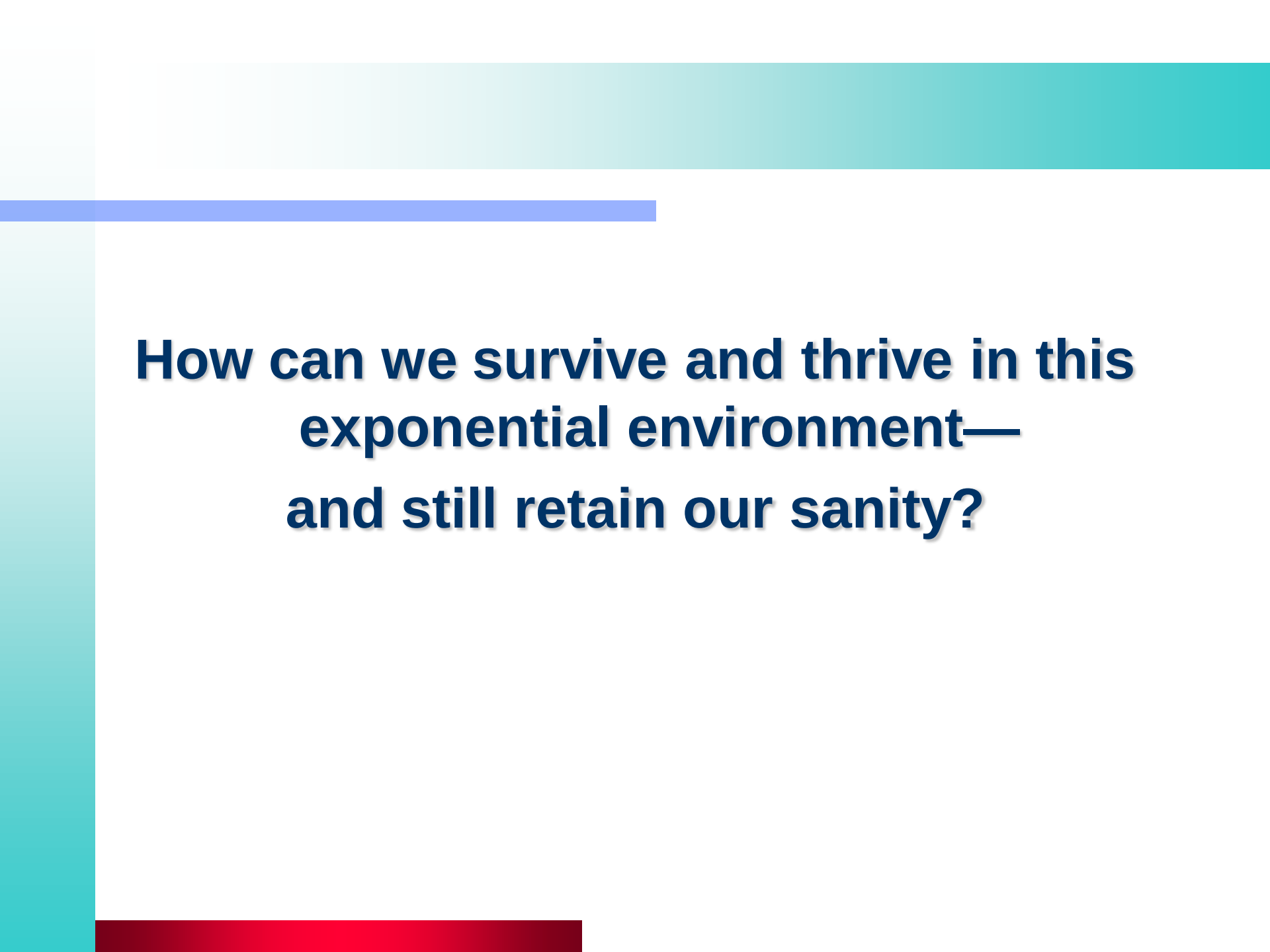
# Flat World Challenges

- **No Italian University in the top 50 at the world finals of the ACM International Collegiate Programming Contest (Univ. Roma 32th at regional selections).**
- **Universities in China and Russia took the top prizes.**

