Discussion items

• Lots of P/Fs
• Continue introductions
• Other ideas for subjects?
  – My list - a few more thoughts
  – Your list
• Idea Posting session
• Teams!!
For Today

• Think whom you would like to work with
• Objective Form Team! 3-4 people
• Think (even choose) Term project
• Have a few alternatives
• Remember everything is alterable in the first two weeks
• If you have them at the end of the class, E-mail Phillip and myself with the names of teammates and Project choice
For Tuesday, October 3

- Have Team
- Have Term project
- Why did you choose this project?
- Have a few alternatives
Homework for Next Thursday

- Give name for Team
- Roles and Responsibilities
- Means of communication
- Give Ground Rules for your team
- Affirm topic choice (and back-up?)
- A or B
- Begin secondary research to scope project
- What are some of the key questions you would like to answer

- If the topic is not interesting switch!
Exercise (continued)

• Who are you?
• Why are you taking this course?
• One unusual thing about yourself. . .
Business Ecosystems

Where to find opportunities for innovation
Consider business ecosystems

• Loose networks—of suppliers, distributors, outsourcing firms, makers of related products or services, technology providers, and a host of other organizations—affect, and are affected by, the creation and delivery of a company's own offerings.

• Like an individual species in a biological ecosystem, each member of a business ecosystem ultimately shares the fate of the network as a whole, regardless of that member's apparent strength. From their earliest days, Wal-Mart and Microsoft—unlike companies that focus primarily on their internal capabilities—have realized this and pursued strategies that not only aggressively further their own interests but also promote their ecosystems' overall health.

-Marco Iansiti, Roy Levien
Walmart

• Shipping connections
• Supplier connections
• Global market
• Interface with local govt
• Inventory mgmt
• Customers
Business Ecosystems

• Questions to address
  – Give some examples of companies and industries which use the ecosystem model well
  – What has changed in the ecosystem model in these industries in recent years?
Examples of business ecosystems

• Defense Industry
  – DOD, Primes, subcontractors, sub-sub, etc., Congress, Allies
  – Value of life drives robotics and drones
  – Command and control drives communication
  – Defense spending
  – International relations
  – Russia, North Korea, ISIS
  – Adversary now and in future

• Wall Street
  – analysts, brokers, traders, members, SEC, investors, IT, etc.

What is changing here?
What’s changing in these areas?

• Health Care
  – Population is getting older
  – Complex system
  – Highly Politicized

• Globalization China and India
  – Middle class developing rapidly
  – Salaries (in China) rapidly rising
  – Harder to find qualified employees

• Energy
  – Fossil fuel prices flattened
  – Press for cleaner fuels

• Global Warming
  – Government involvement in emission regulation

• Wireless connectivity
  – Revolution is easier
  – Privacy compromised
Energy

• Ecosystem
  – Consumers, distributors, transporters, producers
  – Government – regulate and tax
  – Researchers
  – politics, international relations
    • OPEC
    • Others

• Changing
  – Global warming – awareness increasing- so is denial?
  – Rise of green energy – trendy, fashionable (maybe getting a little tired)
  – Prices – volatility decreased
  – Increasing number of products require power
  – Population growth zero in many developed parts of the world
  – National security concerns
  – Budget issues
  – Political issues (global warming denial)

• Opportunities
Energy

• Opportunities
  – Storage – smaller, more efficient, increased power and energy density
  – Increase efficiency – solar panels
  – Improve public transportation – High speed rail?
  – Electrical distribution
  – Bio-power
What else can happen to disturb an ecosystem?

Some *Major* Drivers of Change
War as a Driver of Change

- **WW1**
  - Aviation
- **WW2**
  - Jet aircraft
  - Radar
  - Nuclear energy
- **Cold War**
  - Semiconductors and Computers
  - Space flight
  - Missiles, Communication Satellites
  - Internet
- **War on Terrorism**
  - Drones
  - Cyber attacks
War

• Present Opportunities
  – Weapons systems
  – Electronic security
  – Unmanned war vehicles – buffer between our forces and neutralization of enemy
  – Information control

• Top Opportunities – Information control and electronic security
Technology as a driver of change

Fundamental Law

Technology → Change → Opportunity

*Always opportunities but there are times when opportunity abounds*
Economic/Political Issues Drive Change

• Globalization
• Modernization and Rise/redistribution
  – China
  – India
  – SE Asia
  – Eastern Europe
• Oil and Energy supply and control
• European Political Changes
  – Common Market tension
  – Russia
• Emergence of Cyberwarfare
• Nut case leaders
• What else?
Then there is Technology itself. . .
Possible Technologies

• Transportation
  – Zip car model
  – Autonomous automobiles
Possible Technologies

• Energy Storage
  – Batteries
  – Flywheels
  – Capacitors
  – Pumped water
  – Etc.
Possible Technologies

Energy Technologies
  – Beyond Fracking
  – Beyond Photovoltaics
• Pay/Go solar in Africa
• Off-shore Wind
• Storage
• Tesla!
Possible Technologies

- Robotics
  - Personal
  - Drones
  - Manufacturing
OK Enough!
Sales Session

• If there is an idea that you have that is different from anything that is mentioned.

• If there is an idea that you have that fits within the ideas mentioned but is an exciting specific case.

Stand up and tell us!
Ideas

• Hyperspectral detection for autonomous vehicles
• Advanced location detection using radar
• Vesicle delivery of drugs, etc
• Preventive medical applications of sound/ultrasound
• Early stage therapy for diabetic retinopathy
Sign up

Who feels they have workable ideas from the list?

• OR

Pitch your own idea
Team-Up Session