# Flat World

- **Playing field has been flattened – traditional advantages accruing to one country or another are being challenged**
- **Other countries can compete for global knowledge work as never before**
- **intellectual work, intellectual capital, can be delivered, distributed, produced, and put back together again ... with relative freedom in the way we do work**





**How can we survive and thrive in this  
exponential environment—  
and still retain our sanity?**

# Let the Flattening Begin...



# Flattener #1: Fall of Berlin Wall

- **People could perceive globalization**
- **Windows operating system shipped 5 months after the fall of the Berlin Wall**
- **A single global graphical user interface to actually look at this flat plane through**

# Flattener #2: Netscape

- **Netscape really brought the Internet alive**
- **Netscape triggered the dot-com boom which triggered the accidental overinvestment of \$1 trillion in fiber optic cable in 5 years**
- **That crazy, ridiculous, absurd overinvestment made Bangalore, Beijing and Bethesda next door neighbors**
- **It drove down the cost of transmitting words, music and data to basically zero**

# Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your  
Application Talk to My Application*



# Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*



Higglytown Heroes

Recording Session: New York or LA

Animation: Bangalore

Design & Direction: San Francisco

Writers: Florida, London, New York,  
Chicago, LA, or San Francisco



## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

When the walls went down, and the PC, Windows and Netscape browsers enabled greater connectivity, people wanted to do more than just send e-mail & pictures.

They wanted to make things, sell things, create things, buy things, and read somebody's X-rays, and do their taxes, from anywhere in the world



## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

Software applications needed to be able to connect with other software applications quickly, easily, and efficiently. Therefore we entered the next stage...

The glory of vanilla...







## Flattener #3 – Work Flow Software

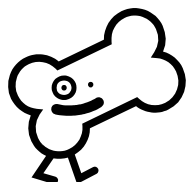
*Let's Do Lunch: Have Your Application Talk  
to My Application*

To get REALLY flat, not only did the software applications need to talk to each other, but internal departments needed to become interoperable...

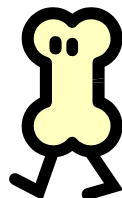
The Marketing Bone's connected to the...

Sales Bone. The Sales Bone's connected to the...

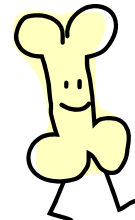
Accounting Bone. The Accounting Bone's connected to the...



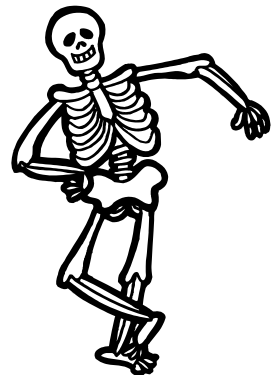
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## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

Next came the language translations...

# XML & SOAP



XML plus SOAP = data description language and transport protocol



## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

Once this technical foundation was in place, more and more people starting writing work flow software programs for more and more different tasks.





## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

*Standards don't eliminate innovation, they just allow you to focus it. They allow you to focus on where the real value lies, which is usually everything you can add above and around the standard.*

Joel Cawley, IBM Strategic Planning Unit



## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

Customer to Customer (C2C) Transactions:

**PayPal®**

**eBay®**



## Flattener #3 – Work Flow Software

*Let's Do Lunch: Have Your Application Talk  
to My Application*

*The next level of standards will be about automating all these processes, so they flow even more seamlessly together and can stimulate even more standards...all of these standards, on top of the work flow software, help enable work to be broken apart, reassembled, and made to flow, without friction, back and forth between the most efficient producers...*

Joel Cawley, IBM Strategic Planning Unit

# Flattener #4 – Open Sourcing

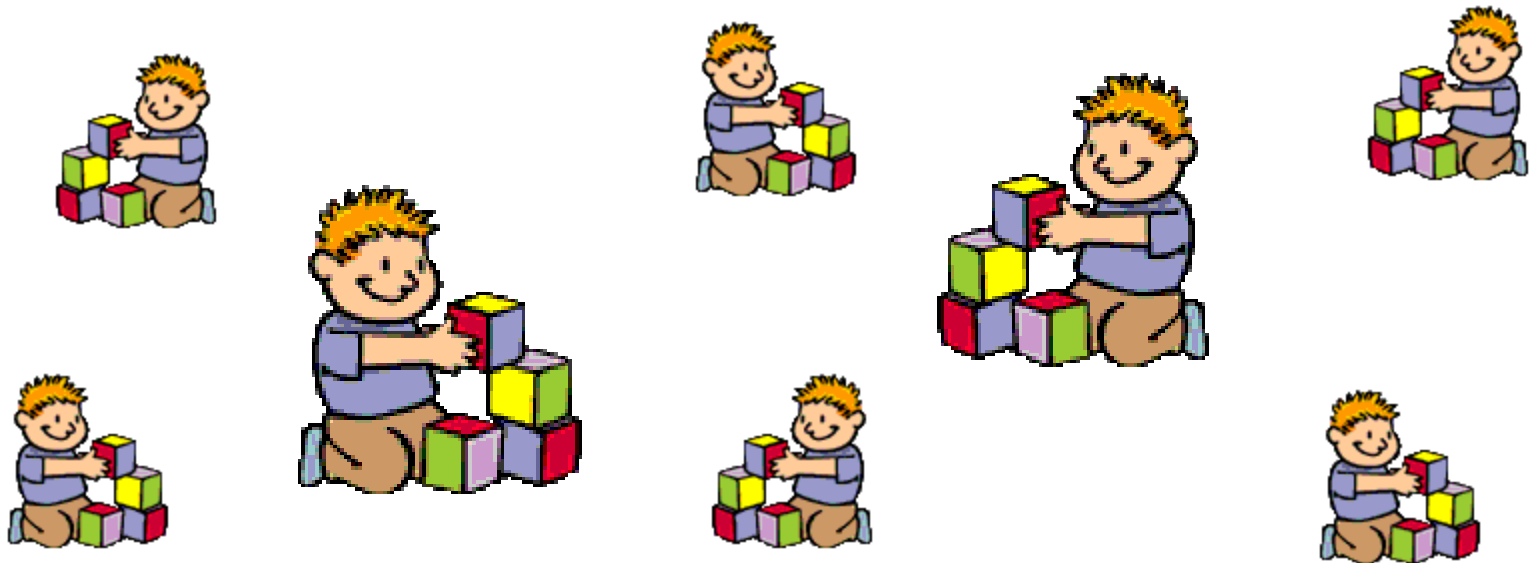
*Self-Organizing Collaborative  
Communities*



# Flattener #4 – Open Sourcing

*Self-Organizing Collaborative Communities*

The open source movement for software involves thousands of people around the world coming together online to collaborate in writing computer code...building from the bottom up instead of from the top down







## Flattener #4 – Open Sourcing

### *Self-Organizing Collaborative Communities*

The intellectual form of open-sourcing has its roots in the academic and scientific communities where for quite some time self-organized collaborative communities of scientists have come together to solve a problem.





## Flattener #4 – Open Sourcing

*Self-Organizing Collaborative Communities*

Why would people want to work in this way?

Friedman says it is all about ego. The people working on these problems feel they are pretty bright and writing a particularly tight piece of code is a way to show their peers just how brilliant they are. So open-sourcing is nothing more than a variation on peer reviewed science

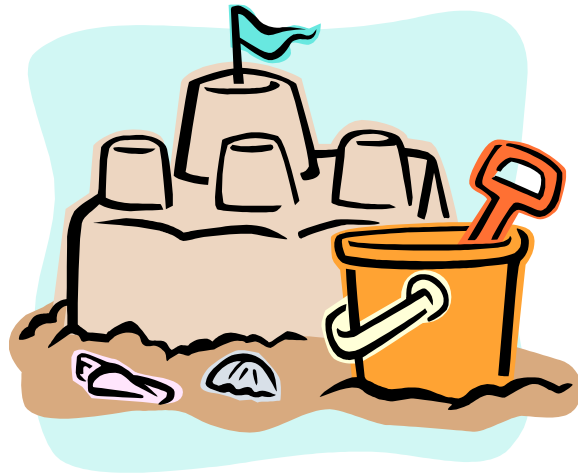




## Flattener #4 – Open Sourcing

*Self-Organizing Collaborative Communities*

Open-source programming is characterized by the collaborative innovation of many people working in gifted communities, as opposed to the industrial revolution where it was characterized by individual genius.



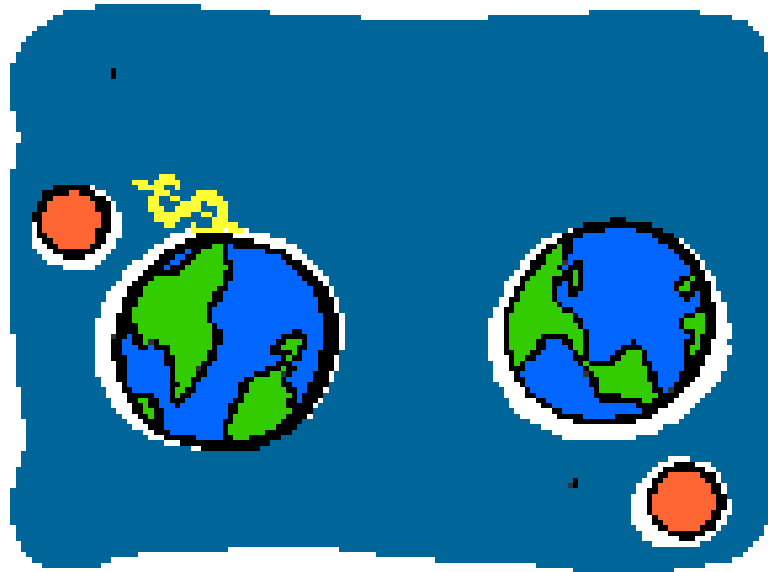
More people = better sandcastles



## Flattener #4 – Open Sourcing

*Self-Organizing Collaborative Communities*

But here is the rub. If everyone contributes their intellectual capital for free, where do the resources for new innovation come from? If there is no monetary motivation for improvement, who pays to make it better?



# Flattener #6 : Offshoring

- **11/121998: China joined the WTO**
- **Boost to collaboration through offshoring**
- **When a company takes a whole factory from Canton, Ohio, and moves it to Canton, China**

# African Proverb

**Every morning in Africa, a gazelle wakes up.  
It knows it must run faster than the fastest lion or it will  
be killed.**

**Every morning a lion wakes up.  
It knows it must outrun the slowest gazelle or it will  
starve to death.**

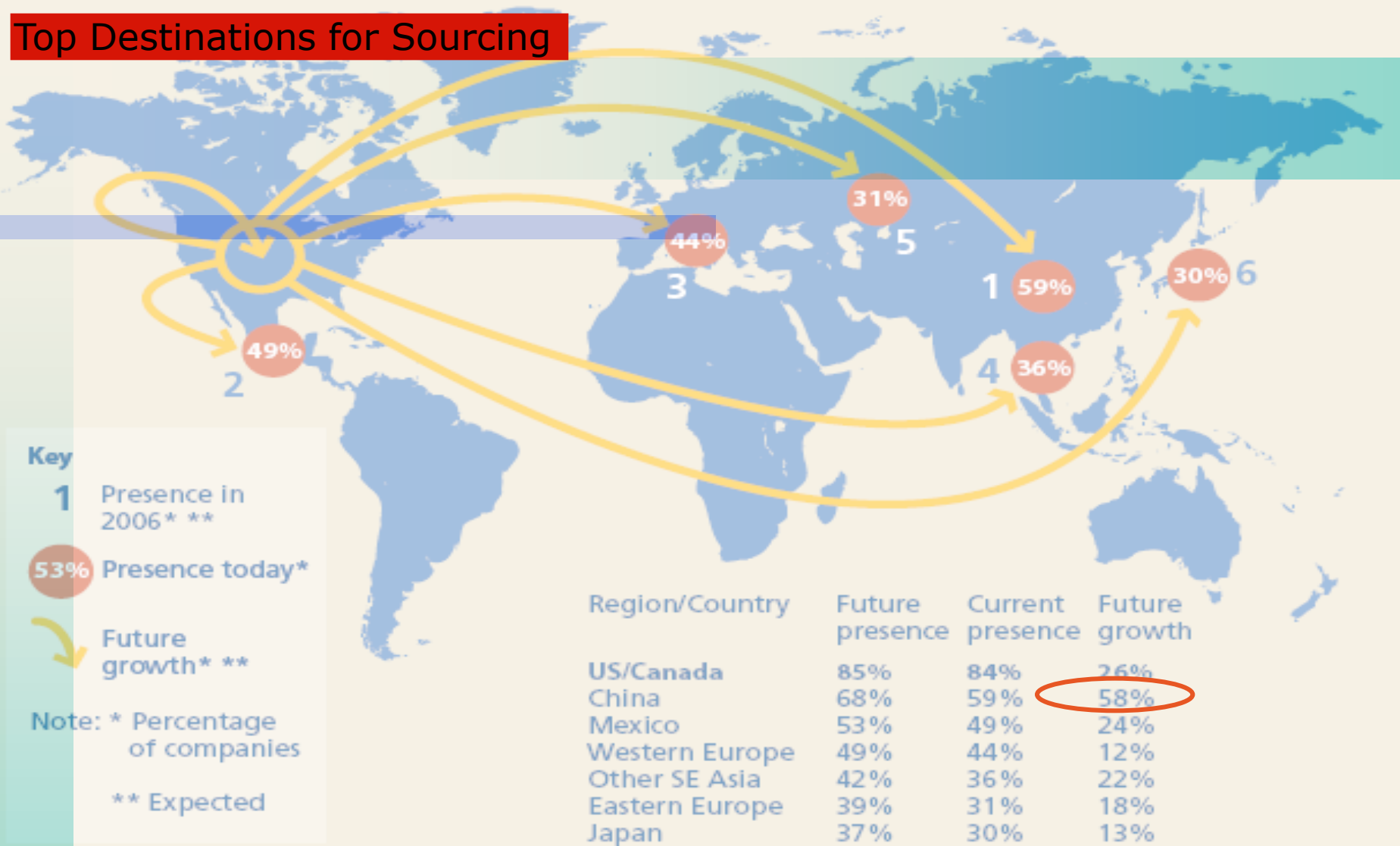
**It doesn't matter whether you are a lion or a gazelle.  
When the sun comes up, you better start running.**

# China Production

- China is the “world’s largest factory” in the early 21<sup>st</sup> century, producing:
  - More than 50% of the world’s cameras
  - 30% of the air conditioners and TVs
  - 25% of washing machines
  - Almost 20% of refrigerators
  - More than 33% of DVD-ROM drives and personal desktop and notebook computers
  - About 25% of its own mobile phones, color TVs, personal digital assistants, and car stereos

*Note: Information on this page is based on December 2003 issue of Foreign Affairs*

## Top Destinations for Sourcing



China is playing a big role as a low-cost supplier

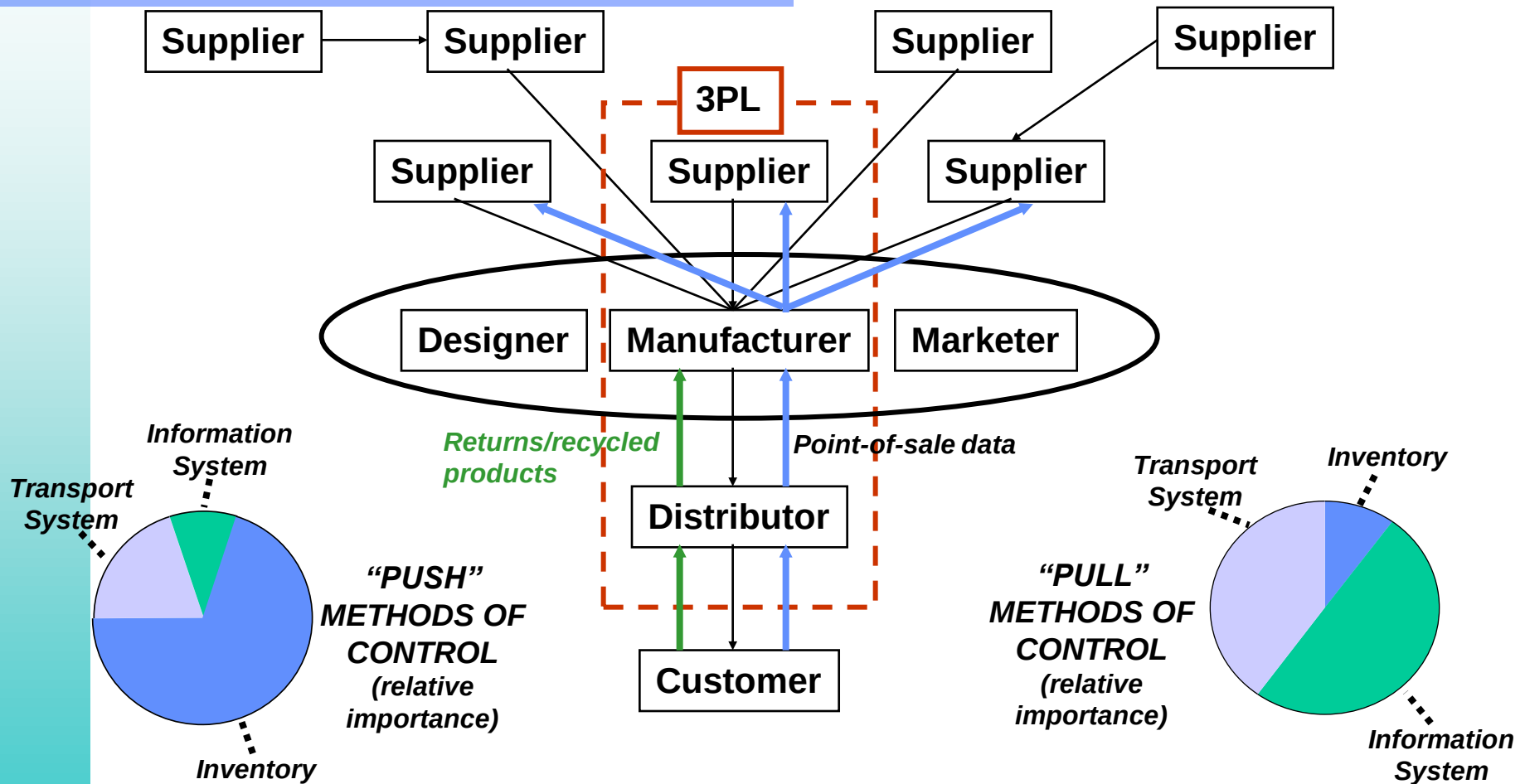
Source: Deloitte Research – Survey of 216 Executives in North America - 2003



# Flattener #7: Supply-Chaining

- **Wal-Mart moves 2.3 billion general merchandise cartons a year down its supply chain into its stores**
- **IT infrastructure a key competitive advantage**
- **Buy direct from manufacturers**
- **Open its sales DB to suppliers**
- **RFID tags on every item**

# Supply Chain Systems



# Flattener #8: Insourcing

- **FedEx and UPS doing logistics**
- **UPS picks up and repairs Toshiba PCs**
- **Online shop for Nike handled by UPS**
- **“Synchronized commerce solutions”**

# UPS Expanded Services

- “Your world synchronized” – from messenger service to dynamic supply chain manager.
- Toshiba: UPS picks up and delivers PCs in need of repair, but also repairs them.
- Papa John’s: UPS dispatches the PJ supply truck drivers and schedules the pickups of supplies, such as tomatoes, pizza sauce, and onions.
- Nike: UPS picks, inspects, packs, and delivers shoes; manages the warehouse.
- Jockey: UPS manages products at a UPS warehouse, fills the order, bags it, labels it, and delivers it.
- HP: UPS manages the replacement parts and repair divisions in Europe and Latin America.

# Technology-Based 3PL Services (2004)

| Technology-Based Service                               | Current Use | Future Requirements |
|--------------------------------------------------------|-------------|---------------------|
| Export/Import/Freight Forwarding/Customs Clearance     | 67%         | 7%                  |
| Warehouse/Distribution Center Management               | 66%         | 6%                  |
| Shipment Tracking/Tracing/Event Management             | 62%         | 16%                 |
| Web-Enabled Communications                             | 61%         | 21%                 |
| Transportation Management                              | 53%         | 9%                  |
| Internet-Based Transportation/Logistics Markets        | 23%         | 24%                 |
| Supplier Management Systems                            | 18%         | 15%                 |
| Customer Order Management                              | 14%         | 14%                 |
| Radio Frequency Identification & Asset Tracking (RFID) | 10%         | 53%                 |
| Supply Chain Planning Systems                          | 10%         | 17%                 |

*Source: Langley: 2004 3PL Study, Georgia Tech, Capgemini, and FedEx.*

# Flattener #9: In-forming Google, Yahoo!, Amazon

- **All knowledge made easily available**
- **In-forming is the ability to build and deploy your own personal supply chain of information, knowledge and entertainment**

# Flattener #10: The Steroids

- **Wireless connectivity**
- **All activities becoming digital, mobile, virtual and personal**
- **Digital: created, manipulated, transmitted**
- **Personal: done by you, for you, on your own device**
- **Huge data storage**
- **VoIP (Skype)**

# Triple Convergence (1)

- The informing helped the outsourcing.
- The outsourcing helped the insourcing.
- The insourcing drove the offshoring.
- At year 2000 a tipping point which created a global Web-enabled platform for multiple forms of collaboration and the sharing of work and knowledge irrespective of distance, geography, time and increasingly even language.



# Triple Convergence (2)

- **We have to learn how to horizontalize ourselves**
- **To get the productivity gains out of the flattening of the world, we're going to have to go from command and control value creation models to increasingly connect and collaborate horizontal value creation models**
- **Companies institute a system whereby they could make their customers their employees.**

# Triple Convergence (3)

- **Three billion people who were out of the game happened to walk onto the playing field, called India, China and the former Soviet Empire.**
- **They can compete and plug and play even more efficiently in many cases because they have no legacy systems to worry about.**
- **They can go right to the latest technology which is why there are more cell phones today in China than there are people in America.**

- **American CEOs know what's going on and they're insourcing and outsourcing and offshoring and informing like crazy.**
- **That's the good news.**
- **The bad news is that nobody has told the kids.**
- **So we just had an election campaign where the Democrats were debating whether NAFTA is a good idea and the Republicans put duct tape over the mouth of chief economist Greg Mankiw when he said outsourcing made sense and stashed him in Dick Cheney's basement.**

# Sorting out

- **Technologies have reduced frictions and barriers to a perfect market**
- **Nation-state and its laws are source of frictions**
- **Which legal barriers and protections should be maintained?**

# Who exploits who?

- **An Indian consulting firm won a contract to save the taxpayers of Indiana \$8 millions**
- **The deal was signed by pro-labor Democrats, but scrapped by free-trade Republicans**

# Company boundaries

- **Lenovo bought IBM PC division**
- **10,000 IBM people moved to Lenovo**
- **IBM bought 19% of Lenovo**
- **A CEO remarked that if he can buy 5 brilliant asian researchers for the price of one European, he will buy them**

# Company conflicts

- **In 1900, conflict between labor and capital**
- **Now between customer and worker**
- **Customer wants more for less**
- **Company can't guarantee jobs, only customers can**

# US and free trade

- **Argument against outsourcing: in a flat world not only goods, but also services are tradable**
- **US could be headed for decline**
- **Counterargument: this dip will not be permanent as long as the global pie keeps growing**
- **Lump of labor will grow if new things are invented**



# Chinese wages

- **Knowledge workers wages were low because they were trapped in a stifled economy**
- **Already happening in Bangalore: programmers wages are rising**
- **Worry about low-skilled Americans**
- **What the programmer or drug inventor has to sell, can be sold in the global market**

# The untouchables

- **Workers who are special (e.g. Michael Jordan)**
- **Specialized (lawyers, surgeon, architects, software architects)**
- **Anchored (barber, nurses, plumbers)**
- **Really adaptable (constantly acquire new skills, knowing how to “learn how to learn”)**

# US qualities

- **Best university system**
- **MIT graduates founded 4,000 companies**
- **Best-regulated and most efficient capital market**
- **Openness of society**
- **Quality of IP protection**
- **Flexible labor laws**
- **Largest domestic market**
- **Great meeting point**

# The numbers gap

- **Steady erosion of US scientific and engineering base**
- **Number of jobs requiring such training will grow, but offer will decrease**
- **So far attracted foreign engineers**
- **Flattening allows them to stay home**

# The ambition gap

- **Sending jobs abroad US companies save 75% on wages and increase 100% in productivity**
- **Indian developers are very well educated and there are plenty of them**

# Europe

- **West Europe: fear, pessimism, suffocating government regulations**
- **East Europe: hope, optimism, sense of possibility**
- **Chinese do not want to work for Americans, do not want to be Americans, they want to dominate**

# The education gap

- **A lot of jobs going abroad are high-end research jobs**
- **MSR Beijing hired 200 brilliant people**
- **They work 15-18 hours/day through holidays: it's a chance of a lifetime**
- **60% of US top science students are recent immigrants**
- **It takes 15 years to create a scientist**

# Politics

- **Bush cut the National Science Foundation budget by \$100 million.**
- **Could you think of anything dumber?**
- **At least we have a flexible economy so we're still spinning off our Googles and our Firefoxes.**
- **Europe is not at all keeping ahead with that kind of creative destruction needed in order to keep innovating.**



# Friedman's Rules

1. **Dig inside yourself: identify core competence (value) and focus on that.**
2. **Being small and acting big - take advantage of tools for collaboration and move swiftly.**
3. **Being big and acting small - pay close attention to the client.**
4. **Collaboration is key - next layers of value creation are complex, no one can do it alone.**
5. **“Get a regular chest X-ray and share it with clients” in other words, assess your effectiveness, successes, and failures and learn from them.**
6. **Outsource to win, not shrink. - can hire more specialists, not downsize staff.**
7. **Outsourcing/insourcing is a positive trend!**